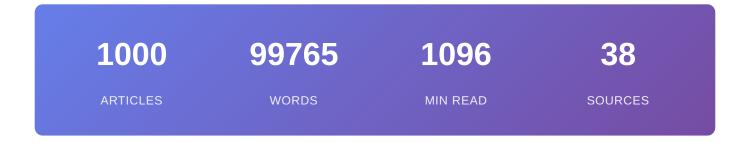


# Daily Briefing - November 01, 2025

Your Daily Tech & Programming Digest

Saturday, November 01, 2025



Today's Top Stories

IEEE EMBS Appoints Sunghoon "Ivan" Lee, Ph.D., as Editorin-Chief of EMBC Proceedings, the Leading Biomedical **Engineering Conference Publication** 











Summary: (Piscataway, N.J., August 12, 2025) Sunghoon "Ivan" Lee, Ph.D., a Donna M. and Robert J. Manning Faculty Fellow and an Associate Professor of computer science, electrical and computer engineering, and… <a class="continue" href="https:// www.embs.org/press/embc-eic-sunghoon-ivan-lee/">Continu...



https://www.embs.org/press/embc-eic-sunghoon-ivan-lee/

### The traffic jam hypothesis: Unravelling cellular dysfunctions in Parkinsonism diseases

BRAIN RESEARCH

**Summary:** Publication date: 1 December 2025<b>Source:</b> Brain Research, Volume 1868Author(s): Megha Manne, Brijesh Taksande, Milind Umekar, Madhura Vinchurney

https://www.sciencedirect.com/science/article/pii/S0006899325005657?dgcid=rss\_sd\_all

Effect of the plasma lipidome, immune cells, inflammatory proteins, gut microbiota, and plasma metabolites on Alzheimer's Disease: A two-sample Mendelian randomized study and mediation analysis



**BRAIN RESEARCH** 

**Summary:** Publication date: 15 December 2025<b>Source:</b> Brain Research, Volume 1869Author(s): Zenghui Liu, Lu Kuang, Xiaohui Zhou, Jiaxing Zhao, Qijun Chen, Huayu Yin, Xuehui Liu, Dabin Liu, Shaoguo Wu, Limei Wu

https://www.sciencedirect.com/science/article/pii/S0006899325005724?dqcid=rss\_sd\_all

# Characterization of cutaneous reflexes elicited from saphenous nerve stimulation

Hardesty, R. L., Parra, S. R., Wolpaw, J. R., Brangaccio, J.

A.

1
1
197
words

**BIORXIV NEUROSCIENCE** 

**Summary:** Phantom limb pain (PLP) is a chronic neuropathic condition that affects amputees. Cutaneous reflexes (CRs), mediated by spinal interneuronal circuits, represent a potential pathway linking non-nociceptive input to nociceptive modulation that could be targeted with neuromodulatory techniques such as ...

Read full article:

https://www.biorxiv.org/content/10.1101/2025.10.30.685609v1?rss=1

# Multiscale intracranial EEG dynamics across sleep-wake states: toward memory-related processing

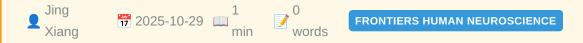


FRONTIERS COMPUTATIONAL NEUROSCIENCE

**Summary:** Sleep is known to support memory consolidation through a complex interplay of neural dynamics across multiple timescales. Using intracranial EEG (iEEG) recordings from patients undergoing clinical monitoring, we characterize spectral activity, neuronal avalanche dynamics, and temporal correlations a...

https://www.frontiersin.org/articles/10.3389/fncom.2025.1618191

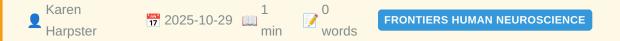
# Editorial: Changes in the auditory brain following deafness, cochlear implantation, and auditory training, volume III



**S** Read full article:

https://www.frontiersin.org/articles/10.3389/fnhum.2025.1715135

# Editorial: Visual perception in children and adolescents with visual impairments



https://www.frontiersin.org/articles/10.3389/fnhum.2025.1713145

# Electrophysiological and behavioural responses to consonant and dissonant piano chords as standardised affective stimuli

1 2025-10-29 min 2222 words

FRONTIERS HUMAN NEUROSCIENCE

Summary: Although the difference between consonance and dissonance has raised interest for decades in various fields of science, isolated chords are still underutilised as standardised affective stimuli in neuroscience. In the present study, we assessed whether consonant, dissonant, and neutral sounds evoked...

Read full article:

https://www.frontiersin.org/articles/10.3389/fnhum.2025.1689067

# CPRSCA-ResNet: a novel ResNet-based model with Channel-Partitioned Resolution Spatial-Channel Attention for EEGbased seizure detection



1 259 min words



FRONTIERS NEUROSCIENCE

**Summary:** Epilepsy is a common chronic neurological disorder caused by abnormal discharges of brain neurons, characterized by transient disturbances in consciousness, motor function, behavior, or sensation. Recurrent seizures severely impair patients' cognitive and physiological functions and increase the ris...

Read full article:

https://www.frontiersin.org/articles/10.3389/fnins.2025.1693079

# High-accuracy electrode implantation in deep brain structures using multi-camera neuronavigation in non-human primates

Ankur Gupta, Adrien Boissenin, Nikolaos Vardalakis, Mathieu Taillade, Hugues Orignac, Nathalie Biendon, Sandra Dovero, Tho Hai Nguyen, Amirouche Sadoun and Fabien B Wagner







JOURNAL NEURAL ENGINEERING

Summary: Objective. Precise electrophysiological recordings and stimulation of deep brain structures in large animal models such as non-human primates require highly accurate targeting methods that are currently lacking. Approach. To address this limitation, we have integrated advanced multi-camera neuronavi...



http://iopscience.iop.org/article/10.1088/1741-2552/ae135b

# PyHFO 2.0: an open-source platform for deep learning based clinical high-frequency oscillations analysis

Yuanyi Ding, Yipeng Zhang, Chenda Duan, Atsuro Daida, Yun Zhang, Sotaro Kanai, Mingjian Lu, Shaun Hussain, Richard J Staba, Hiroki Nariai and Vwani Roychowdhury







JOURNAL NEURAL ENGINEERING

Summary: Objective. Accurate detection and classification of high-frequency oscillations (HFOs) in electroencephalography (EEG) recordings have become increasingly important for identifying epileptogenic zones in patients with drug-resistant epilepsy. However, few open-source platforms offer both state-of-th...



http://iopscience.iop.org/article/10.1088/1741-2552/ae10e0

# A methodological framework for the efficient characterization of peripheral nerve stimulation parameters

Rachel S Jakes, Benjamin J Alexander, Vlad Marcu, A Bolu Ajiboye and Dustin J





JOURNAL NEURAL ENGINEERING

Summary: Objective. Restoring movement and somatosensation with peripheral nerve stimulation (PNS) requires precise neural activation. Because pulse amplitude (PA) and pulse width (PW) recruit axons differently, intentionally modulating both could enable more advanced PNS. However, mapping the PA-PW space is...

#### 

http://iopscience.iop.org/article/10.1088/1741-2552/ae0d31

# The impact of CSF-filled cavities on scalp EEG and its **implications**

Maria Carla
Piastra

1
2024-06-14

min

64

words

OOSTENVELD ROBERT

Summary: Previous studies have found electroencephalogram (EEG) amplitude and scalp topography differences between neurotypical and neurological/neurosurgical groups, being interpreted at the cognitive level. However, these comparisons are invariably accompanied by anatomical changes. Critical to EEG are the...

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# Motion-BIDS: an extension to the brain imaging data structure to organize motion data for reproducible research



1 72 min words

OOSTENVELD ROBERT

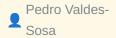
Summary: We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalitie...

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### One hundred years of EEG for brain and behaviour research







OOSTENVELD ROBERT

#### Read full article:

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# Freezing of gait in Parkinson's disease is related to imbalanced stopping-related cortical activity







OOSTENVELD ROBERT

Summary: Freezing of gait, characterized by involuntary interruptions of walking, is a debilitating motor symptom of Parkinson's disease that restricts people's autonomy. Previous brain imaging studies investigating the mechanisms underlying freezing were restricted to scan people in supine positions and yie...

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# The past, present, and future of the brain imaging data structure (BIDS)

Krzysztof J
Gorgolewski

Sorgolewski

Gorgolewski

Sorgolewski

Sorgolewski

Sorgolewski

Sorgolewski

Sorgolewski

Sorgolewski

Summary: The Brain Imaging Data Structure (BIDS) is a community-driven standard for the organization of data and metadata from a growing range of neuroscience modalities. This paper is meant as a history of how the standard has developed and grown over time. We outline the principles behind the project, the ...

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# **Human cortical high-gamma power scales with movement** rate in healthy participants and stroke survivors



1 65 min words

OOSTENVELD ROBERT

Summary: Motor cortical high-gamma oscillations (60-90 Hz) occur at movement onset and are spatially focused over the contralateral primary motor cortex. Although high-gamma oscillations are widely recognized for their significance in human motor control, their precise function on a cortical level remains el...

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## NIRS-BIDS: Brain Imaging Data Structure Extended to Near-**Infrared Spectroscopy**

Luca 1 70
Pollonini 2025-01-27 min words

OOSTENVELD ROBERT

Summary: Functional near-infrared spectroscopy (fNIRS) is an increasingly popular neuroimaging technique that measures cortical hemodynamic activity in a non-invasive and portable fashion. Although the fNIRS community has been successful in disseminating open-source processing tools and a standard file forma...

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# Pseudonymisation of neuroimages and data protection: <em>Increasing access to data while retaining scientific utility</em>

Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld robert

Oostenveld robert

**Summary:** For a number of years, facial features removal techniques such as 'defacing', 'skull stripping' and 'face masking/blurring', were considered adequate privacy preserving tools to openly share brain images. Scientifically, these measures were already a compromise between data protection requirements a...

#### Read full article:

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## Cycling on the Freeway: The perilous state of open-source neuroscience software

Tim M
Tierney

Summary: Most scientists need software to perform their research (Barker et al., 2020; Carver et al., 2022; Hettrick, 2014; Hettrick et al., 2014; Switters & Osimo, 2019), and neuroscientists are no exception. Whether we work with reaction times, electrophysiological signals, or magnetic resonance imaging data, ...

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### Optimal configuration of on-scalp OPMs with fixed channel counts



1 69 min words



OOSTENVELD ROBERT

Summary: Recent technological developments have brought optically pumped magnetometers (OPMs) within reach of the larger neuroscientific community. The current state-of-the-art consists of whole-head systems that measure the magnetic field at >100 locations. OPM sensors can be constructed to measure the fiel...

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# Six-Month Interim Analyses of the Efficacy of Repeated Low-**Level Red-Light Therapy Combined with Orthokeratology for Myopia Control in Spanish Children**

Fernando J Fernández-

1 28 min words

LOW VISION

Summary: CONCLUSIONS: The six-month interim analysis indicates that combining RLRL therapy with OK effectively controls myopia progression in Spanish children, with no severe adverse effects. Long-term follow-up is ongoing.

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# Predictors of posttraumatic stress disorder among displaced families in Lebanon: A cross-sectional study



1 72 min words

LOW VISION

Summary: This study aimed to assess the prevalence of posttraumatic stress disorder (PTSD) among Lebanese individuals internally displaced by the recent conflict and to identify key predictors of PTSD. The findings are intended to guide targeted policy and advocacy strategies aimed at improving mental health...

#### 

https://pubmed.ncbi.nlm.nih.gov/41166360/?

## Incidental ocular surface squamous neoplasia in pterygia: a systematic review and meta-analysis

Clara C Chan

1 47 min words

LOW VISION

**Summary:** CONCLUSIONS: This meta-analysis, based on low- to very low-certainty evidence, identified a 1.32% pooled prevalence of incidental OSSN in clinically diagnosed pterygia, highlighting the potential influence of UV exposure and equatorial proximity. The overlap in demographic and lesion characteristics...

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# The Hidden Benefits of Noise: Low-Frequency tRNS and **Dynamic Visual Noise Enhance Visual Processing**



1 70 min words



**LOW VISION** 

Summary: Sensory and perceptual processing is inherently shaped by both internal and external noise sources. While noise is typically seen as disruptive, it can, under certain conditions, enhance the detection of weak sensory signals-a phenomenon known as stochastic resonance (SR). Research on SR has primari...

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### **Headaches due to Low and High Intracranial Pressure**

1 63 words

LOW VISION

Summary: This article provides a comprehensive overview of high-pressure and lowpressure headaches, focusing on their pathophysiology, clinical presentation, diagnosis, and management. High-pressure headaches, often linked to idiopathic intracranial hypertension, primarily affect young women and can lead to...

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# **Synergistic Charge Generation and Collection Enabled by Incorporation of Crystalline Polymer for Ultrafast-Response Dual-Band Perovskite/Organic Photodetectors**

Aung Ko Ko

2025-10-31 min 66 words

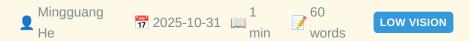
**LOW VISION** 

Summary: Dual-band photodetectors (PDs) capable of selectively responding to both visible and near-infrared (NIR) light are essential for applications in optical communication, medical diagnostics, and artificial vision systems. In this work, we report a highperformance visible/NIR dual-band PD based on a v...

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https://pubmed.ncbi.nlm.nih.gov/41169105/?

# Diabetic retinopathy screening in Australian general practice: persistently low uptake despite national guidelines and equity initiatives



**Summary:** CONCLUSION: Despite national guidelines, GP-led DR screening uptake remains low, with substantial geographic, demographic and temporal disparities in Australian general practice settings. Addressing systemic barriers, strengthening GP-led screening, and implementing targeted interventions are crucia...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41169341/?

# **Rare Ocular Complication After Prone Position Surgery: Bilateral Subconjunctival Hemorrhage Following Endoscopic Lumbar Discectomy**









Summary: Subconjunctival hemorrhage (SCH) is a rare complication in spinal surgery and is even more uncommon in endoscopic procedures, which are typically of short duration. We report the case of a 32-year-old male who developed bilateral SCH after an uneventful L4-L5 lumbar endoscopic discectomy performed u...

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https://pubmed.ncbi.nlm.nih.gov/41170305/?

# A Rare Co-Occurrence of Gastric Heterotopia and Autonomic **Nervous System Dysfunction: An Attempt to Explain If There** Is a Need to Explore Possible Syndromic Link



1 62 Low Vision min words



Summary: Gastric heterotopia (GHT) is the presence of gastric mucosa outside the stomach, including in the rectum. A 59-year-old man presented with rectal bleeding and altered bowel habits, along with long-standing low blood pressure and erectile dysfunction. Investigations confirmed rectal GHT, initially ma...

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## Ocular Syphilis in an Immunocompetent Patient: Through the Lens









Summary: Ocular manifestations of syphilis can occur at any stage of the disease and present with a wide range of clinical features. If left untreated, they carry a high risk of permanent vision loss. Although syphilis mainly affects individuals with human immunodeficiency virus (HIV) positive and other immu...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41170350/?

# The taste of trigeminal sensations: relation between taste, lingual tactile acuity, and spicy perception in patients with taste dysfunction

Thomas
Hummel

Thomas

Tactile Acuity

Thomas

Summary: In the oral cavity, oral stereognosis and chemesthesis refer to the abilities to recognize shapes and detect noxious substances, respectively, through various receptors distributed on the tongue. The absence of standardized methods to assess oral somatosensory perception has led to a lack of consens...

#### **⊗** Read full article:

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# **Measuring the Distribution of Tactile Acuity at the Index Finger and Thumb Fingertips**

Hiroyuki

1 75
min words

TACTILE ACUITY

Summary: In our day-to-day activities, we utilize not only the pads of our fingers but also the sides and hemispherical tips when manipulating objects. For teleoperation systems to replicate these real-life interactions, tactile sensation must be presented and distributed across the entire fingertip. Thus, u...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40526544/?

# Optimizing Vibrotactile Feedback for Sensory Substitution in the Thigh: Spatial Acuity and Frequency Characteristics

Leah R

Bent

1

69

words

TACTILE ACUITY

**Summary:** Amputation of a lower limb not only affects mobility but also interferes with sensory feedback, leading to an elevated risk of falls among individuals living with amputation. Sensory substitution, achieved through tactile displays embedded in transfemoral prosthetic sockets, presents a promising non...

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# Directional vibro-tactile hazard warnings for drivers with vision impairments





TACTILE ACUITY

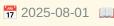
Summary: Vision impairment may delay responses to hazards when driving. In a proof-ofconcept driving simulator study, we evaluated a hazard warning device designed for vision impaired drivers. Three groups participated: 11 persons with central vision loss (CVL; median age 60 years), 12 with homonymous field...

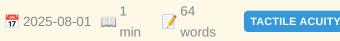
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https://pubmed.ncbi.nlm.nih.gov/40601880/?

# Sensitivity and vagal reactivity to C-tactile-mediated affective touch in mild cognitive impairment due to Alzheimer's disease







Summary: BackgroundC-tactile (CT) afferents preferentially activate in response to slow caress-like touch, evoking a diffuse pleasant sensation and promoting autonomic regulation. According to Braak's classic model, the neurodegenerative process in Alzheimer's disease (AD) only affects somatosensory cortices...

#### **⊗** Read full article:

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# Differences in tactile grid localization accuracy between people with back pain compared to individuals without pain









**Summary:** OBJECTIVES: The study aimed to investigate the grid localization test (GLT) between patients with lower back pain and those without back pain.

#### 

https://pubmed.ncbi.nlm.nih.gov/40850311/?

# **Eye Drop Instillation Success and Hand Function in Adults** with Glaucoma: A Pilot Study

Paula Anne Newman-Casev

1 74 TACTILE ACUITY words

Summary: CONCLUSIONS: Despite hand function deficits, in this exploratory pilot study, adults with glaucoma demonstrated eye drop instillation success comparable to those without glaucoma, though with higher rates of bottle tip contact with the eye, skin, or eyelashes, suggesting an increased risk of potenti...

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# Functional evidence for early origin of tactile acuity in the vertebrate somatosensory system

Sviatoslav N Bagriantsev

1 2025-09-13 min 58 words

TACTILE ACUITY

Summary: Mammals and reptiles possess a sophisticated somatosensory system for precise tactile discrimination via mechanosensory end-organs, such as Meissner and Pacinian corpuscles and others. These structures detect sustained pressure, velocity, and vibrations, thereby facilitating nuanced environmental in...

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https://pubmed.ncbi.nlm.nih.gov/40945511/?

# The coarse mental map of the breast is anchored on the nipple

Charles M

Greenspon

1

86

min

words

TACTILE ACUITY

Summary: Touch plays a key role in our perception of our body and shapes our interactions with the world, from the objects we manipulate to the people we touch. While the tactile sensibility of the hand has been extensively characterized, much less is known about touch on other parts of the body. Despite the...

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# **Haptic Feedback Systems for Lower-Limb Prosthetic** Applications: A Review of System Design, User Experience, and Clinical Insights







TACTILE ACUITY

Summary: Systems presenting haptic information have emerged as an important technological advance in assisting individuals with sensory impairments or amputations, where the aim is to enhance sensory perception or provide sensory substitution through tactile feedback. These systems provide information on lim...

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https://pubmed.ncbi.nlm.nih.gov/41007234/?

# A Biomimetic Fiber-Entangled Permeable Electronic Skin for Strain-Insensitive and High-Resolution Tactile Sensing









Summary: Electronic skins (e-skins) incorporating island architectures represent a promising platform for strain-insensitive tactile sensing by mechanically decoupling sensing units from deformations. However, conventional island designs encounter stress concentration issues caused by inherent modulus mismat...

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# **High-Density Tactile Sensor Array for Sub-Millimeter Texture** Recognition











Summary: High-density tactile sensor arrays that replicate human touch could restore texture perception in paralyzed individuals. However, conventional tactile sensor arrays face inherent trade-offs between spatial resolution, sensitivity, and crosstalk suppression due to microstructure size limitations and ...

#### 

https://pubmed.ncbi.nlm.nih.gov/40871941/?

# A Diachronic Investigation of the Change in Form and Formational-Semantic Systematicity of the Chinese Sign Language Lexicon



**Summary:** It has been argued in previous research that several competing pressures guide the directions of language evolution (economy vs. redundancy; arbitrariness vs. systematicity). For sign languages, however, the effects of competing pressures on their change of lexical systems remain largely unclear. In...

#### **⊗** Read full article:

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# Wireless Electrotactile System with Hydrogel-Based Electrodes for Conformal Tactile Interaction



**Summary:** A wireless epidermal electrotactile interface is demonstrated through integration of skin-conformal electrodes and flexible circuitry, addressing existing limitations in haptic technology caused by mechanical mismatch and system-level integration challenges. This electrotactile system achieves low s...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40891563/?

# Beyond access: rethinking assistive technology for individuals with visual impairments in Türkiye





Summary: CONCLUSION: Despite demonstrating adaptability, individuals with VI in Türkiye face significant structural barriers to equitable AT access. Informal learning limited public support, and a lack of locally adapted tools contribute to digital exclusion. A rightsbased approach-emphasizing inclusive fun...

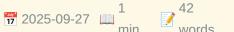
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# High prevalence of bacterial STI, anal HPV, cytological abnormalities and anal lesions among MSM in Togo, 2021: a baseline analysis of the ANRS I MIE 12,400/DepIST-H cohort









Summary: CONCLUSIONS: These findings emphasize the high prevalence of STIs among MSM and confirm the unusual distribution of HPV types in West Africa, with HPV35 being highly prevalent. A national strategy regarding STI screening and HPV vaccination in this key population is needed.

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41013315/?

# Development and Assessment of a Novel Audiosensory Performance Method for Improving the Oral Health of Visually Impaired Children



**Summary:** This study evaluated the effectiveness of an audiosensory performance method in enhancing oral health knowledge and status among visually impaired children aged 6-12 years in the National Capital Region (NCR), Delhi. An interventional study design was used, involving 251 participants equally divided...

#### 

https://pubmed.ncbi.nlm.nih.gov/41041413/?

# **Examining the ability of the interRAI communication** collaborative action plan to identify individuals with sensory challenges: A retrospective cohort study









Summary: CONCLUSIONS: The communication CAP was robust in flagging individuals with sensory impairments as these individuals are more likely to fall into the triggered to facilitate improvement group. The three case studies highlight the importance of assessing all aspects of communication (e.g., cognitive, ...

#### 

https://pubmed.ncbi.nlm.nih.gov/41127342/?

# **Analysis of Stability and Functionality of Coil and** Piezoelectric Braille Modules Under Varying Temperature Conditions







Summary: In this study, the performance and reliability of two different types of Braille modules, i.e., coil and piezoelectric, under varying temperature conditions were compared. The coil module works on the principle of electromagnetic forces generated by coils, while the piezoelectric module is based on ...

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# Challenges faced by visually impaired individuals from the perspective of faculty members: a phenomenological study









Summary: Visually impaired students in higher education face significant academic, social, and psychological barriers that are often overlooked by faculty. This phenomenological study explored these challenges at Hail University, Saudi Arabia, by purposively sampling six faculty members from the Colleges of ...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41169919/?

# Non-invasive brain stimulation combined with three rehabilitation approaches for cognitive and emotional well-being in Parkinson's patients



**Summary:** CONCLUSION: This study demonstrates that non-invasive brain stimulation combined with cognitive rehabilitation (CR) is the most effective approach for improving cognitive function in Parkinson's patients, while combined motor-cognitive rehabilitation (MCR) shows particular efficacy for emotional wel...

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https://pubmed.ncbi.nlm.nih.gov/41164398/?

# Precision Neuromodulation for Diabetes-Associated **Cognitive Decline: a Transcranial Electrical Stimulation Approach**







Summary: CONCLUSION: These findings indicate that tDCS presents a promising, noninvasive therapeutic approach. It demonstrates potential for enhancing cognitive function in patients with DACD and for facilitating improved long-term glycemic control. This highlights the role of brain neuromodulation as a com...

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# The Hidden Benefits of Noise: Low-Frequency tRNS and **Dynamic Visual Noise Enhance Visual Processing**









TDCS TACS TRNS

Summary: Sensory and perceptual processing is inherently shaped by both internal and external noise sources. While noise is typically seen as disruptive, it can, under certain conditions, enhance the detection of weak sensory signals-a phenomenon known as stochastic resonance (SR). Research on SR has primari...

#### Read full article:

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# A Comprehensive Review of Trigeminal Autonomic Cephalalgias







TDCS TACS TRNS

**Summary:** Trigeminal autonomic cephalalgias (TACs) are a distinct group of primary headache disorders characterized by unilateral pain and autonomic symptoms such as tearing, nasal congestion, and ptosis. This article provides an in-depth review of the different TAC subtypes, including cluster headache, short...

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# Effects on nonverbal numerical acuity performance after a single-session transient random noise stimulation over the intraparietal sulcus or dorsolateral prefrontal cortex







#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41168231/?

# Post-discharge use of opioids, psychostimulants, and treatment medications following residential opioid discontinuation with NET Device™ monotherapy







TDCS TACS TRNS

Summary: CONCLUSIONS: The randomized groups did not differ on outcomes. However, participants who self-administered active NET Device stimulation >24 hours reported significantly fewer post-discharge days of opioid or psychostimulant use than those who self-administered active <24 hours or sham, but these fi...

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# Anodal transcranial direct current stimulation does not alter GABA concentration or functional connectivity in the normal visual cortex







TDCS TACS TRNS

Summary: INTRODUCTION: Anodal direct current stimulation (a-tDCS) of the visual cortex is a potential rehabilitation tool for vision disorders such as amblyopia and macular degeneration. However, the underlying neural mechanisms are currently unknown. When applied to the human motor cortex, a-tDCS reduces th...

#### 

https://pubmed.ncbi.nlm.nih.gov/41169746/?

Can exercise therapy combined with transcranial direct current stimulation further improve balance ability in individuals with chronic ankle instability? A systematic review and meta-analysis







TDCS TACS TRNS

Summary: CONCLUSION: tDCS provides therapeutic benefits for dynamic balance only when combined with non-balance exercises. Current evidence is insufficient to demonstrate improvements in static balance with tDCS adjunctive therapy.

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### **Physical Therapy for Addiction**







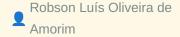
TDCS TACS TRNS

Summary: Physical therapy has the evidence-based scientific knowledge to address a wide range of physical and psychological problems of addiction. Neuromodulation techniques, including transcranial electrical stimulation (tES) methods like transcranial direct current stimulation (tDCS), transcranial alternat...

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https://pubmed.ncbi.nlm.nih.gov/41171569/?

The Effects of Transcranial Direct Current Stimulation Over the Prefrontal Cortex on Reactive Aggressive Behavior in Healthy Volunteers: A Systematic Review and Meta-analysis of Randomized Controlled Trials







TDCS TACS TRNS

Summary: CONCLUSION: While the overall analysis did not show a significant effect of anodal on reactive aggressive behavior in healthy volunteers, the results suggest that online tDCS and unilateral tDCS may have a potential impact. Given the heterogeneity of the studies and outcome measures, further researc...

#### 

https://pubmed.ncbi.nlm.nih.gov/41172252/?

#### A Study on Hemodynamic and Brain Network Characteristics During Upper Limb Movement in Children with Cerebral Hemiplegia Based on fNIRS



**Summary:** Background: Hemiplegic cerebral palsy (HCP) is a motor dysfunction disorder resulting from perinatal developmental brain injury, predominantly impairing upper limb function in children. Nonetheless, there has been insufficient research on the brain activation patterns and inter-brain coordination me...

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#### Task-Dependent Neural Activity in the Posterior Parietal **Cortex Is Associated with Better Balance in Adults with Acquired Brain Injury**









Summary: Background/Objectives: There is scarce evidence on the neural underpinnings of balance in people with chronic acquired brain injury (ABI). Thus, the objective was to measure this in adults with ABI during four balance tasks and to examine the relationship between neural activity and balance performa...

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# Medication vs. Movement in ADHD: Interaction Between Medication and Physical Activity on Neurocognitive Functioning



**Summary:** Background/Objectives: Movement during attention-demanding tasks may help compensate for cortical under-arousal in pediatric ADHD patients. However, the influence of medication during movement is unknown. This study assessed the impact of concurrent movement during executive functioning tasks on dor...

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#### A Systematic Review of Inter-Brain Synchrony and Psychological Conditions: Stress, Anxiety, Depression, **Autism and Other Disorders**



Y H Victoria 1 34
Chua min words



**Summary:** CONCLUSIONS: Collectively, the findings support IBS as a potentially dynamic, condition-sensitive, and contextually modulated neurophysiological indicator of interpersonal functioning, with implications for diagnostics, intervention design, and the advancement of social neuroscience in clinical sett...

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#### **DrSVision: A Machine Learning Tool for Cortical Region-**Specific fNIRS Calibration Based on Cadaveric Head MRI



1 63 min words





FNIRS

Summary: Functional Near-Infrared Spectroscopy is (fNIRS) a non-invasive neuroimaging technique that monitors cerebral hemodynamic responses by measuring near-infrared (NIR) light absorption caused by changes in oxygenated and deoxygenated hemoglobin concentrations. While fNIRS has been widely used in cognit...

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#### Early Motor Cortex Connectivity and Neuronal Reactivity in **Intracerebral Hemorrhage: A Continuous-Wave Functional Near-Infrared Spectroscopy Study**







Summary: Insights into motor cortex remodeling may enable the development of more effective rehabilitation strategies during the acute phase. We aim to assess the affected and unaffected motor/premotor/somatosensory cortex resting state functional connectivity (RSFC) and reactivity with continuous wave funct...

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#### Individual abilities to estimate levels of movement synchrony predict action observation network activation











Summary: Observers' ability to estimate levels of movement synchrony, such as in Olympic diving or rowing, is highly variable and, in part, constrained by personality traits and enjoyment of the movements. Embodiment also appears to play a crucial role, whereby stronger beliefs that one's body can complete p...

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The effects of combining anodal transcranial direct current stimulation with robot-assisted gait training on lower limb motor function and the motor cortex regulation of stroke patients



**Summary:** CONCLUSIONS: The combination of anodal tDCS and RAGT can enhance lower limb motor function in stroke patients, while also modulating the connectivity within the motor network. Additionally, the elevation of functional connectivity between the bilateral cerebral hemispheres, quantifiable through fNIR...

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#### The Impact of Sports Experience on Map Symbol **Representation in Orienteering Athletes and Its Neural Correlates: Evidence from Eye-Tracking and fNIRS**











Summary: CONCLUSION: High-level orienteering athletes exhibit domain-specific cognitive advantages in map symbol representation tasks. Long-term orienteering map reading training facilitates synergistic interactions between visual and neural information processing.

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# The Impact of Teachers' Autonomy Support on Students' Academic Performance from the Perspective of Hyperscanning: the Mediating Role of Autonomy Need Satisfaction



**Summary:** Previous research on self-determination theory has primarily focused on analyzing experiences and behaviors, without fully elucidating the neural basis of how teacher autonomy support influences students' academic performance. In this study, four individuals were selected to act as teachers, while 4...

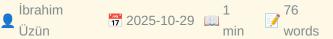
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#### **Fatal Isolated Right Ventricular Rupture Without External Chest Injury in a Young Driver: Forensic Autopsy Findings** After a One-Sided Vehicle Collision







BRAIN COMPUTER INTERFACE

**Summary:** Traumatic deaths are common, with cardiac trauma affecting 7–12% of patients with thoracic injuries. Blunt cardiac injury (BCI), although rare, is associated with a high mortality rate. This report presents a case of blunt cardiac rupture (BCR) observed at autopsy despite the absence of external che...

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#### Comparative analysis across diverse plant species reveals superior antibiofilm efficacy and dose-dependency of root extracts compared to leaf extracts







BRAIN COMPUTER INTERFACE

Summary: Although both root- and leaf-derived plant extracts hold potential as antibiofilm agents, research has predominantly focused on leaf tissues. In this study, we systematically compared the antibiofilm efficacy of 158 root and 248 leaf extracts from 360 plant species across five concentrations (0.1, 0...

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#### An Active, Multimodal Neural Interface for Real-Time Monitoring of Cortical Electrical, Thermal, and Optical **Dynamics**







BRAIN COMPUTER INTERFACE

Summary: Chronic neurophysiological monitoring devices facilitate the timely diagnosis and treatment of episodic or recurrent neurological disorders. Compared with passive electrodes, silicon-based active transistors provide intrinsic signal amplification and, when combined with capacitive-coupling measureme...

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#### Feasibility of decoding cerebellar movement-related potentials for brain-computer interface applications









BRAIN COMPUTER INTERFACE

Summary: 
In Brain-Computer Interface (BCI) applications, signals are conventionally acquired from the cerebrum, and only a subset of the complex interactions that occur in several areas of the brain are collected. One area that has not been investigated for BCI application is the cerebellum, despite its...

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#### Acute Effects of Portable Dry-EEG Neurofeedback on **Classical Chinese Learning: A Three-Arm Repeated-Measures** Study







BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: Portable dry-electrode EEG systems can reliably support realtime neurofeedback to enhance attention and cognitive control in complex language learning contexts. This study provides empirical validation for deploying dry-EEG sensors in adaptive educational technologies and contributes t...

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#### The effect of perceived auditory feedback on speech Brain-**Computer Interface decoding performance**







BRAIN COMPUTER INTERFACE

Summary: OBJECTIVE: Brain-Computer Interfaces (BCI) provide alternative means of communication for individuals with severe motor impairment. Implantable speech BCIs have shown great potential, particularly in individuals who could still produce some speechrelated movements and/or sounds. As perception of au...

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#### The influence of different visual eccentricity on SSVEPs elicited by ultra-low frequency visual stimulation in the lower peripheral visual field

Xiaogang 1 70
Chen min words

BRAIN COMPUTER INTERFACE

Summary: Steady-state visual evoked potential (SSVEP)-based brain-computer interfaces (BCIs) have been widely explored due to their high information transfer rate (ITR) and minimal training requirements. Traditional SSVEP-based BCIs typically use low- and medium-frequency visual stimuli from the central visu...

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#### Towards neuroadaptive chatbots: a feasibility study



1 73 min words





BRAIN COMPUTER INTERFACE

Summary: INTRODUCTION: Large-language models (LLMs) are transforming most industries today and are set to become a cornerstone of the human digital experience. While integrating explicit human feedback into the training and development of LLM-based chatbots has been integral to the progress we see nowadays, ...

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#### A Novel Binocular-Encoded SSVEP Framework for Efficient **VR-Based Brain-Computer Interface**







BRAIN COMPUTER INTERFACE

Summary: This paper presents a novel binocular-encoded SSVEP (beSSVEP) method, leveraging binocular vision in virtual reality (VR) to enhance brain-computer interface (BCI) applications. We introduce the Binocular Periodically Repeated Component Analysis (bPRCA) algorithm, designed to address the unique char...

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#### A novel channel reduction concept to enhance the classification of motor imagery tasks in brain-computer interface systems



Hua
Wang

Wang

Wang

Wang

Words

Words



Summary: Electroencephalogram (EEG) signals play a critical role in advancing braincomputer interface (BCI) systems, particularly for detecting motor imagery (MI) movements. However, analysing large volume of EEG datasets faces some challenges due to redundant information, and performance degradation. Irrel...

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#### Comparison of multidomain assessment outcomes between older and middle-aged adults following concussion.







NEUROPSYCHOLOGY

Summary: Objective: This article's objective was to compare demographic/medical history and multidomain clinical assessment outcomes between older and middle-aged adults following concussion. Method: Seventy-six patients aged 50-80 years within 12 months of a concussion from a specialty clinic between Octobe...



http://doi.org/10.1037/neu0001032

#### Neural correlates of stigma: A systematic review.

1 2025-09-15 min 261 words

NEUROPSYCHOLOGY

Summary: Objective: Understanding neural mechanisms underlying the experience and enactment of stigma is needed to address the public health challenge posed by both experienced and enacted stigma. In this systematic review, we synthesized the literature on neural correlates of stigma from the perspective of ...

http://doi.org/10.1037/neu0001037

#### Back to the future in <em>Neuropsychology</em>.



NEUROPSYCHOLOGY

Summary: The journal continues to be a leading journal in the field but cannot rest on its laurels; concrete actions will be needed to increase the quantity and quality of submissions. To accomplish this, <em>Neuropsychology</em> needs to build on specific areas of strength. Accordingly, a revised statement ...

http://doi.org/10.1037/neu0001044

## Psychometric properties of the Chinese version of Nightmare Distress Questionnaire in adolescents with psychiatric disorders.



**Summary:** Nightmare Distress Questionnaire (NDQ) is commonly used to assess nightmare distress. The psychometric properties of the Chinese version of NDQ (NDQ-CV) have been shown to be satisfactory in the general population of Chinese adolescents. This study aims to evaluate the psychometric properties of NDQ...

**S** Read full article:

http://doi.org/10.1037/drm0000297

#### Assessing attitudes toward dream incubation: A new scale.



**Summary:** This study aims to develop the Dream Incubation Attitude Scale for assessing attitudes toward dream incubation. The Dream Incubation Attitude Scale underwent psychometric testing based on responses drawn from 109 Hong Kong participants. This resulted in a three-factor structure comprising self-effic...

**Read full article:** 

http://doi.org/10.1037/drm0000306

### Flying dreams stimulated by targeted movement and sound: Art and science in the dream hotel.

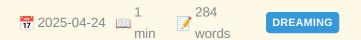


**Summary:** We present Dream Hotel Room 1, a sculptural artwork by Carsten Höller (with Adam Haar Horowitz) that uses dream engineering techniques to induce flying dreams. Dreams of flying are an exceptional experience; even years after their occurrence, people report these remain some of the most meaningful an...



http://doi.org/10.1037/drm0000308

#### Nightmare disorder in women.



**Summary:** The aim of this study is to identify the short-term proximate triggers and effects of nightmares in adult women. In total, 85 females and 29 males participated in a 2-week intensive longitudinal assessment of mood, stress, social conflict, and sleep architecture measures. Sleep architecture was moni...



http://doi.org/10.1037/drm0000309

### Impact of childhood trauma on dreams in adulthood: An Argentine survey.



**Summary:** The aim of this study was to assess whether participants who present more frequently with nightmares or distressing dreams have had traumatic experiences in their childhood and their relationship with current personality traits. Three instruments were administered to a sample of 446 adults from the ...



http://doi.org/10.1037/drm0000307

#### **Monthly Updates [July]**



**Summary:** <div class="info custom-block">INFO These update threads only contains major updates. If you're interested in seeing all minor changes you can follow our <a href="https://github.com/fmhy/FMHYedit/commits/main" rel="noreferrer" target="\_blank">Commits Page</a> on ...



https://fmhy.net/posts/july-2025

#### **Monthly Updates [August]**



**Summary:** <div class="info custom-block">INFO These update threads only contains major updates. If you're interested in seeing all minor changes you can follow our <a href="https://github.com/fmhy/FMHYedit/commits/main" rel="noreferrer" target=" blank">Commits Page</a> on ...



https://fmhy.net/posts/aug-2025

#### **Monthly Updates [Sept]**



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https://fmhy.net/posts/sept-2025









FMHY

**Summary:** <h3 id="the-eu-still-wants-to-scan-your-private-messages-and-photos" tabindex="-1">The EU (still) wants to scan your private messages and photos. <a class="header-anchor" href="#the-eu-still-wants-to-scan-your-private-messages-andphotos"></a></h3> The &quot;Chat Control&quot; proposal would mand...



Read full article:

https://fmhy.net/posts/FCC

#### Why We're Here



1 346 min words





FMHY

**Summary:** People always want to know what the point of life is. Why are they on earth? What are we doing here? Whats our purpose? <em>Whats the point?</em> For most of my life, I didn't really have any answer, but as I got older, I realized, things weren't about me. I took a step back, and recognize...



https://fmhy.net/posts/WWH

#### State of Django 2025 from JetBrains



REDDIT PYTHON

Summary: <!-- SC OFF --><div class="md">A new set of survey results just dropped, this time in the form of Django-specific data gathered by JetBrains: href="https://lp.jetbrains.com/django-developer-survey-2025/">Django Developers Survey 2025 Results</a> Some key takeaways: H...

https://www.reddit.com/r/Python/comments/1ol145x/state\_of\_django\_2025\_from\_jetbrains/

#### Introducing architecture variants





HACKER NEWS

Summary: <a href="https://news.ycombinator.com/item?id=45758392">Comments</a>

https://discourse.ubuntu.com/t/introducing-architecture-variants-amd64v3-now-available-inubuntu-25-10/71312







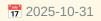
HACKER NEWS

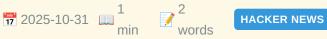
Summary: <a href="https://news.ycombinator.com/item?id=45774640">Comments</a>



https://www.thebignewsletter.com/p/addiction-markets-abolish-corporate

#### **Show HN: Strange Attractors**





Summary: <a href="https://news.ycombinator.com/item?id=45777810">Comments</a>

https://blog.shashanktomar.com/posts/strange-attractors

#### Al scrapers request commented scripts

ColinWright 7 2025-10-31 min 13 words HACKER NEWS

**Summary:** Article URL: <a href="https://cryptography.dog/blog/AI-scrapers-request-commented-scripts/">https://cryptography.dog/blog/AI-scrapers-request-commented-scripts/</a> Comments URL: <a href="https://news.ycombinator.com/item?id=45773347">https://news.ycombinator.com/item?id=45773347</a> <...

https://cryptography.dog/blog/Al-scrapers-request-commented-scripts/

#### **Addiction Markets**

1 toomuchtodo 7 2025-10-31 min words

**Summary:** Article URL: <a href="https://www.thebignewsletter.com/p/addiction-markets-abolish-corporate">https://www.thebignewsletter.com/p/addiction-markets-abolish-corporate</a> Comments URL: <a href="https://news.ycombinator.com/item?id=45774640</a></...</p>

https://www.thebignewsletter.com/p/addiction-markets-abolish-corporate

#### **Show HN: Strange Attractors**

shashanktomar 7 2025-10-31 min 156 words

**Summary:** I went down the rabbit hole on a side project and ended up building this: Strange Attractors(<a href="https://blog.shashanktomar.com/posts/strange-attractors" rel="nofollow">https://blog.shashanktomar.com/posts/strange-attractors</a>). It's built with three.js.Working on it reminded me of the ...

https://blog.shashanktomar.com/posts/strange-attractors

### A narrative exploration of oxytocin and anxiety in autism spectrum disorder

1 24 BRAIN RESEARCH words

**Summary:** Publication date: 1 December 2025<b>Source:</b> Brain Research, Volume 1868Author(s): Shreya Koche, Mayuri Gajghate, Madhura Dixit Vinchurney, Mayur Kale, Brijesh Taksande, Milind Umekar, Rashmi Trivedi

https://www.sciencedirect.com/science/article/pii/S0006899325005542?dgcid=rss\_sd\_all

### Parkinson's disease and the gut-brain connection: unveiling pathways, mechanisms and promising therapies

1 min

BRAIN RESEARCH

**Summary:** Publication date: 1 December 2025<b>Source:</b> Brain Research, Volume 1868Author(s): Suhas Hajare, Yogesh A. Kulkarni

https://www.sciencedirect.com/science/article/pii/S0006899325005384?dgcid=rss\_sd\_all

# K<sup>+</sup> channels as key modulators of <em>in vitro</em> high-frequency oscillations associated with interictal epileptiform activity





NEUROSCIENCE JOURNAL

**Summary:** Publication date: 28 November 2025<b>Source:</b><br/>Neuroscience, Volume 589Author(s): Konstantinos Kalogeropoulos, Caterina<br/>Psarropoulou



https://www.sciencedirect.com/science/article/pii/S0306452225010164?dgcid=rss\_sd\_all

### Two-hit perinatal injuries cause gut microbial dysbiosis in offspring

1 min

NEUROSCIENCE JOURNAL

**Summary:** Publication date: 28 November 2025<b>Source:</b><br/>Neuroscience, Volume 589Author(s): Gilbert Aaron Lee, Yu-Wei Chang, Yu-Chen<br/>S.H. Yang, Sung-Hui Tseng, Ching-Chiung Wang, Chia-Jung Lee, Jung-Su Chang, Shan-<br/>Hong Wu, Mu-Ming Chien, Kang-Wei Chang, Hsi Chang

https://www.sciencedirect.com/science/article/pii/S0306452225010255?dgcid=rss\_sd\_all

### Neural responses prior to licking onset in the striatal matrix compartment in mice

1 min



NEUROSCIENCE JOURNAL

**Summary:** Publication date: 28 November 2025<b>Source:</b><br/>Neuroscience, Volume 589Author(s): Yuta Ishimaru, Tomohiko Yoshizawa, Taishi<br/>Kimoto, Tadashi Inui, Yasutaka Yawaka, Makoto Funahashi

**⊗** Read full article:

https://www.sciencedirect.com/science/article/pii/S0306452225010243?dqcid=rss sd all

#### Standardised and systematic sampling of public engagement in brain health - Slovenian example

NEUROSCIENCE JOURNAL

Summary: Publication date: 28 November 2025<b>Source:</b> Neuroscience, Volume 589Author(s): I. Muc, L. Blinc, G. Vidmar, S. Kurdija, T. Vovk, M Bresjanac

https://www.sciencedirect.com/science/article/pii/S0306452225010073?dgcid=rss sd all

#### **Erratum to "Neurotropism of alphaherpesviruses is most** prominent in the mesiotemporal, piriform and prefrontal cortices in mice". [Neuroscience 584 (2025) 367-381]



NEUROSCIENCE JOURNAL

Summary: Publication date: 28 November 2025<b>Source:</b> Neuroscience, Volume 589Author(s): Viktoria Korff, Issam El-Debs, Sonja Bröer, Barbara G. Klupp, Jens P. Teifke, Thomas C. Mettenleiter, Julia Sehl-Ewert

https://www.sciencedirect.com/science/article/pii/S0306452225010292?dgcid=rss sd all

### Spontaneous thought orientation tracked by fMRI networks and EEG alpha power dynamics

Hampejs, T., Tomecek, D., Jiricek, S., Kondelka, V., Jajcay, L., Mantini, D., Hlinka, J.

1 min 157 words BIORXIV NEUROSCIENCE

**Summary:** Understanding how spontaneous, rather than experimentally induced, thoughts relate to brain activity remains a major challenge. We combined simultaneous fMRI and EEG recordings with Descriptive Experience Sampling (DES) to link momentary, naturally occurring experiences to their neural signatures du...

**⊗** Read full article:

https://www.biorxiv.org/content/10.1101/2025.10.31.684884v1?rss=1

### Neural heterogeneity shapes the temporal structure of human working memory

Kussovska, D., Kim, R., Rungratsameetaweemana,

1 167 min words

**BIORXIV NEUROSCIENCE** 

**Summary:** Working memory (WM) enables temporary retention of information essential for flexible cognition. Although persistent population activity has long been regarded as a principal mechanism of memory maintenance, continuous single-neuron firing is energetically demanding and difficult to reconcile with t...

https://www.biorxiv.org/content/10.1101/2025.10.31.684900v1?rss=1

#### **Neuronal SET1/COMPASS-mediated epigenetic regulation of** de novo transcription drives accelerated forgetting with age

Sengupta, T., Kaletsky, R., Morillo, K., Zhou, S., Brown, A. K., Novak, K., Weng, Y., Murphy,

1 2025-11-01 min 224 BIORXIV NEUROSCIENCE

Summary: Forgetting is a critical component of memory, but its molecular regulation particularly with age - is not well understood. Epigenetic modifications are a candidate for this regulation and may further drive age-related behavioral decline, as they are dramatically altered in the aging brain. We foun...

https://www.biorxiv.org/content/10.1101/2025.10.31.685883v1?rss=1

#### ZMYND11 Restrains KMT2A to Enable a Neuronal **Developmental Program**

Greben, A. W., Wu, X. S., Robb, J. E., Vogel, I. R., Traunmüller, L., Krüttner, S., Fulton, K. A., Darcera, M. V. L., Griffith, E. C., Greenberg, M. E.

1 2025-10-31 min 207 BIORXIV NEUROSCIENCE





Summary: Mutations in the chromatin reader and tumor suppressor ZMYND11 are the cause of ZMYND11-related syndromic intellectual disability (ZRSID), a disorder characterized by symptoms such as language and motor delay, behavioral disruptions, and seizures. We find that neuronal deletion of ZMYND11 in mice ca...

**⊗** Read full article:

https://www.biorxiv.org/content/10.1101/2025.10.31.685692v1?rss=1

### Spatial development of brain networks during the first six postnatal months



**Read full article:** 

https://www.nature.com/articles/s42003-025-08913-z

#### Politicians pose left but the voter is always right



**⊗** Read full article:

https://www.nature.com/articles/s41598-025-22529-7

### A coordinated and enhanced brain network supports the persistence of long-term cocaine memory



https://www.nature.com/articles/s41398-025-03667-y

#### The impact of CSF-filled cavities on scalp EEG and its **implications**

Maria Carla
Piastra

1
2024-06-14

min

64

words

OOSTENVELD ROBERT

Summary: Previous studies have found electroencephalogram (EEG) amplitude and scalp topography differences between neurotypical and neurological/neurosurgical groups, being interpreted at the cognitive level. However, these comparisons are invariably accompanied by anatomical changes. Critical to EEG are the...

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#### Motion-BIDS: an extension to the brain imaging data structure to organize motion data for reproducible research



1 72 min words

OOSTENVELD ROBERT

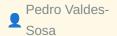
Summary: We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalitie...

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#### One hundred years of EEG for brain and behaviour research







OOSTENVELD ROBERT

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/39174725/?

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#### Freezing of gait in Parkinson's disease is related to imbalanced stopping-related cortical activity









OOSTENVELD ROBERT

Summary: Freezing of gait, characterized by involuntary interruptions of walking, is a debilitating motor symptom of Parkinson's disease that restricts people's autonomy. Previous brain imaging studies investigating the mechanisms underlying freezing were restricted to scan people in supine positions and yie...

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#### The past, present, and future of the brain imaging data structure (BIDS)

Krzysztof J
Gorgolewski

Sorgolewski

Gorgolewski

Sorgolewski

Sorgolewski

Sorgolewski

Sorgolewski

Sorgolewski

Sorgolewski

Sorgolewski

Summary: The Brain Imaging Data Structure (BIDS) is a community-driven standard for the organization of data and metadata from a growing range of neuroscience modalities. This paper is meant as a history of how the standard has developed and grown over time. We outline the principles behind the project, the ...

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#### **Human cortical high-gamma power scales with movement** rate in healthy participants and stroke survivors

1 65 min words

OOSTENVELD ROBERT

Summary: Motor cortical high-gamma oscillations (60-90 Hz) occur at movement onset and are spatially focused over the contralateral primary motor cortex. Although high-gamma oscillations are widely recognized for their significance in human motor control, their precise function on a cortical level remains el...

#### 

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## NIRS-BIDS: Brain Imaging Data Structure Extended to Near-**Infrared Spectroscopy**



OOSTENVELD ROBERT

Summary: Functional near-infrared spectroscopy (fNIRS) is an increasingly popular neuroimaging technique that measures cortical hemodynamic activity in a non-invasive and portable fashion. Although the fNIRS community has been successful in disseminating open-source processing tools and a standard file forma...

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## Pseudonymisation of neuroimages and data protection: <em>Increasing access to data while retaining scientific utility</em>



Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld robert

Oostenveld robert

**Summary:** For a number of years, facial features removal techniques such as 'defacing', 'skull stripping' and 'face masking/blurring', were considered adequate privacy preserving tools to openly share brain images. Scientifically, these measures were already a compromise between data protection requirements a...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40568426/?

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## Cycling on the Freeway: The perilous state of open-source neuroscience software

Tim M
Tierney

Summary: Most scientists need software to perform their research (Barker et al., 2020; Carver et al., 2022; Hettrick, 2014; Hettrick et al., 2014; Switters & Osimo, 2019), and neuroscientists are no exception. Whether we work with reaction times, electrophysiological signals, or magnetic resonance imaging data, ...

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### Optimal configuration of on-scalp OPMs with fixed channel counts



1 69 min words

OOSTENVELD ROBERT

Summary: Recent technological developments have brought optically pumped magnetometers (OPMs) within reach of the larger neuroscientific community. The current state-of-the-art consists of whole-head systems that measure the magnetic field at >100 locations. OPM sensors can be constructed to measure the fiel...

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## Six-Month Interim Analyses of the Efficacy of Repeated Low-**Level Red-Light Therapy Combined with Orthokeratology for Myopia Control in Spanish Children**

Fernando J Fernández-

1 28 min words

LOW VISION

Summary: CONCLUSIONS: The six-month interim analysis indicates that combining RLRL therapy with OK effectively controls myopia progression in Spanish children, with no severe adverse effects. Long-term follow-up is ongoing.

#### 

https://pubmed.ncbi.nlm.nih.gov/41165747/?

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## Predictors of posttraumatic stress disorder among displaced families in Lebanon: A cross-sectional study



1 72 min words



LOW VISION

Summary: This study aimed to assess the prevalence of posttraumatic stress disorder (PTSD) among Lebanese individuals internally displaced by the recent conflict and to identify key predictors of PTSD. The findings are intended to guide targeted policy and advocacy strategies aimed at improving mental health...

#### 

https://pubmed.ncbi.nlm.nih.gov/41166360/?

## Incidental ocular surface squamous neoplasia in pterygia: a systematic review and meta-analysis

Clara C Chan

1 47 min words

LOW VISION

**Summary:** CONCLUSIONS: This meta-analysis, based on low- to very low-certainty evidence, identified a 1.32% pooled prevalence of incidental OSSN in clinically diagnosed pterygia, highlighting the potential influence of UV exposure and equatorial proximity. The overlap in demographic and lesion characteristics...

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## The Hidden Benefits of Noise: Low-Frequency tRNS and **Dynamic Visual Noise Enhance Visual Processing**



1 70 min words





**LOW VISION** 

Summary: Sensory and perceptual processing is inherently shaped by both internal and external noise sources. While noise is typically seen as disruptive, it can, under certain conditions, enhance the detection of weak sensory signals-a phenomenon known as stochastic resonance (SR). Research on SR has primari...

#### 

https://pubmed.ncbi.nlm.nih.gov/41167815/?

### **Headaches due to Low and High Intracranial Pressure**

1 63 words

LOW VISION

Summary: This article provides a comprehensive overview of high-pressure and lowpressure headaches, focusing on their pathophysiology, clinical presentation, diagnosis, and management. High-pressure headaches, often linked to idiopathic intracranial hypertension, primarily affect young women and can lead to...

#### 

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## **Synergistic Charge Generation and Collection Enabled by Incorporation of Crystalline Polymer for Ultrafast-Response Dual-Band Perovskite/Organic Photodetectors**



2025-10-31 min 66 words

**LOW VISION** 

Summary: Dual-band photodetectors (PDs) capable of selectively responding to both visible and near-infrared (NIR) light are essential for applications in optical communication, medical diagnostics, and artificial vision systems. In this work, we report a highperformance visible/NIR dual-band PD based on a v...

#### 

https://pubmed.ncbi.nlm.nih.gov/41169105/?

## Diabetic retinopathy screening in Australian general practice: persistently low uptake despite national guidelines and equity initiatives



**Summary:** CONCLUSION: Despite national guidelines, GP-led DR screening uptake remains low, with substantial geographic, demographic and temporal disparities in Australian general practice settings. Addressing systemic barriers, strengthening GP-led screening, and implementing targeted interventions are crucia...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41169341/?

## **Rare Ocular Complication After Prone Position Surgery: Bilateral Subconjunctival Hemorrhage Following Endoscopic Lumbar Discectomy**











Summary: Subconjunctival hemorrhage (SCH) is a rare complication in spinal surgery and is even more uncommon in endoscopic procedures, which are typically of short duration. We report the case of a 32-year-old male who developed bilateral SCH after an uneventful L4-L5 lumbar endoscopic discectomy performed u...

#### 

https://pubmed.ncbi.nlm.nih.gov/41170305/?

## A Rare Co-Occurrence of Gastric Heterotopia and Autonomic **Nervous System Dysfunction: An Attempt to Explain If There** Is a Need to Explore Possible Syndromic Link



1 62 Low Vision min words



Summary: Gastric heterotopia (GHT) is the presence of gastric mucosa outside the stomach, including in the rectum. A 59-year-old man presented with rectal bleeding and altered bowel habits, along with long-standing low blood pressure and erectile dysfunction. Investigations confirmed rectal GHT, initially ma...

#### **⊗** Read full article:

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## Ocular Syphilis in an Immunocompetent Patient: Through the Lens









Summary: Ocular manifestations of syphilis can occur at any stage of the disease and present with a wide range of clinical features. If left untreated, they carry a high risk of permanent vision loss. Although syphilis mainly affects individuals with human immunodeficiency virus (HIV) positive and other immu...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41170350/?

## The taste of trigeminal sensations: relation between taste, lingual tactile acuity, and spicy perception in patients with taste dysfunction

Thomas
Hummel

Thomas

Tactile Acuity

Thomas

Summary: In the oral cavity, oral stereognosis and chemesthesis refer to the abilities to recognize shapes and detect noxious substances, respectively, through various receptors distributed on the tongue. The absence of standardized methods to assess oral somatosensory perception has led to a lack of consens...

#### **⊗** Read full article:

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## **Measuring the Distribution of Tactile Acuity at the Index Finger and Thumb Fingertips**

Hiroyuki

1 75
min words

TACTILE ACUITY

Summary: In our day-to-day activities, we utilize not only the pads of our fingers but also the sides and hemispherical tips when manipulating objects. For teleoperation systems to replicate these real-life interactions, tactile sensation must be presented and distributed across the entire fingertip. Thus, u...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40526544/?

## Optimizing Vibrotactile Feedback for Sensory Substitution in the Thigh: Spatial Acuity and Frequency Characteristics

Leah R

Bent

1
69
words



TACTILE ACUITY

**Summary:** Amputation of a lower limb not only affects mobility but also interferes with sensory feedback, leading to an elevated risk of falls among individuals living with amputation. Sensory substitution, achieved through tactile displays embedded in transfemoral prosthetic sockets, presents a promising non...

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https://pubmed.ncbi.nlm.nih.gov/40577301/?

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## Directional vibro-tactile hazard warnings for drivers with vision impairments

Alex R

Bowers

1

80

min

words





TACTILE ACUITY

Summary: Vision impairment may delay responses to hazards when driving. In a proof-ofconcept driving simulator study, we evaluated a hazard warning device designed for vision impaired drivers. Three groups participated: 11 persons with central vision loss (CVL; median age 60 years), 12 with homonymous field...

#### 

https://pubmed.ncbi.nlm.nih.gov/40601880/?

## Sensitivity and vagal reactivity to C-tactile-mediated affective touch in mild cognitive impairment due to Alzheimer's disease







Summary: BackgroundC-tactile (CT) afferents preferentially activate in response to slow caress-like touch, evoking a diffuse pleasant sensation and promoting autonomic regulation. According to Braak's classic model, the neurodegenerative process in Alzheimer's disease (AD) only affects somatosensory cortices...

#### **⊗** Read full article:

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## Differences in tactile grid localization accuracy between people with back pain compared to individuals without pain









**Summary:** OBJECTIVES: The study aimed to investigate the grid localization test (GLT) between patients with lower back pain and those without back pain.

#### 

https://pubmed.ncbi.nlm.nih.gov/40850311/?

## **Eye Drop Instillation Success and Hand Function in Adults** with Glaucoma: A Pilot Study

Paula Anne Newman-Casev

1 74 TACTILE ACUITY words

Summary: CONCLUSIONS: Despite hand function deficits, in this exploratory pilot study, adults with glaucoma demonstrated eye drop instillation success comparable to those without glaucoma, though with higher rates of bottle tip contact with the eye, skin, or eyelashes, suggesting an increased risk of potenti...

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## Functional evidence for early origin of tactile acuity in the vertebrate somatosensory system

Sviatoslav N Bagriantsev

1 2025-09-13 min 58 words

TACTILE ACUITY

Summary: Mammals and reptiles possess a sophisticated somatosensory system for precise tactile discrimination via mechanosensory end-organs, such as Meissner and Pacinian corpuscles and others. These structures detect sustained pressure, velocity, and vibrations, thereby facilitating nuanced environmental in...

#### 

https://pubmed.ncbi.nlm.nih.gov/40945511/?

## The coarse mental map of the breast is anchored on the nipple

Charles M

Greenspon

1

86

min

words

TACTILE ACUITY

Summary: Touch plays a key role in our perception of our body and shapes our interactions with the world, from the objects we manipulate to the people we touch. While the tactile sensibility of the hand has been extensively characterized, much less is known about touch on other parts of the body. Despite the...

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## **Haptic Feedback Systems for Lower-Limb Prosthetic** Applications: A Review of System Design, User Experience, and Clinical Insights









TACTILE ACUITY

Summary: Systems presenting haptic information have emerged as an important technological advance in assisting individuals with sensory impairments or amputations, where the aim is to enhance sensory perception or provide sensory substitution through tactile feedback. These systems provide information on lim...

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https://pubmed.ncbi.nlm.nih.gov/41007234/?

## A Biomimetic Fiber-Entangled Permeable Electronic Skin for Strain-Insensitive and High-Resolution Tactile Sensing



1 57 min words

Summary: Electronic skins (e-skins) incorporating island architectures represent a promising platform for strain-insensitive tactile sensing by mechanically decoupling sensing units from deformations. However, conventional island designs encounter stress concentration issues caused by inherent modulus mismat...

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## **High-Density Tactile Sensor Array for Sub-Millimeter Texture** Recognition



Min 1 64
Zhang min words

BRAILLE

Summary: High-density tactile sensor arrays that replicate human touch could restore texture perception in paralyzed individuals. However, conventional tactile sensor arrays face inherent trade-offs between spatial resolution, sensitivity, and crosstalk suppression due to microstructure size limitations and ...

#### 

https://pubmed.ncbi.nlm.nih.gov/40871941/?

## A Diachronic Investigation of the Change in Form and Formational-Semantic Systematicity of the Chinese Sign Language Lexicon



**Summary:** It has been argued in previous research that several competing pressures guide the directions of language evolution (economy vs. redundancy; arbitrariness vs. systematicity). For sign languages, however, the effects of competing pressures on their change of lexical systems remain largely unclear. In...

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## Wireless Electrotactile System with Hydrogel-Based Electrodes for Conformal Tactile Interaction



**Summary:** A wireless epidermal electrotactile interface is demonstrated through integration of skin-conformal electrodes and flexible circuitry, addressing existing limitations in haptic technology caused by mechanical mismatch and system-level integration challenges. This electrotactile system achieves low s...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40891563/?

## Beyond access: rethinking assistive technology for individuals with visual impairments in Türkiye





Summary: CONCLUSION: Despite demonstrating adaptability, individuals with VI in Türkiye face significant structural barriers to equitable AT access. Informal learning limited public support, and a lack of locally adapted tools contribute to digital exclusion. A rightsbased approach-emphasizing inclusive fun...

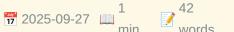
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## High prevalence of bacterial STI, anal HPV, cytological abnormalities and anal lesions among MSM in Togo, 2021: a baseline analysis of the ANRS I MIE 12,400/DepIST-H cohort









Summary: CONCLUSIONS: These findings emphasize the high prevalence of STIs among MSM and confirm the unusual distribution of HPV types in West Africa, with HPV35 being highly prevalent. A national strategy regarding STI screening and HPV vaccination in this key population is needed.

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41013315/?

## Development and Assessment of a Novel Audiosensory Performance Method for Improving the Oral Health of Visually Impaired Children



**Summary:** This study evaluated the effectiveness of an audiosensory performance method in enhancing oral health knowledge and status among visually impaired children aged 6-12 years in the National Capital Region (NCR), Delhi. An interventional study design was used, involving 251 participants equally divided...

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https://pubmed.ncbi.nlm.nih.gov/41041413/?

## **Examining the ability of the interRAI communication** collaborative action plan to identify individuals with sensory challenges: A retrospective cohort study









Summary: CONCLUSIONS: The communication CAP was robust in flagging individuals with sensory impairments as these individuals are more likely to fall into the triggered to facilitate improvement group. The three case studies highlight the importance of assessing all aspects of communication (e.g., cognitive, ...

#### 

https://pubmed.ncbi.nlm.nih.gov/41127342/?

## **Analysis of Stability and Functionality of Coil and** Piezoelectric Braille Modules Under Varying Temperature Conditions







Summary: In this study, the performance and reliability of two different types of Braille modules, i.e., coil and piezoelectric, under varying temperature conditions were compared. The coil module works on the principle of electromagnetic forces generated by coils, while the piezoelectric module is based on ...

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## Challenges faced by visually impaired individuals from the perspective of faculty members: a phenomenological study









Summary: Visually impaired students in higher education face significant academic, social, and psychological barriers that are often overlooked by faculty. This phenomenological study explored these challenges at Hail University, Saudi Arabia, by purposively sampling six faculty members from the Colleges of ...

#### Read full article:

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## Non-invasive brain stimulation combined with three rehabilitation approaches for cognitive and emotional well-being in Parkinson's patients



**Summary:** CONCLUSION: This study demonstrates that non-invasive brain stimulation combined with cognitive rehabilitation (CR) is the most effective approach for improving cognitive function in Parkinson's patients, while combined motor-cognitive rehabilitation (MCR) shows particular efficacy for emotional wel...

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## Precision Neuromodulation for Diabetes-Associated **Cognitive Decline: a Transcranial Electrical Stimulation Approach**







Summary: CONCLUSION: These findings indicate that tDCS presents a promising, noninvasive therapeutic approach. It demonstrates potential for enhancing cognitive function in patients with DACD and for facilitating improved long-term glycemic control. This highlights the role of brain neuromodulation as a com...

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## The Hidden Benefits of Noise: Low-Frequency tRNS and **Dynamic Visual Noise Enhance Visual Processing**









TDCS TACS TRNS

Summary: Sensory and perceptual processing is inherently shaped by both internal and external noise sources. While noise is typically seen as disruptive, it can, under certain conditions, enhance the detection of weak sensory signals-a phenomenon known as stochastic resonance (SR). Research on SR has primari...

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## A Comprehensive Review of Trigeminal Autonomic Cephalalgias







TDCS TACS TRNS

**Summary:** Trigeminal autonomic cephalalgias (TACs) are a distinct group of primary headache disorders characterized by unilateral pain and autonomic symptoms such as tearing, nasal congestion, and ptosis. This article provides an in-depth review of the different TAC subtypes, including cluster headache, short...

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## Effects on nonverbal numerical acuity performance after a single-session transient random noise stimulation over the intraparietal sulcus or dorsolateral prefrontal cortex







### Read full article:

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## Post-discharge use of opioids, psychostimulants, and treatment medications following residential opioid discontinuation with NET Device™ monotherapy







TDCS TACS TRNS

Summary: CONCLUSIONS: The randomized groups did not differ on outcomes. However, participants who self-administered active NET Device stimulation >24 hours reported significantly fewer post-discharge days of opioid or psychostimulant use than those who self-administered active <24 hours or sham, but these fi...

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## Anodal transcranial direct current stimulation does not alter GABA concentration or functional connectivity in the normal visual cortex







TDCS TACS TRNS

Summary: INTRODUCTION: Anodal direct current stimulation (a-tDCS) of the visual cortex is a potential rehabilitation tool for vision disorders such as amblyopia and macular degeneration. However, the underlying neural mechanisms are currently unknown. When applied to the human motor cortex, a-tDCS reduces th...

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https://pubmed.ncbi.nlm.nih.gov/41169746/?

Can exercise therapy combined with transcranial direct current stimulation further improve balance ability in individuals with chronic ankle instability? A systematic review and meta-analysis







TDCS TACS TRNS

Summary: CONCLUSION: tDCS provides therapeutic benefits for dynamic balance only when combined with non-balance exercises. Current evidence is insufficient to demonstrate improvements in static balance with tDCS adjunctive therapy.

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### **Physical Therapy for Addiction**







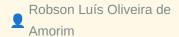
TDCS TACS TRNS

Summary: Physical therapy has the evidence-based scientific knowledge to address a wide range of physical and psychological problems of addiction. Neuromodulation techniques, including transcranial electrical stimulation (tES) methods like transcranial direct current stimulation (tDCS), transcranial alternat...

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https://pubmed.ncbi.nlm.nih.gov/41171569/?

The Effects of Transcranial Direct Current Stimulation Over the Prefrontal Cortex on Reactive Aggressive Behavior in Healthy Volunteers: A Systematic Review and Meta-analysis of Randomized Controlled Trials





TDCS TACS TRNS

**Summary:** CONCLUSION: While the overall analysis did not show a significant effect of anodal on reactive aggressive behavior in healthy volunteers, the results suggest that online tDCS and unilateral tDCS may have a potential impact. Given the heterogeneity of the studies and outcome measures, further researc...

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## A Study on Hemodynamic and Brain Network Characteristics During Upper Limb Movement in Children with Cerebral Hemiplegia Based on fNIRS



**Summary:** Background: Hemiplegic cerebral palsy (HCP) is a motor dysfunction disorder resulting from perinatal developmental brain injury, predominantly impairing upper limb function in children. Nonetheless, there has been insufficient research on the brain activation patterns and inter-brain coordination me...

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## Task-Dependent Neural Activity in the Posterior Parietal **Cortex Is Associated with Better Balance in Adults with Acquired Brain Injury**











Summary: Background/Objectives: There is scarce evidence on the neural underpinnings of balance in people with chronic acquired brain injury (ABI). Thus, the objective was to measure this in adults with ABI during four balance tasks and to examine the relationship between neural activity and balance performa...

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## Medication vs. Movement in ADHD: Interaction Between Medication and Physical Activity on Neurocognitive Functioning



**Summary:** Background/Objectives: Movement during attention-demanding tasks may help compensate for cortical under-arousal in pediatric ADHD patients. However, the influence of medication during movement is unknown. This study assessed the impact of concurrent movement during executive functioning tasks on dor...

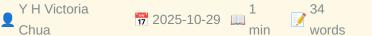
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## A Systematic Review of Inter-Brain Synchrony and Psychological Conditions: Stress, Anxiety, Depression, **Autism and Other Disorders**









Summary: CONCLUSIONS: Collectively, the findings support IBS as a potentially dynamic, condition-sensitive, and contextually modulated neurophysiological indicator of interpersonal functioning, with implications for diagnostics, intervention design, and the advancement of social neuroscience in clinical sett...

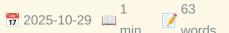
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## **DrSVision: A Machine Learning Tool for Cortical Region-**Specific fNIRS Calibration Based on Cadaveric Head MRI











Summary: Functional Near-Infrared Spectroscopy is (fNIRS) a non-invasive neuroimaging technique that monitors cerebral hemodynamic responses by measuring near-infrared (NIR) light absorption caused by changes in oxygenated and deoxygenated hemoglobin concentrations. While fNIRS has been widely used in cognit...

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## Early Motor Cortex Connectivity and Neuronal Reactivity in **Intracerebral Hemorrhage: A Continuous-Wave Functional Near-Infrared Spectroscopy Study**







Summary: Insights into motor cortex remodeling may enable the development of more effective rehabilitation strategies during the acute phase. We aim to assess the affected and unaffected motor/premotor/somatosensory cortex resting state functional connectivity (RSFC) and reactivity with continuous wave funct...

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## Individual abilities to estimate levels of movement synchrony predict action observation network activation











Summary: Observers' ability to estimate levels of movement synchrony, such as in Olympic diving or rowing, is highly variable and, in part, constrained by personality traits and enjoyment of the movements. Embodiment also appears to play a crucial role, whereby stronger beliefs that one's body can complete p...

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The effects of combining anodal transcranial direct current stimulation with robot-assisted gait training on lower limb motor function and the motor cortex regulation of stroke patients



**Summary:** CONCLUSIONS: The combination of anodal tDCS and RAGT can enhance lower limb motor function in stroke patients, while also modulating the connectivity within the motor network. Additionally, the elevation of functional connectivity between the bilateral cerebral hemispheres, quantifiable through fNIR...

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## The Impact of Sports Experience on Map Symbol **Representation in Orienteering Athletes and Its Neural Correlates: Evidence from Eye-Tracking and fNIRS**











Summary: CONCLUSION: High-level orienteering athletes exhibit domain-specific cognitive advantages in map symbol representation tasks. Long-term orienteering map reading training facilitates synergistic interactions between visual and neural information processing.

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# The Impact of Teachers' Autonomy Support on Students' Academic Performance from the Perspective of Hyperscanning: the Mediating Role of Autonomy Need Satisfaction



**Summary:** Previous research on self-determination theory has primarily focused on analyzing experiences and behaviors, without fully elucidating the neural basis of how teacher autonomy support influences students' academic performance. In this study, four individuals were selected to act as teachers, while 4...

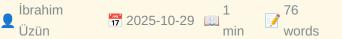
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## **Fatal Isolated Right Ventricular Rupture Without External Chest Injury in a Young Driver: Forensic Autopsy Findings** After a One-Sided Vehicle Collision







BRAIN COMPUTER INTERFACE

**Summary:** Traumatic deaths are common, with cardiac trauma affecting 7–12% of patients with thoracic injuries. Blunt cardiac injury (BCI), although rare, is associated with a high mortality rate. This report presents a case of blunt cardiac rupture (BCR) observed at autopsy despite the absence of external che...

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## Comparative analysis across diverse plant species reveals superior antibiofilm efficacy and dose-dependency of root extracts compared to leaf extracts







BRAIN COMPUTER INTERFACE

Summary: Although both root- and leaf-derived plant extracts hold potential as antibiofilm agents, research has predominantly focused on leaf tissues. In this study, we systematically compared the antibiofilm efficacy of 158 root and 248 leaf extracts from 360 plant species across five concentrations (0.1, 0...

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## An Active, Multimodal Neural Interface for Real-Time Monitoring of Cortical Electrical, Thermal, and Optical **Dynamics**







BRAIN COMPUTER INTERFACE

Summary: Chronic neurophysiological monitoring devices facilitate the timely diagnosis and treatment of episodic or recurrent neurological disorders. Compared with passive electrodes, silicon-based active transistors provide intrinsic signal amplification and, when combined with capacitive-coupling measureme...

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## Feasibility of decoding cerebellar movement-related potentials for brain-computer interface applications









BRAIN COMPUTER INTERFACE

Summary: 
In Brain-Computer Interface (BCI) applications, signals are conventionally acquired from the cerebrum, and only a subset of the complex interactions that occur in several areas of the brain are collected. One area that has not been investigated for BCI application is the cerebellum, despite its...

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## Acute Effects of Portable Dry-EEG Neurofeedback on **Classical Chinese Learning: A Three-Arm Repeated-Measures** Study







BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: Portable dry-electrode EEG systems can reliably support realtime neurofeedback to enhance attention and cognitive control in complex language learning contexts. This study provides empirical validation for deploying dry-EEG sensors in adaptive educational technologies and contributes t...

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## The effect of perceived auditory feedback on speech Brain-**Computer Interface decoding performance**







BRAIN COMPUTER INTERFACE

Summary: OBJECTIVE: Brain-Computer Interfaces (BCI) provide alternative means of communication for individuals with severe motor impairment. Implantable speech BCIs have shown great potential, particularly in individuals who could still produce some speechrelated movements and/or sounds. As perception of au...

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## The influence of different visual eccentricity on SSVEPs elicited by ultra-low frequency visual stimulation in the lower peripheral visual field

Xiaogang 1 70
Chen min words

BRAIN COMPUTER INTERFACE

Summary: Steady-state visual evoked potential (SSVEP)-based brain-computer interfaces (BCIs) have been widely explored due to their high information transfer rate (ITR) and minimal training requirements. Traditional SSVEP-based BCIs typically use low- and medium-frequency visual stimuli from the central visu...

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## Towards neuroadaptive chatbots: a feasibility study



1 73 min words





BRAIN COMPUTER INTERFACE

Summary: INTRODUCTION: Large-language models (LLMs) are transforming most industries today and are set to become a cornerstone of the human digital experience. While integrating explicit human feedback into the training and development of LLM-based chatbots has been integral to the progress we see nowadays, ...

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## A Novel Binocular-Encoded SSVEP Framework for Efficient **VR-Based Brain-Computer Interface**







BRAIN COMPUTER INTERFACE

Summary: This paper presents a novel binocular-encoded SSVEP (beSSVEP) method, leveraging binocular vision in virtual reality (VR) to enhance brain-computer interface (BCI) applications. We introduce the Binocular Periodically Repeated Component Analysis (bPRCA) algorithm, designed to address the unique char...

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## A novel channel reduction concept to enhance the classification of motor imagery tasks in brain-computer interface systems



Hua
Wang

Wang

Wang

Wang

Words

Words

Summary: Electroencephalogram (EEG) signals play a critical role in advancing braincomputer interface (BCI) systems, particularly for detecting motor imagery (MI) movements. However, analysing large volume of EEG datasets faces some challenges due to redundant information, and performance degradation. Irrel...

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## The sound of manufactured music: Reviewing the role of artificial stimuli in music cognition research.





**PSYCHOMUSICOLOGY** 

Summary: Having participants listen and react to musical stimuli is one of music cognition's foundational methods. Whereas most researchers have used stimuli adapted from existing musical traditions in such work, others have incorporated artificial stimuli (i.e., stimuli generated specifically for research t...

**Read full article:** 

## Music-evoked nostalgia and charitable giving: A crosscultural study in the United States and Mexico.

1 192 PSYCHOMUSICOLOGY words

**Summary:** Nostalgia, a past-oriented emotion characterized by complex affective responses, is a pervasive and fundamental human experience. Prior research has demonstrated that nostalgia serves various socioemotional functions, such as promoting a sense of belonging, enhancing one's perception of meaning in I...

http://doi.org/10.1037/pmu0000302

# Preferred music listening does not affect cognitive inhibition in young and older adults.

1 2023-10-12 min 227 PSYCHOMUSICOLOGY

**Summary:** Previous literature has found links between music listening and cognitive performance. Specifically, background music may play a role in modulating cognitive inhibition. However, determining what type of background music affects cognitive inhibition throughout the lifespan has not been studied. The ...

**Read full article:** 

## Absolute pitch: A literature review of underlying factors, with special regard to music pedagogy.

1 2023-07-10 min 202 words



PSYCHOMUSICOLOGY

**Summary:** Absolute pitch (AP) is a fairly rare and special phenomenon that has relevance for musicology, psychology, genetics, and neuroscience. AP possessors are able to identify the pitch of an isolated sound or to produce that sound without a reference point. The authors' aim is to review the literature on...

http://doi.org/10.1037/pmu0000298

## Capturing coordination and intentionality in joint musical improvisation.





PSYCHOMUSICOLOGY

**Summary:** Humans collaborate with each other on a wide variety of tasks that are often largely improvised and unscripted. In this study, we investigated the dynamics of coordination in a joint musical improvisation task, what the effect of intentions is on coordination, and how musicians propagate these inten...

Read full article:

# Continuous affect responses to a large diverse set of unfamiliar music: Bayesian time-series and cluster analyses.

252 PSYCHOMUSICOLOGY words

**Summary:** Sixty-nine participants made continuous response judgments of perceived arousal and valence while listening to 30-s extracts of 100 unfamiliar pieces within a novel recommender system. Our purpose was to take advantage of the relatively large number of participants and pieces studied (compared with ...

http://doi.org/10.1037/pmu0000295

## <em>Psychomusicology</em>: A resounding closing cadence.

1 2024-01-22 min 256 PSYCHOMUSICOLOGY

**Summary:** From 2012 to 2023, the American Psychological Association served as publisher of <em>Psychomusicology: Music, Mind, and Brain</em>. Annabel Cohen and Mark Schmuckler were the successive editors-in-chiefs during this time. As the journal is ceasing publication, the two editors reflect on the developm...

Read full article:

#### The impact of unemployment on dream content.

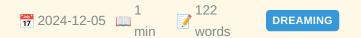


**Summary:** This study examines the relationship between employment status and dream content using a data set of 6,478 dream reports collected from Reddit. We used machine learning to analyze thematic differences between unemployed individuals and a control group. The results revealed that the dreams of unemplo...

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http://doi.org/10.1037/drm0000310

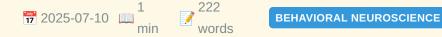
# From falling apart to disturbing dreams: A preliminary examination of self-fragmentation and nightmares.



**Summary:** Previous theory suggested a relationship between fragmentation of the self-structure and nightmares. This article examines this possibility by providing an overview of the theoretical rationale for their relationship and a preliminary empirical study exploring the relationships between a brief measu...

**Read full article:** 

## Anatomical connectivity-based parcellation of the human orbitofrontal cortex.



**Summary:** The orbitofrontal cortex (OFC) is critical for learning and decision making, but its organization in terms of anatomical connections to other brain areas is not well understood in humans. Here we used diffusion magnetic resonance imaging and probabilistic tractography to characterize the cortical an...



http://doi.org/10.1037/bne0000628

#### **Monthly Updates [Oct]**



**Summary:** <div class="info custom-block">INFO These update threads only contains major updates. If you're interested in seeing all minor changes you can follow our <a href="https://github.com/fmhy/FMHYedit/commits/main" rel="noreferrer" target="\_blank">Commits Page</a> on ...



https://fmhy.net/posts/oct-2025

## TDP-43-dependent mis-splicing of <i>KCNQ2</i> triggers intrinsic neuronal hyperexcitability in ALS/FTD







NATURE NEUROSCIENCE

Summary: Nature Neuroscience, Published online: 31 October 2025; <a href="https://"><a href="https://"></a> www.nature.com/articles/s41593-025-02096-w">doi:10.1038/s41593-025-02096-w</a></ p>TDP-43 dysfunction in ALS/FTD causes faulty splicing of the KCNQ2 ion channel, leading to toxic protein buildup, neuron hyperactivity and a po...



https://www.nature.com/articles/s41593-025-02096-w

## Specialized structure of neural population codes in parietal cortex outputs







NATURE NEUROSCIENCE

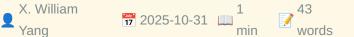
Summary: Nature Neuroscience, Published online: 31 October 2025; <a href="https://"><a href="https://"></a> www.nature.com/articles/s41593-025-02095-x">doi:10.1038/s41593-025-02095-x</a></ p>Cortical neurons comprising an output pathway form a specialized population code that enhances the propagation of information to a downstream ...



https://www.nature.com/articles/s41593-025-02095-x

## Dendritome mapping reveals the spatial organization of striatal neuron morphology







NATURE NEUROSCIENCE

Summary: Nature Neuroscience, Published online: 31 October 2025; <a href="https://"><a href="https://"></a> www.nature.com/articles/s41593-025-02085-z">doi:10.1038/s41593-025-02085-z</a></ p>The authors mapped the dendritic morphology of thousands of striatal D1-type and D2type medium spiny neurons in healthy and Huntington's dise...

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https://www.nature.com/articles/s41593-025-02085-z

## Laser-engineered PRIME fiber for panoramic reconfigurable control of neural activity







NATURE NEUROSCIENCE

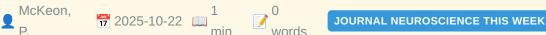
Summary: Nature Neuroscience, Published online: 31 October 2025; <a href="https://"><a href="https://"></a> www.nature.com/articles/s41593-025-02106-x">doi:10.1038/s41593-025-02106-x</a></ p>The authors develop a neural probe with over 1,000 light emitters arranged along its length and circumference, enabling panoramic 3D optical s...



https://www.nature.com/articles/s41593-025-02106-x

#### This Week in The Journal









http://www.jneurosci.org/cgi/content/short/45/43/etwij45432025?rss=1

## Super-resolution microscopy and deep learning methods: what can they bring to neuroscience: from neuron to 3D spine segmentation









FRONTIERS NEUROINFORMATICS

Summary: In recent years, advances in microscopy and the development of novel fluorescent probes have significantly improved neuronal imaging. Many neuropsychiatric disorders are characterized by alterations in neuronal arborization, neuronal loss—as seen in Parkinson's disease—or synaptic loss, as in Alzhei...

#### Read full article:

https://www.frontiersin.org/articles/10.3389/fninf.2025.1630133

# Early heart disease prediction using LV-PSO and Fuzzy Inference Xception Convolution Neural Network on phonocardiogram signals



**Summary:** IntroductionHeart disease is one of the leading causes of mortality worldwide, and early detection is crucial for effective treatment. Phonocardiogram (PCG) signals have shown potential in diagnosing cardiovascular conditions. However, accurate classification of PCG signals remains challenging due t...

#### **⊗** Read full article:

https://www.frontiersin.org/articles/10.3389/fninf.2025.1655003

# Circuit-level modeling of prediction error computation of multi-dimensional features in voluntary actions



**Summary:** IntroductionPredictive processing posits that the brain minimizes discrepancies between internal predictions and sensory inputs, offering a unifying account of perception, cognition, and action. In voluntary actions, it is thought to suppress self-generated sensory outcomes. Although sensory mismatc...

#### 

https://www.frontiersin.org/articles/10.3389/fncom.2025.1551555

## Adaptive-expert-weight-based load balance scheme for dynamic routing of MoE

Peng
Cheng

Peng
min

1

197
words

FRONTIERS NEUROROBOTICS

Summary: Load imbalance is a major performance bottleneck in training mixture-ofexperts (MoE) models, as unbalanced expert loads can lead to routing collapse. Most existing approaches address this issue by introducing auxiliary loss functions to balance the load; however, the hyperparameters within these lo...

https://www.frontiersin.org/articles/10.3389/fnbot.2025.1590994

## The time-varying brain: a comprehensive review of dynamic functional connectivity analysis in EEG and MEG

Stefania Coelli, Martina Corda and Anna Maria Bianchi

1 2025-10-30 min 261 words

JOURNAL NEURAL ENGINEERING

Summary: Objective. This paper presents an in-depth analysis of the recent literature on dynamic functional connectivity (dFC) analysis. This represents a paradigm shift in the analysis of neural data to overcome the inherent limitations of static assumptions about functional brain connectivity. By exploitin...

http://iopscience.iop.org/article/10.1088/1741-2552/ae1258

## The impact of CSF-filled cavities on scalp EEG and its **implications**

Maria Carla
Piastra

1
2024-06-14

min

64

words

OOSTENVELD ROBERT

Summary: Previous studies have found electroencephalogram (EEG) amplitude and scalp topography differences between neurotypical and neurological/neurosurgical groups, being interpreted at the cognitive level. However, these comparisons are invariably accompanied by anatomical changes. Critical to EEG are the...

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## Motion-BIDS: an extension to the brain imaging data structure to organize motion data for reproducible research



1 72 min words

OOSTENVELD ROBERT

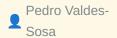
Summary: We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalitie...

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#### One hundred years of EEG for brain and behaviour research







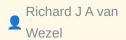
OOSTENVELD ROBERT

#### Read full article:

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## Freezing of gait in Parkinson's disease is related to imbalanced stopping-related cortical activity









Summary: Freezing of gait, characterized by involuntary interruptions of walking, is a debilitating motor symptom of Parkinson's disease that restricts people's autonomy. Previous brain imaging studies investigating the mechanisms underlying freezing were restricted to scan people in supine positions and yie...

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## The past, present, and future of the brain imaging data structure (BIDS)

Krzysztof J
Gorgolewski

Sorgolewski

Gorgolewski

Sorgolewski

Sorgolewski

Sorgolewski

Sorgolewski

Sorgolewski

Sorgolewski

Summary: The Brain Imaging Data Structure (BIDS) is a community-driven standard for the organization of data and metadata from a growing range of neuroscience modalities. This paper is meant as a history of how the standard has developed and grown over time. We outline the principles behind the project, the ...

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## **Human cortical high-gamma power scales with movement** rate in healthy participants and stroke survivors

1 65 min words

OOSTENVELD ROBERT

Summary: Motor cortical high-gamma oscillations (60-90 Hz) occur at movement onset and are spatially focused over the contralateral primary motor cortex. Although high-gamma oscillations are widely recognized for their significance in human motor control, their precise function on a cortical level remains el...

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## NIRS-BIDS: Brain Imaging Data Structure Extended to Near-**Infrared Spectroscopy**

Luca 1 70
Pollonini 2025-01-27 min words

OOSTENVELD ROBERT

Summary: Functional near-infrared spectroscopy (fNIRS) is an increasingly popular neuroimaging technique that measures cortical hemodynamic activity in a non-invasive and portable fashion. Although the fNIRS community has been successful in disseminating open-source processing tools and a standard file forma...

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## Pseudonymisation of neuroimages and data protection: <em>Increasing access to data while retaining scientific utility</em>



Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld robert

Oostenveld robert

**Summary:** For a number of years, facial features removal techniques such as 'defacing', 'skull stripping' and 'face masking/blurring', were considered adequate privacy preserving tools to openly share brain images. Scientifically, these measures were already a compromise between data protection requirements a...

#### Read full article:

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### Cycling on the Freeway: The perilous state of open-source neuroscience software

Tim M
Tierney

Summary: Most scientists need software to perform their research (Barker et al., 2020; Carver et al., 2022; Hettrick, 2014; Hettrick et al., 2014; Switters & Osimo, 2019), and neuroscientists are no exception. Whether we work with reaction times, electrophysiological signals, or magnetic resonance imaging data, ...

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### Optimal configuration of on-scalp OPMs with fixed channel counts



1 69 min words

OOSTENVELD ROBERT

Summary: Recent technological developments have brought optically pumped magnetometers (OPMs) within reach of the larger neuroscientific community. The current state-of-the-art consists of whole-head systems that measure the magnetic field at >100 locations. OPM sensors can be constructed to measure the fiel...

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## Six-Month Interim Analyses of the Efficacy of Repeated Low-**Level Red-Light Therapy Combined with Orthokeratology for** Myopia Control in Spanish Children

Fernando J Fernández-

1 28 min words

LOW VISION

Summary: CONCLUSIONS: The six-month interim analysis indicates that combining RLRL therapy with OK effectively controls myopia progression in Spanish children, with no severe adverse effects. Long-term follow-up is ongoing.

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## Predictors of posttraumatic stress disorder among displaced families in Lebanon: A cross-sectional study



1 72 min words

LOW VISION

Summary: This study aimed to assess the prevalence of posttraumatic stress disorder (PTSD) among Lebanese individuals internally displaced by the recent conflict and to identify key predictors of PTSD. The findings are intended to guide targeted policy and advocacy strategies aimed at improving mental health...

#### 

https://pubmed.ncbi.nlm.nih.gov/41166360/?

## Incidental ocular surface squamous neoplasia in pterygia: a systematic review and meta-analysis

Clara C Chan

1 47 min words

LOW VISION

Summary: CONCLUSIONS: This meta-analysis, based on low- to very low-certainty evidence, identified a 1.32% pooled prevalence of incidental OSSN in clinically diagnosed pterygia, highlighting the potential influence of UV exposure and equatorial proximity. The overlap in demographic and lesion characteristics...

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## The Hidden Benefits of Noise: Low-Frequency tRNS and **Dynamic Visual Noise Enhance Visual Processing**



1 70 min words





**LOW VISION** 

Summary: Sensory and perceptual processing is inherently shaped by both internal and external noise sources. While noise is typically seen as disruptive, it can, under certain conditions, enhance the detection of weak sensory signals-a phenomenon known as stochastic resonance (SR). Research on SR has primari...

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https://pubmed.ncbi.nlm.nih.gov/41167815/?

#### **Headaches due to Low and High Intracranial Pressure**

1 63 words

LOW VISION

Summary: This article provides a comprehensive overview of high-pressure and lowpressure headaches, focusing on their pathophysiology, clinical presentation, diagnosis, and management. High-pressure headaches, often linked to idiopathic intracranial hypertension, primarily affect young women and can lead to...

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## **Synergistic Charge Generation and Collection Enabled by Incorporation of Crystalline Polymer for Ultrafast-Response Dual-Band Perovskite/Organic Photodetectors**



2025-10-31 min 66 words



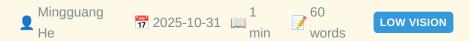
**LOW VISION** 

Summary: Dual-band photodetectors (PDs) capable of selectively responding to both visible and near-infrared (NIR) light are essential for applications in optical communication, medical diagnostics, and artificial vision systems. In this work, we report a highperformance visible/NIR dual-band PD based on a v...

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https://pubmed.ncbi.nlm.nih.gov/41169105/?

# Diabetic retinopathy screening in Australian general practice: persistently low uptake despite national guidelines and equity initiatives



**Summary:** CONCLUSION: Despite national guidelines, GP-led DR screening uptake remains low, with substantial geographic, demographic and temporal disparities in Australian general practice settings. Addressing systemic barriers, strengthening GP-led screening, and implementing targeted interventions are crucia...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41169341/?

## **Rare Ocular Complication After Prone Position Surgery: Bilateral Subconjunctival Hemorrhage Following Endoscopic Lumbar Discectomy**









Summary: Subconjunctival hemorrhage (SCH) is a rare complication in spinal surgery and is even more uncommon in endoscopic procedures, which are typically of short duration. We report the case of a 32-year-old male who developed bilateral SCH after an uneventful L4-L5 lumbar endoscopic discectomy performed u...

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https://pubmed.ncbi.nlm.nih.gov/41170305/?

## A Rare Co-Occurrence of Gastric Heterotopia and Autonomic **Nervous System Dysfunction: An Attempt to Explain If There** Is a Need to Explore Possible Syndromic Link

Mohamed H
Ahmed

1 62 Low VISION min words

Summary: Gastric heterotopia (GHT) is the presence of gastric mucosa outside the stomach, including in the rectum. A 59-year-old man presented with rectal bleeding and altered bowel habits, along with long-standing low blood pressure and erectile dysfunction. Investigations confirmed rectal GHT, initially ma...

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### Ocular Syphilis in an Immunocompetent Patient: Through the Lens

1 72 Low VISION min words

Summary: Ocular manifestations of syphilis can occur at any stage of the disease and present with a wide range of clinical features. If left untreated, they carry a high risk of permanent vision loss. Although syphilis mainly affects individuals with human immunodeficiency virus (HIV) positive and other immu...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41170350/?

## The taste of trigeminal sensations: relation between taste, lingual tactile acuity, and spicy perception in patients with taste dysfunction

Thomas
Hummel

Thomas

Tactile Acuity

Thomas

Summary: In the oral cavity, oral stereognosis and chemesthesis refer to the abilities to recognize shapes and detect noxious substances, respectively, through various receptors distributed on the tongue. The absence of standardized methods to assess oral somatosensory perception has led to a lack of consens...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/40434896/?

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## **Measuring the Distribution of Tactile Acuity at the Index Finger and Thumb Fingertips**



1 75
min words

TACTILE ACUITY

Summary: In our day-to-day activities, we utilize not only the pads of our fingers but also the sides and hemispherical tips when manipulating objects. For teleoperation systems to replicate these real-life interactions, tactile sensation must be presented and distributed across the entire fingertip. Thus, u...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40526544/?

## Optimizing Vibrotactile Feedback for Sensory Substitution in the Thigh: Spatial Acuity and Frequency Characteristics

Leah R

Bent

1

2025-06-27

min

69

words

TACTILE ACUITY

**Summary:** Amputation of a lower limb not only affects mobility but also interferes with sensory feedback, leading to an elevated risk of falls among individuals living with amputation. Sensory substitution, achieved through tactile displays embedded in transfemoral prosthetic sockets, presents a promising non...

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## Directional vibro-tactile hazard warnings for drivers with vision impairments

Alex R

Bowers

1

80

min

words

TACTILE ACUITY

Summary: Vision impairment may delay responses to hazards when driving. In a proof-ofconcept driving simulator study, we evaluated a hazard warning device designed for vision impaired drivers. Three groups participated: 11 persons with central vision loss (CVL; median age 60 years), 12 with homonymous field...

#### 

https://pubmed.ncbi.nlm.nih.gov/40601880/?

## Sensitivity and vagal reactivity to C-tactile-mediated affective touch in mild cognitive impairment due to Alzheimer's disease



1 2025-08-01 min 64 TACTILE ACUITY

Summary: BackgroundC-tactile (CT) afferents preferentially activate in response to slow caress-like touch, evoking a diffuse pleasant sensation and promoting autonomic regulation. According to Braak's classic model, the neurodegenerative process in Alzheimer's disease (AD) only affects somatosensory cortices...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/40746091/?

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## Differences in tactile grid localization accuracy between people with back pain compared to individuals without pain



1 22 min 2025-08-24 min 22





**Summary:** OBJECTIVES: The study aimed to investigate the grid localization test (GLT) between patients with lower back pain and those without back pain.

#### 

https://pubmed.ncbi.nlm.nih.gov/40850311/?

## **Eye Drop Instillation Success and Hand Function in Adults** with Glaucoma: A Pilot Study

Paula Anne Newman-Casev

1 74 TACTILE ACUITY words

Summary: CONCLUSIONS: Despite hand function deficits, in this exploratory pilot study, adults with glaucoma demonstrated eye drop instillation success comparable to those without glaucoma, though with higher rates of bottle tip contact with the eye, skin, or eyelashes, suggesting an increased risk of potenti...

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## Functional evidence for early origin of tactile acuity in the vertebrate somatosensory system

Sviatoslav N Bagriantsev

1 2025-09-13 min 58 words

TACTILE ACUITY

Summary: Mammals and reptiles possess a sophisticated somatosensory system for precise tactile discrimination via mechanosensory end-organs, such as Meissner and Pacinian corpuscles and others. These structures detect sustained pressure, velocity, and vibrations, thereby facilitating nuanced environmental in...

#### 

https://pubmed.ncbi.nlm.nih.gov/40945511/?

## The coarse mental map of the breast is anchored on the nipple

Charles M

Greenspon

1

86

min

words

TACTILE ACUITY

Summary: Touch plays a key role in our perception of our body and shapes our interactions with the world, from the objects we manipulate to the people we touch. While the tactile sensibility of the hand has been extensively characterized, much less is known about touch on other parts of the body. Despite the...

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## **Haptic Feedback Systems for Lower-Limb Prosthetic** Applications: A Review of System Design, User Experience, and Clinical Insights







TACTILE ACUITY

Summary: Systems presenting haptic information have emerged as an important technological advance in assisting individuals with sensory impairments or amputations, where the aim is to enhance sensory perception or provide sensory substitution through tactile feedback. These systems provide information on lim...

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## A Biomimetic Fiber-Entangled Permeable Electronic Skin for Strain-Insensitive and High-Resolution Tactile Sensing







Summary: Electronic skins (e-skins) incorporating island architectures represent a promising platform for strain-insensitive tactile sensing by mechanically decoupling sensing units from deformations. However, conventional island designs encounter stress concentration issues caused by inherent modulus mismat...

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## **High-Density Tactile Sensor Array for Sub-Millimeter Texture** Recognition











Summary: High-density tactile sensor arrays that replicate human touch could restore texture perception in paralyzed individuals. However, conventional tactile sensor arrays face inherent trade-offs between spatial resolution, sensitivity, and crosstalk suppression due to microstructure size limitations and ...

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# A Diachronic Investigation of the Change in Form and Formational-Semantic Systematicity of the Chinese Sign Language Lexicon



**Summary:** It has been argued in previous research that several competing pressures guide the directions of language evolution (economy vs. redundancy; arbitrariness vs. systematicity). For sign languages, however, the effects of competing pressures on their change of lexical systems remain largely unclear. In...

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## Wireless Electrotactile System with Hydrogel-Based Electrodes for Conformal Tactile Interaction



**Summary:** A wireless epidermal electrotactile interface is demonstrated through integration of skin-conformal electrodes and flexible circuitry, addressing existing limitations in haptic technology caused by mechanical mismatch and system-level integration challenges. This electrotactile system achieves low s...

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## Beyond access: rethinking assistive technology for individuals with visual impairments in Türkiye

Önder

1 55 min words

Summary: CONCLUSION: Despite demonstrating adaptability, individuals with VI in Türkiye face significant structural barriers to equitable AT access. Informal learning limited public support, and a lack of locally adapted tools contribute to digital exclusion. A rightsbased approach-emphasizing inclusive fun...

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## High prevalence of bacterial STI, anal HPV, cytological abnormalities and anal lesions among MSM in Togo, 2021: a baseline analysis of the ANRS I MIE 12,400/DepIST-H cohort



1 42 words

Summary: CONCLUSIONS: These findings emphasize the high prevalence of STIs among MSM and confirm the unusual distribution of HPV types in West Africa, with HPV35 being highly prevalent. A national strategy regarding STI screening and HPV vaccination in this key population is needed.

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## Development and Assessment of a Novel Audiosensory Performance Method for Improving the Oral Health of Visually Impaired Children



**Summary:** This study evaluated the effectiveness of an audiosensory performance method in enhancing oral health knowledge and status among visually impaired children aged 6-12 years in the National Capital Region (NCR), Delhi. An interventional study design was used, involving 251 participants equally divided...

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## **Examining the ability of the interRAI communication** collaborative action plan to identify individuals with sensory challenges: A retrospective cohort study









Summary: CONCLUSIONS: The communication CAP was robust in flagging individuals with sensory impairments as these individuals are more likely to fall into the triggered to facilitate improvement group. The three case studies highlight the importance of assessing all aspects of communication (e.g., cognitive, ...

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## **Analysis of Stability and Functionality of Coil and** Piezoelectric Braille Modules Under Varying Temperature Conditions







Summary: In this study, the performance and reliability of two different types of Braille modules, i.e., coil and piezoelectric, under varying temperature conditions were compared. The coil module works on the principle of electromagnetic forces generated by coils, while the piezoelectric module is based on ...

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## Challenges faced by visually impaired individuals from the perspective of faculty members: a phenomenological study









Summary: Visually impaired students in higher education face significant academic, social, and psychological barriers that are often overlooked by faculty. This phenomenological study explored these challenges at Hail University, Saudi Arabia, by purposively sampling six faculty members from the Colleges of ...

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# Non-invasive brain stimulation combined with three rehabilitation approaches for cognitive and emotional well-being in Parkinson's patients



**Summary:** CONCLUSION: This study demonstrates that non-invasive brain stimulation combined with cognitive rehabilitation (CR) is the most effective approach for improving cognitive function in Parkinson's patients, while combined motor-cognitive rehabilitation (MCR) shows particular efficacy for emotional wel...

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## Precision Neuromodulation for Diabetes-Associated **Cognitive Decline: a Transcranial Electrical Stimulation Approach**







Summary: CONCLUSION: These findings indicate that tDCS presents a promising, noninvasive therapeutic approach. It demonstrates potential for enhancing cognitive function in patients with DACD and for facilitating improved long-term glycemic control. This highlights the role of brain neuromodulation as a com...

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## The Hidden Benefits of Noise: Low-Frequency tRNS and **Dynamic Visual Noise Enhance Visual Processing**









TDCS TACS TRNS

Summary: Sensory and perceptual processing is inherently shaped by both internal and external noise sources. While noise is typically seen as disruptive, it can, under certain conditions, enhance the detection of weak sensory signals-a phenomenon known as stochastic resonance (SR). Research on SR has primari...

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## A Comprehensive Review of Trigeminal Autonomic Cephalalgias







TDCS TACS TRNS

**Summary:** Trigeminal autonomic cephalalgias (TACs) are a distinct group of primary headache disorders characterized by unilateral pain and autonomic symptoms such as tearing, nasal congestion, and ptosis. This article provides an in-depth review of the different TAC subtypes, including cluster headache, short...

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## Effects on nonverbal numerical acuity performance after a single-session transient random noise stimulation over the intraparietal sulcus or dorsolateral prefrontal cortex







## Read full article:

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## Post-discharge use of opioids, psychostimulants, and treatment medications following residential opioid discontinuation with NET Device™ monotherapy







TDCS TACS TRNS

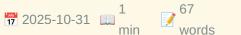
Summary: CONCLUSIONS: The randomized groups did not differ on outcomes. However, participants who self-administered active NET Device stimulation >24 hours reported significantly fewer post-discharge days of opioid or psychostimulant use than those who self-administered active <24 hours or sham, but these fi...

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## Anodal transcranial direct current stimulation does not alter GABA concentration or functional connectivity in the normal visual cortex







TDCS TACS TRNS

Summary: INTRODUCTION: Anodal direct current stimulation (a-tDCS) of the visual cortex is a potential rehabilitation tool for vision disorders such as amblyopia and macular degeneration. However, the underlying neural mechanisms are currently unknown. When applied to the human motor cortex, a-tDCS reduces th...

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Can exercise therapy combined with transcranial direct current stimulation further improve balance ability in individuals with chronic ankle instability? A systematic review and meta-analysis







TDCS TACS TRNS

Summary: CONCLUSION: tDCS provides therapeutic benefits for dynamic balance only when combined with non-balance exercises. Current evidence is insufficient to demonstrate improvements in static balance with tDCS adjunctive therapy.

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## **Physical Therapy for Addiction**







TDCS TACS TRNS

Summary: Physical therapy has the evidence-based scientific knowledge to address a wide range of physical and psychological problems of addiction. Neuromodulation techniques, including transcranial electrical stimulation (tES) methods like transcranial direct current stimulation (tDCS), transcranial alternat...

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The Effects of Transcranial Direct Current Stimulation Over the Prefrontal Cortex on Reactive Aggressive Behavior in Healthy Volunteers: A Systematic Review and Meta-analysis of Randomized Controlled Trials







TDCS TACS TRNS

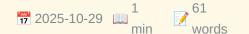
Summary: CONCLUSION: While the overall analysis did not show a significant effect of anodal on reactive aggressive behavior in healthy volunteers, the results suggest that online tDCS and unilateral tDCS may have a potential impact. Given the heterogeneity of the studies and outcome measures, further researc...

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## A Study on Hemodynamic and Brain Network Characteristics **During Upper Limb Movement in Children with Cerebral Hemiplegia Based on fNIRS**











Summary: Background: Hemiplegic cerebral palsy (HCP) is a motor dysfunction disorder resulting from perinatal developmental brain injury, predominantly impairing upper limb function in children. Nonetheless, there has been insufficient research on the brain activation patterns and inter-brain coordination me...

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## Task-Dependent Neural Activity in the Posterior Parietal **Cortex Is Associated with Better Balance in Adults with Acquired Brain Injury**









Summary: Background/Objectives: There is scarce evidence on the neural underpinnings of balance in people with chronic acquired brain injury (ABI). Thus, the objective was to measure this in adults with ABI during four balance tasks and to examine the relationship between neural activity and balance performa...

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# Medication vs. Movement in ADHD: Interaction Between Medication and Physical Activity on Neurocognitive Functioning



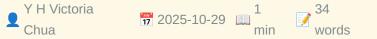
**Summary:** Background/Objectives: Movement during attention-demanding tasks may help compensate for cortical under-arousal in pediatric ADHD patients. However, the influence of medication during movement is unknown. This study assessed the impact of concurrent movement during executive functioning tasks on dor...

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## A Systematic Review of Inter-Brain Synchrony and Psychological Conditions: Stress, Anxiety, Depression, **Autism and Other Disorders**



Summary: CONCLUSIONS: Collectively, the findings support IBS as a potentially dynamic, condition-sensitive, and contextually modulated neurophysiological indicator of interpersonal functioning, with implications for diagnostics, intervention design, and the advancement of social neuroscience in clinical sett...

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## **DrSVision: A Machine Learning Tool for Cortical Region-**Specific fNIRS Calibration Based on Cadaveric Head MRI



1 63 min words

FNIRS

Summary: Functional Near-Infrared Spectroscopy is (fNIRS) a non-invasive neuroimaging technique that monitors cerebral hemodynamic responses by measuring near-infrared (NIR) light absorption caused by changes in oxygenated and deoxygenated hemoglobin concentrations. While fNIRS has been widely used in cognit...

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## Early Motor Cortex Connectivity and Neuronal Reactivity in **Intracerebral Hemorrhage: A Continuous-Wave Functional Near-Infrared Spectroscopy Study**







Summary: Insights into motor cortex remodeling may enable the development of more effective rehabilitation strategies during the acute phase. We aim to assess the affected and unaffected motor/premotor/somatosensory cortex resting state functional connectivity (RSFC) and reactivity with continuous wave funct...

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## Individual abilities to estimate levels of movement synchrony predict action observation network activation











Summary: Observers' ability to estimate levels of movement synchrony, such as in Olympic diving or rowing, is highly variable and, in part, constrained by personality traits and enjoyment of the movements. Embodiment also appears to play a crucial role, whereby stronger beliefs that one's body can complete p...

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The effects of combining anodal transcranial direct current stimulation with robot-assisted gait training on lower limb motor function and the motor cortex regulation of stroke patients



**Summary:** CONCLUSIONS: The combination of anodal tDCS and RAGT can enhance lower limb motor function in stroke patients, while also modulating the connectivity within the motor network. Additionally, the elevation of functional connectivity between the bilateral cerebral hemispheres, quantifiable through fNIR...

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## The Impact of Sports Experience on Map Symbol **Representation in Orienteering Athletes and Its Neural Correlates: Evidence from Eye-Tracking and fNIRS**











Summary: CONCLUSION: High-level orienteering athletes exhibit domain-specific cognitive advantages in map symbol representation tasks. Long-term orienteering map reading training facilitates synergistic interactions between visual and neural information processing.

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# The Impact of Teachers' Autonomy Support on Students' Academic Performance from the Perspective of Hyperscanning: the Mediating Role of Autonomy Need Satisfaction



**Summary:** Previous research on self-determination theory has primarily focused on analyzing experiences and behaviors, without fully elucidating the neural basis of how teacher autonomy support influences students' academic performance. In this study, four individuals were selected to act as teachers, while 4...

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## **Fatal Isolated Right Ventricular Rupture Without External Chest Injury in a Young Driver: Forensic Autopsy Findings** After a One-Sided Vehicle Collision







BRAIN COMPUTER INTERFACE

**Summary:** Traumatic deaths are common, with cardiac trauma affecting 7–12% of patients with thoracic injuries. Blunt cardiac injury (BCI), although rare, is associated with a high mortality rate. This report presents a case of blunt cardiac rupture (BCR) observed at autopsy despite the absence of external che...

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## Comparative analysis across diverse plant species reveals superior antibiofilm efficacy and dose-dependency of root extracts compared to leaf extracts







BRAIN COMPUTER INTERFACE

Summary: Although both root- and leaf-derived plant extracts hold potential as antibiofilm agents, research has predominantly focused on leaf tissues. In this study, we systematically compared the antibiofilm efficacy of 158 root and 248 leaf extracts from 360 plant species across five concentrations (0.1, 0...

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## An Active, Multimodal Neural Interface for Real-Time Monitoring of Cortical Electrical, Thermal, and Optical **Dynamics**







BRAIN COMPUTER INTERFACE

Summary: Chronic neurophysiological monitoring devices facilitate the timely diagnosis and treatment of episodic or recurrent neurological disorders. Compared with passive electrodes, silicon-based active transistors provide intrinsic signal amplification and, when combined with capacitive-coupling measureme...

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## Feasibility of decoding cerebellar movement-related potentials for brain-computer interface applications









BRAIN COMPUTER INTERFACE

Summary: 
In Brain-Computer Interface (BCI) applications, signals are conventionally acquired from the cerebrum, and only a subset of the complex interactions that occur in several areas of the brain are collected. One area that has not been investigated for BCI application is the cerebellum, despite its...

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## Acute Effects of Portable Dry-EEG Neurofeedback on **Classical Chinese Learning: A Three-Arm Repeated-Measures** Study







BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: Portable dry-electrode EEG systems can reliably support realtime neurofeedback to enhance attention and cognitive control in complex language learning contexts. This study provides empirical validation for deploying dry-EEG sensors in adaptive educational technologies and contributes t...

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## The effect of perceived auditory feedback on speech Brain-**Computer Interface decoding performance**







BRAIN COMPUTER INTERFACE

Summary: OBJECTIVE: Brain-Computer Interfaces (BCI) provide alternative means of communication for individuals with severe motor impairment. Implantable speech BCIs have shown great potential, particularly in individuals who could still produce some speechrelated movements and/or sounds. As perception of au...

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## The influence of different visual eccentricity on SSVEPs elicited by ultra-low frequency visual stimulation in the lower peripheral visual field

Xiaogang 1 70
Chen min words

BRAIN COMPUTER INTERFACE

Summary: Steady-state visual evoked potential (SSVEP)-based brain-computer interfaces (BCIs) have been widely explored due to their high information transfer rate (ITR) and minimal training requirements. Traditional SSVEP-based BCIs typically use low- and medium-frequency visual stimuli from the central visu...

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## Towards neuroadaptive chatbots: a feasibility study

1 73 min words





BRAIN COMPUTER INTERFACE

Summary: INTRODUCTION: Large-language models (LLMs) are transforming most industries today and are set to become a cornerstone of the human digital experience. While integrating explicit human feedback into the training and development of LLM-based chatbots has been integral to the progress we see nowadays, ...

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## A Novel Binocular-Encoded SSVEP Framework for Efficient **VR-Based Brain-Computer Interface**







BRAIN COMPUTER INTERFACE

Summary: This paper presents a novel binocular-encoded SSVEP (beSSVEP) method, leveraging binocular vision in virtual reality (VR) to enhance brain-computer interface (BCI) applications. We introduce the Binocular Periodically Repeated Component Analysis (bPRCA) algorithm, designed to address the unique char...

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## A novel channel reduction concept to enhance the classification of motor imagery tasks in brain-computer interface systems



Hua
Wang

Wang

Wang

Wang

Words

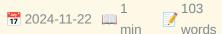
Words

Summary: Electroencephalogram (EEG) signals play a critical role in advancing braincomputer interface (BCI) systems, particularly for detecting motor imagery (MI) movements. However, analysing large volume of EEG datasets faces some challenges due to redundant information, and performance degradation. Irrel...

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## Immunomechanobiology: Engineering the Activation and Function of Immune Cells With the Mechanical Signal of Fluid **Shear Stress**





REVIEWS BIOMEDICAL ENGINEERING

**Summary:** Immunomechanobiology, the study of how physical forces influence the behavior and function of immune cells, is a rapidly growing area of research. It is becoming increasingly recognized that mechanical stimuli, such as fluid shear forces, are a critical determinant of immune cell regulation. In this...

## 

http://ieeexplore.ieee.org/document/10764720

## Invariant HVC size in female canaries singing under testosterone: Unlocking function through neural differentiation, not growth

Shouwen MaCarolina Frankl-VilchesManfred GahraDepartment of Behavioural Neurobiology, Max Planck Institute for Biological Intelligence, Seewiesen 82319, Germany



**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 43, October 2025. <br/>
SignificanceIn many songbird species, singing can be induced in otherwise nonsinging females or is expressed only during certain life stages. These transient behaviors have been attributed to testosterone-driv...



https://www.pnas.org/doi/abs/10.1073/pnas.2426847122?af=R

## Advancing epileptic seizure recognition through bidirectional LSTM networks



FRONTIERS COMPUTATIONAL NEUROSCIENCE

**Summary:** Seizure detection in a timely and accurate manner remains a primary challenge in clinical neurology, affecting diagnosis planning and patient management. Most of the traditional methods rely on feature extraction and traditional machine learning techniques, which are not efficient in capturing the d...

#### 

https://www.frontiersin.org/articles/10.3389/fncom.2025.1668358

## Decoding saccadic eye movements from brain signals using an endovascular neural interface

Suleman Rasheed, James Bennett, Peter E Yoo, Anthony N Burkitt and David B Grayden

1 2025-10-23 min 299 JOURNAL NEURAL ENGINEERING

**Summary:** Objective. An oculomotor brain–computer interface (BCI) records neural activity from brain regions involved in planning eye movements and translates this activity into control commands. While previous successful studies have relied on invasive implants in non-human primates or electrooculography art...

http://iopscience.iop.org/article/10.1088/1741-2552/ae0f52

## The impact of CSF-filled cavities on scalp EEG and its implications



**Summary:** Previous studies have found electroencephalogram (EEG) amplitude and scalp topography differences between neurotypical and neurological/neurosurgical groups, being interpreted at the cognitive level. However, these comparisons are invariably accompanied by anatomical changes. Critical to EEG are the...

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## Motion-BIDS: an extension to the brain imaging data structure to organize motion data for reproducible research

Julius

1 72 2024-07-02 min words OOSTENVELD ROBERT

Summary: We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalitie...

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## One hundred years of EEG for brain and behaviour research









OOSTENVELD ROBERT

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## Freezing of gait in Parkinson's disease is related to imbalanced stopping-related cortical activity

Richard J A van

1 65 min words

OOSTENVELD ROBERT

Summary: Freezing of gait, characterized by involuntary interruptions of walking, is a debilitating motor symptom of Parkinson's disease that restricts people's autonomy. Previous brain imaging studies investigating the mechanisms underlying freezing were restricted to scan people in supine positions and yie...

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## The past, present, and future of the brain imaging data structure (BIDS)

Krzysztof J Gorgolewski 1 82 min words

OOSTENVELD ROBERT

Summary: The Brain Imaging Data Structure (BIDS) is a community-driven standard for the organization of data and metadata from a growing range of neuroscience modalities. This paper is meant as a history of how the standard has developed and grown over time. We outline the principles behind the project, the ...

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## Human cortical high-gamma power scales with movement rate in healthy participants and stroke survivors

Fanny Quandt

1 65 min words

OOSTENVELD ROBERT

Summary: Motor cortical high-gamma oscillations (60-90 Hz) occur at movement onset and are spatially focused over the contralateral primary motor cortex. Although high-gamma oscillations are widely recognized for their significance in human motor control, their precise function on a cortical level remains el...

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## NIRS-BIDS: Brain Imaging Data Structure Extended to Near-**Infrared Spectroscopy**



1 70 min words

OOSTENVELD ROBERT

Summary: Functional near-infrared spectroscopy (fNIRS) is an increasingly popular neuroimaging technique that measures cortical hemodynamic activity in a non-invasive and portable fashion. Although the fNIRS community has been successful in disseminating open-source processing tools and a standard file forma...

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## Pseudonymisation of neuroimages and data protection: <em>Increasing access to data while retaining scientific utility</em>

Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld robert

Oostenveld robert

Summary: For a number of years, facial features removal techniques such as 'defacing', 'skull stripping' and 'face masking/blurring', were considered adequate privacy preserving tools to openly share brain images. Scientifically, these measures were already a compromise between data protection requirements a...

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## Cycling on the Freeway: The perilous state of open-source neuroscience software

1 74 min words

OOSTENVELD ROBERT

Summary: Most scientists need software to perform their research (Barker et al., 2020; Carver et al., 2022; Hettrick, 2014; Hettrick et al., 2014; Switters & Osimo, 2019), and neuroscientists are no exception. Whether we work with reaction times, electrophysiological signals, or magnetic resonance imaging data, ...

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## Optimal configuration of on-scalp OPMs with fixed channel counts

Robert 1 69
Oostenveld min words

OOSTENVELD ROBERT

Summary: Recent technological developments have brought optically pumped magnetometers (OPMs) within reach of the larger neuroscientific community. The current state-of-the-art consists of whole-head systems that measure the magnetic field at >100 locations. OPM sensors can be constructed to measure the fiel...

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## Six-Month Interim Analyses of the Efficacy of Repeated Low-**Level Red-Light Therapy Combined with Orthokeratology for Myopia Control in Spanish Children**

Fernando J Fernández-Velázquez

28 min words

LOW VISION

Summary: CONCLUSIONS: The six-month interim analysis indicates that combining RLRL therapy with OK effectively controls myopia progression in Spanish children, with no severe adverse effects. Long-term follow-up is ongoing.

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## Predictors of posttraumatic stress disorder among displaced families in Lebanon: A cross-sectional study

Rola Bou



Summary: This study aimed to assess the prevalence of posttraumatic stress disorder (PTSD) among Lebanese individuals internally displaced by the recent conflict and to identify key predictors of PTSD. The findings are intended to guide targeted policy and advocacy strategies aimed at improving mental health...

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## Incidental ocular surface squamous neoplasia in pterygia: a systematic review and meta-analysis

1 47 min words

LOW VISION

Summary: CONCLUSIONS: This meta-analysis, based on low- to very low-certainty evidence, identified a 1.32% pooled prevalence of incidental OSSN in clinically diagnosed pterygia, highlighting the potential influence of UV exposure and equatorial proximity. The overlap in demographic and lesion characteristics...

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## The Hidden Benefits of Noise: Low-Frequency tRNS and **Dynamic Visual Noise Enhance Visual Processing**

Hulusi Kafaligonul 1 70 min words

Summary: Sensory and perceptual processing is inherently shaped by both internal and external noise sources. While noise is typically seen as disruptive, it can, under certain conditions, enhance the detection of weak sensory signals-a phenomenon known as stochastic resonance (SR). Research on SR has primari...

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## **Headaches due to Low and High Intracranial Pressure**

1 63 min words

LOW VISION

Summary: This article provides a comprehensive overview of high-pressure and lowpressure headaches, focusing on their pathophysiology, clinical presentation, diagnosis, and management. High-pressure headaches, often linked to idiopathic intracranial hypertension, primarily affect young women and can lead to...

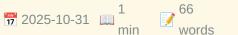
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## **Synergistic Charge Generation and Collection Enabled by Incorporation of Crystalline Polymer for Ultrafast-Response Dual-Band Perovskite/Organic Photodetectors**







LOW VISION

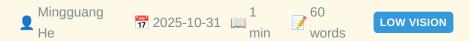
Summary: Dual-band photodetectors (PDs) capable of selectively responding to both visible and near-infrared (NIR) light are essential for applications in optical communication, medical diagnostics, and artificial vision systems. In this work, we report a highperformance visible/NIR dual-band PD based on a v...

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## Diabetic retinopathy screening in Australian general practice: persistently low uptake despite national guidelines and equity initiatives



**Summary:** CONCLUSION: Despite national guidelines, GP-led DR screening uptake remains low, with substantial geographic, demographic and temporal disparities in Australian general practice settings. Addressing systemic barriers, strengthening GP-led screening, and implementing targeted interventions are crucia...

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## **Rare Ocular Complication After Prone Position Surgery: Bilateral Subconjunctival Hemorrhage Following Endoscopic Lumbar Discectomy**









Summary: Subconjunctival hemorrhage (SCH) is a rare complication in spinal surgery and is even more uncommon in endoscopic procedures, which are typically of short duration. We report the case of a 32-year-old male who developed bilateral SCH after an uneventful L4-L5 lumbar endoscopic discectomy performed u...

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## A Rare Co-Occurrence of Gastric Heterotopia and Autonomic **Nervous System Dysfunction: An Attempt to Explain If There** Is a Need to Explore Possible Syndromic Link



1 62 Low Vision min words

Summary: Gastric heterotopia (GHT) is the presence of gastric mucosa outside the stomach, including in the rectum. A 59-year-old man presented with rectal bleeding and altered bowel habits, along with long-standing low blood pressure and erectile dysfunction. Investigations confirmed rectal GHT, initially ma...

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## Ocular Syphilis in an Immunocompetent Patient: Through the Lens



1 72 Low VISION min words





Summary: Ocular manifestations of syphilis can occur at any stage of the disease and present with a wide range of clinical features. If left untreated, they carry a high risk of permanent vision loss. Although syphilis mainly affects individuals with human immunodeficiency virus (HIV) positive and other immu...

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## The taste of trigeminal sensations: relation between taste, lingual tactile acuity, and spicy perception in patients with taste dysfunction

Thomas
Hummel

Thomas

Tactile Acuity

Thomas

Summary: In the oral cavity, oral stereognosis and chemesthesis refer to the abilities to recognize shapes and detect noxious substances, respectively, through various receptors distributed on the tongue. The absence of standardized methods to assess oral somatosensory perception has led to a lack of consens...

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## **Measuring the Distribution of Tactile Acuity at the Index Finger and Thumb Fingertips**

Hiroyuki

1 75
min words

TACTILE ACUITY

Summary: In our day-to-day activities, we utilize not only the pads of our fingers but also the sides and hemispherical tips when manipulating objects. For teleoperation systems to replicate these real-life interactions, tactile sensation must be presented and distributed across the entire fingertip. Thus, u...

#### Read full article:

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## Optimizing Vibrotactile Feedback for Sensory Substitution in the Thigh: Spatial Acuity and Frequency Characteristics

Leah R

Bent

1

2025-06-27

min

69

words



TACTILE ACUITY

**Summary:** Amputation of a lower limb not only affects mobility but also interferes with sensory feedback, leading to an elevated risk of falls among individuals living with amputation. Sensory substitution, achieved through tactile displays embedded in transfemoral prosthetic sockets, presents a promising non...

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## Directional vibro-tactile hazard warnings for drivers with vision impairments

Alex R

Bowers

1

80

min

words





TACTILE ACUITY

Summary: Vision impairment may delay responses to hazards when driving. In a proof-ofconcept driving simulator study, we evaluated a hazard warning device designed for vision impaired drivers. Three groups participated: 11 persons with central vision loss (CVL; median age 60 years), 12 with homonymous field...

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https://pubmed.ncbi.nlm.nih.gov/40601880/?

## Sensitivity and vagal reactivity to C-tactile-mediated affective touch in mild cognitive impairment due to Alzheimer's disease







Summary: BackgroundC-tactile (CT) afferents preferentially activate in response to slow caress-like touch, evoking a diffuse pleasant sensation and promoting autonomic regulation. According to Braak's classic model, the neurodegenerative process in Alzheimer's disease (AD) only affects somatosensory cortices...

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## Differences in tactile grid localization accuracy between people with back pain compared to individuals without pain









**Summary:** OBJECTIVES: The study aimed to investigate the grid localization test (GLT) between patients with lower back pain and those without back pain.

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https://pubmed.ncbi.nlm.nih.gov/40850311/?

## **Eye Drop Instillation Success and Hand Function in Adults** with Glaucoma: A Pilot Study

Paula Anne Newman-Casev

1 74 TACTILE ACUITY words

Summary: CONCLUSIONS: Despite hand function deficits, in this exploratory pilot study, adults with glaucoma demonstrated eye drop instillation success comparable to those without glaucoma, though with higher rates of bottle tip contact with the eye, skin, or eyelashes, suggesting an increased risk of potenti...

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## Functional evidence for early origin of tactile acuity in the vertebrate somatosensory system

Sviatoslav N Bagriantsev

1 2025-09-13 min 58 words

TACTILE ACUITY

Summary: Mammals and reptiles possess a sophisticated somatosensory system for precise tactile discrimination via mechanosensory end-organs, such as Meissner and Pacinian corpuscles and others. These structures detect sustained pressure, velocity, and vibrations, thereby facilitating nuanced environmental in...

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https://pubmed.ncbi.nlm.nih.gov/40945511/?

## The coarse mental map of the breast is anchored on the nipple

Charles M

Greenspon

1

86

words

TACTILE ACUITY

Summary: Touch plays a key role in our perception of our body and shapes our interactions with the world, from the objects we manipulate to the people we touch. While the tactile sensibility of the hand has been extensively characterized, much less is known about touch on other parts of the body. Despite the...

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## **Haptic Feedback Systems for Lower-Limb Prosthetic** Applications: A Review of System Design, User Experience, and Clinical Insights









TACTILE ACUITY

Summary: Systems presenting haptic information have emerged as an important technological advance in assisting individuals with sensory impairments or amputations, where the aim is to enhance sensory perception or provide sensory substitution through tactile feedback. These systems provide information on lim...

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https://pubmed.ncbi.nlm.nih.gov/41007234/?

## A Biomimetic Fiber-Entangled Permeable Electronic Skin for Strain-Insensitive and High-Resolution Tactile Sensing



1 57 min words

Summary: Electronic skins (e-skins) incorporating island architectures represent a promising platform for strain-insensitive tactile sensing by mechanically decoupling sensing units from deformations. However, conventional island designs encounter stress concentration issues caused by inherent modulus mismat...

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## **High-Density Tactile Sensor Array for Sub-Millimeter Texture** Recognition



Min 1 64
Zhang min words

BRAILLE

Summary: High-density tactile sensor arrays that replicate human touch could restore texture perception in paralyzed individuals. However, conventional tactile sensor arrays face inherent trade-offs between spatial resolution, sensitivity, and crosstalk suppression due to microstructure size limitations and ...

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https://pubmed.ncbi.nlm.nih.gov/40871941/?

## A Diachronic Investigation of the Change in Form and Formational-Semantic Systematicity of the Chinese Sign Language Lexicon



**Summary:** It has been argued in previous research that several competing pressures guide the directions of language evolution (economy vs. redundancy; arbitrariness vs. systematicity). For sign languages, however, the effects of competing pressures on their change of lexical systems remain largely unclear. In...

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## Wireless Electrotactile System with Hydrogel-Based Electrodes for Conformal Tactile Interaction



**Summary:** A wireless epidermal electrotactile interface is demonstrated through integration of skin-conformal electrodes and flexible circuitry, addressing existing limitations in haptic technology caused by mechanical mismatch and system-level integration challenges. This electrotactile system achieves low s...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40891563/?

## Beyond access: rethinking assistive technology for individuals with visual impairments in Türkiye





Summary: CONCLUSION: Despite demonstrating adaptability, individuals with VI in Türkiye face significant structural barriers to equitable AT access. Informal learning limited public support, and a lack of locally adapted tools contribute to digital exclusion. A rightsbased approach-emphasizing inclusive fun...

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## High prevalence of bacterial STI, anal HPV, cytological abnormalities and anal lesions among MSM in Togo, 2021: a baseline analysis of the ANRS I MIE 12,400/DepIST-H cohort









Summary: CONCLUSIONS: These findings emphasize the high prevalence of STIs among MSM and confirm the unusual distribution of HPV types in West Africa, with HPV35 being highly prevalent. A national strategy regarding STI screening and HPV vaccination in this key population is needed.

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41013315/?

## Development and Assessment of a Novel Audiosensory Performance Method for Improving the Oral Health of Visually Impaired Children



**Summary:** This study evaluated the effectiveness of an audiosensory performance method in enhancing oral health knowledge and status among visually impaired children aged 6-12 years in the National Capital Region (NCR), Delhi. An interventional study design was used, involving 251 participants equally divided...

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https://pubmed.ncbi.nlm.nih.gov/41041413/?

## **Examining the ability of the interRAI communication** collaborative action plan to identify individuals with sensory challenges: A retrospective cohort study











Summary: CONCLUSIONS: The communication CAP was robust in flagging individuals with sensory impairments as these individuals are more likely to fall into the triggered to facilitate improvement group. The three case studies highlight the importance of assessing all aspects of communication (e.g., cognitive, ...

#### 

https://pubmed.ncbi.nlm.nih.gov/41127342/?

## **Analysis of Stability and Functionality of Coil and** Piezoelectric Braille Modules Under Varying Temperature Conditions







Summary: In this study, the performance and reliability of two different types of Braille modules, i.e., coil and piezoelectric, under varying temperature conditions were compared. The coil module works on the principle of electromagnetic forces generated by coils, while the piezoelectric module is based on ...

## **⊗** Read full article:

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## Challenges faced by visually impaired individuals from the perspective of faculty members: a phenomenological study









Summary: Visually impaired students in higher education face significant academic, social, and psychological barriers that are often overlooked by faculty. This phenomenological study explored these challenges at Hail University, Saudi Arabia, by purposively sampling six faculty members from the Colleges of ...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41169919/?

## Non-invasive brain stimulation combined with three rehabilitation approaches for cognitive and emotional well-being in Parkinson's patients



**Summary:** CONCLUSION: This study demonstrates that non-invasive brain stimulation combined with cognitive rehabilitation (CR) is the most effective approach for improving cognitive function in Parkinson's patients, while combined motor-cognitive rehabilitation (MCR) shows particular efficacy for emotional wel...

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https://pubmed.ncbi.nlm.nih.gov/41164398/?

## Precision Neuromodulation for Diabetes-Associated **Cognitive Decline: a Transcranial Electrical Stimulation Approach**







Summary: CONCLUSION: These findings indicate that tDCS presents a promising, noninvasive therapeutic approach. It demonstrates potential for enhancing cognitive function in patients with DACD and for facilitating improved long-term glycemic control. This highlights the role of brain neuromodulation as a com...

## **⊗** Read full article:

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## The Hidden Benefits of Noise: Low-Frequency tRNS and **Dynamic Visual Noise Enhance Visual Processing**









TDCS TACS TRNS

Summary: Sensory and perceptual processing is inherently shaped by both internal and external noise sources. While noise is typically seen as disruptive, it can, under certain conditions, enhance the detection of weak sensory signals-a phenomenon known as stochastic resonance (SR). Research on SR has primari...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41167815/?

## A Comprehensive Review of Trigeminal Autonomic Cephalalgias







TDCS TACS TRNS

**Summary:** Trigeminal autonomic cephalalgias (TACs) are a distinct group of primary headache disorders characterized by unilateral pain and autonomic symptoms such as tearing, nasal congestion, and ptosis. This article provides an in-depth review of the different TAC subtypes, including cluster headache, short...

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## Effects on nonverbal numerical acuity performance after a single-session transient random noise stimulation over the intraparietal sulcus or dorsolateral prefrontal cortex







## Read full article:

https://pubmed.ncbi.nlm.nih.gov/41168231/?

## Post-discharge use of opioids, psychostimulants, and treatment medications following residential opioid discontinuation with NET Device™ monotherapy









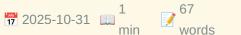
Summary: CONCLUSIONS: The randomized groups did not differ on outcomes. However, participants who self-administered active NET Device stimulation >24 hours reported significantly fewer post-discharge days of opioid or psychostimulant use than those who self-administered active <24 hours or sham, but these fi...

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https://pubmed.ncbi.nlm.nih.gov/41169495/?

## Anodal transcranial direct current stimulation does not alter GABA concentration or functional connectivity in the normal visual cortex







TDCS TACS TRNS

Summary: INTRODUCTION: Anodal direct current stimulation (a-tDCS) of the visual cortex is a potential rehabilitation tool for vision disorders such as amblyopia and macular degeneration. However, the underlying neural mechanisms are currently unknown. When applied to the human motor cortex, a-tDCS reduces th...

#### 

https://pubmed.ncbi.nlm.nih.gov/41169746/?

Can exercise therapy combined with transcranial direct current stimulation further improve balance ability in individuals with chronic ankle instability? A systematic review and meta-analysis







TDCS TACS TRNS

Summary: CONCLUSION: tDCS provides therapeutic benefits for dynamic balance only when combined with non-balance exercises. Current evidence is insufficient to demonstrate improvements in static balance with tDCS adjunctive therapy.

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## **Physical Therapy for Addiction**







TDCS TACS TRNS

Summary: Physical therapy has the evidence-based scientific knowledge to address a wide range of physical and psychological problems of addiction. Neuromodulation techniques, including transcranial electrical stimulation (tES) methods like transcranial direct current stimulation (tDCS), transcranial alternat...

#### 

https://pubmed.ncbi.nlm.nih.gov/41171569/?

The Effects of Transcranial Direct Current Stimulation Over the Prefrontal Cortex on Reactive Aggressive Behavior in Healthy Volunteers: A Systematic Review and Meta-analysis of Randomized Controlled Trials







TDCS TACS TRNS

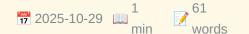
Summary: CONCLUSION: While the overall analysis did not show a significant effect of anodal on reactive aggressive behavior in healthy volunteers, the results suggest that online tDCS and unilateral tDCS may have a potential impact. Given the heterogeneity of the studies and outcome measures, further researc...

#### 

https://pubmed.ncbi.nlm.nih.gov/41172252/?

## A Study on Hemodynamic and Brain Network Characteristics **During Upper Limb Movement in Children with Cerebral Hemiplegia Based on fNIRS**









Summary: Background: Hemiplegic cerebral palsy (HCP) is a motor dysfunction disorder resulting from perinatal developmental brain injury, predominantly impairing upper limb function in children. Nonetheless, there has been insufficient research on the brain activation patterns and inter-brain coordination me...

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## Task-Dependent Neural Activity in the Posterior Parietal **Cortex Is Associated with Better Balance in Adults with Acquired Brain Injury**









Summary: Background/Objectives: There is scarce evidence on the neural underpinnings of balance in people with chronic acquired brain injury (ABI). Thus, the objective was to measure this in adults with ABI during four balance tasks and to examine the relationship between neural activity and balance performa...

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## Medication vs. Movement in ADHD: Interaction Between Medication and Physical Activity on Neurocognitive Functioning



**Summary:** Background/Objectives: Movement during attention-demanding tasks may help compensate for cortical under-arousal in pediatric ADHD patients. However, the influence of medication during movement is unknown. This study assessed the impact of concurrent movement during executive functioning tasks on dor...

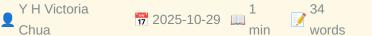
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## A Systematic Review of Inter-Brain Synchrony and Psychological Conditions: Stress, Anxiety, Depression, **Autism and Other Disorders**









**Summary:** CONCLUSIONS: Collectively, the findings support IBS as a potentially dynamic, condition-sensitive, and contextually modulated neurophysiological indicator of interpersonal functioning, with implications for diagnostics, intervention design, and the advancement of social neuroscience in clinical sett...

## **⊗** Read full article:

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## **DrSVision: A Machine Learning Tool for Cortical Region-**Specific fNIRS Calibration Based on Cadaveric Head MRI











Summary: Functional Near-Infrared Spectroscopy is (fNIRS) a non-invasive neuroimaging technique that monitors cerebral hemodynamic responses by measuring near-infrared (NIR) light absorption caused by changes in oxygenated and deoxygenated hemoglobin concentrations. While fNIRS has been widely used in cognit...

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## Early Motor Cortex Connectivity and Neuronal Reactivity in **Intracerebral Hemorrhage: A Continuous-Wave Functional Near-Infrared Spectroscopy Study**







Summary: Insights into motor cortex remodeling may enable the development of more effective rehabilitation strategies during the acute phase. We aim to assess the affected and unaffected motor/premotor/somatosensory cortex resting state functional connectivity (RSFC) and reactivity with continuous wave funct...

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## Individual abilities to estimate levels of movement synchrony predict action observation network activation











Summary: Observers' ability to estimate levels of movement synchrony, such as in Olympic diving or rowing, is highly variable and, in part, constrained by personality traits and enjoyment of the movements. Embodiment also appears to play a crucial role, whereby stronger beliefs that one's body can complete p...

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The effects of combining anodal transcranial direct current stimulation with robot-assisted gait training on lower limb motor function and the motor cortex regulation of stroke patients



**Summary:** CONCLUSIONS: The combination of anodal tDCS and RAGT can enhance lower limb motor function in stroke patients, while also modulating the connectivity within the motor network. Additionally, the elevation of functional connectivity between the bilateral cerebral hemispheres, quantifiable through fNIR...

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## The Impact of Sports Experience on Map Symbol **Representation in Orienteering Athletes and Its Neural Correlates: Evidence from Eye-Tracking and fNIRS**











Summary: CONCLUSION: High-level orienteering athletes exhibit domain-specific cognitive advantages in map symbol representation tasks. Long-term orienteering map reading training facilitates synergistic interactions between visual and neural information processing.

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# The Impact of Teachers' Autonomy Support on Students' Academic Performance from the Perspective of Hyperscanning: the Mediating Role of Autonomy Need Satisfaction



**Summary:** Previous research on self-determination theory has primarily focused on analyzing experiences and behaviors, without fully elucidating the neural basis of how teacher autonomy support influences students' academic performance. In this study, four individuals were selected to act as teachers, while 4...

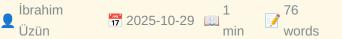
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## **Fatal Isolated Right Ventricular Rupture Without External Chest Injury in a Young Driver: Forensic Autopsy Findings** After a One-Sided Vehicle Collision







BRAIN COMPUTER INTERFACE

**Summary:** Traumatic deaths are common, with cardiac trauma affecting 7–12% of patients with thoracic injuries. Blunt cardiac injury (BCI), although rare, is associated with a high mortality rate. This report presents a case of blunt cardiac rupture (BCR) observed at autopsy despite the absence of external che...

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## Comparative analysis across diverse plant species reveals superior antibiofilm efficacy and dose-dependency of root extracts compared to leaf extracts







BRAIN COMPUTER INTERFACE

Summary: Although both root- and leaf-derived plant extracts hold potential as antibiofilm agents, research has predominantly focused on leaf tissues. In this study, we systematically compared the antibiofilm efficacy of 158 root and 248 leaf extracts from 360 plant species across five concentrations (0.1, 0...

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## An Active, Multimodal Neural Interface for Real-Time Monitoring of Cortical Electrical, Thermal, and Optical **Dynamics**







BRAIN COMPUTER INTERFACE

Summary: Chronic neurophysiological monitoring devices facilitate the timely diagnosis and treatment of episodic or recurrent neurological disorders. Compared with passive electrodes, silicon-based active transistors provide intrinsic signal amplification and, when combined with capacitive-coupling measureme...

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## Feasibility of decoding cerebellar movement-related potentials for brain-computer interface applications









BRAIN COMPUTER INTERFACE

Summary: 
In Brain-Computer Interface (BCI) applications, signals are conventionally acquired from the cerebrum, and only a subset of the complex interactions that occur in several areas of the brain are collected. One area that has not been investigated for BCI application is the cerebellum, despite its...

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## Acute Effects of Portable Dry-EEG Neurofeedback on **Classical Chinese Learning: A Three-Arm Repeated-Measures** Study









BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: Portable dry-electrode EEG systems can reliably support realtime neurofeedback to enhance attention and cognitive control in complex language learning contexts. This study provides empirical validation for deploying dry-EEG sensors in adaptive educational technologies and contributes t...

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## The effect of perceived auditory feedback on speech Brain-**Computer Interface decoding performance**







BRAIN COMPUTER INTERFACE

Summary: OBJECTIVE: Brain-Computer Interfaces (BCI) provide alternative means of communication for individuals with severe motor impairment. Implantable speech BCIs have shown great potential, particularly in individuals who could still produce some speechrelated movements and/or sounds. As perception of au...

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# The influence of different visual eccentricity on SSVEPs elicited by ultra-low frequency visual stimulation in the lower peripheral visual field

Xiaogang 1 70
Chen min words

BRAIN COMPUTER INTERFACE

Summary: Steady-state visual evoked potential (SSVEP)-based brain-computer interfaces (BCIs) have been widely explored due to their high information transfer rate (ITR) and minimal training requirements. Traditional SSVEP-based BCIs typically use low- and medium-frequency visual stimuli from the central visu...

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## Towards neuroadaptive chatbots: a feasibility study





BRAIN COMPUTER INTERFACE

Summary: INTRODUCTION: Large-language models (LLMs) are transforming most industries today and are set to become a cornerstone of the human digital experience. While integrating explicit human feedback into the training and development of LLM-based chatbots has been integral to the progress we see nowadays, ...

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# A Novel Binocular-Encoded SSVEP Framework for Efficient **VR-Based Brain-Computer Interface**







BRAIN COMPUTER INTERFACE

Summary: This paper presents a novel binocular-encoded SSVEP (beSSVEP) method, leveraging binocular vision in virtual reality (VR) to enhance brain-computer interface (BCI) applications. We introduce the Binocular Periodically Repeated Component Analysis (bPRCA) algorithm, designed to address the unique char...

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# A novel channel reduction concept to enhance the classification of motor imagery tasks in brain-computer interface systems



Hua
Wang

Wang

Wang

Wang

Words

Words



Summary: Electroencephalogram (EEG) signals play a critical role in advancing braincomputer interface (BCI) systems, particularly for detecting motor imagery (MI) movements. However, analysing large volume of EEG datasets faces some challenges due to redundant information, and performance degradation. Irrel...

#### **⊗** Read full article:

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# My type-safe asyncio lib and the fingerprinting guide it spawned







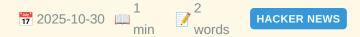
REDDIT PYTHON

Summary: <!-- SC OFF --><div class="md">I wanted to share a project that's been my passion, a <code>asyncio</code>-native automation library (pydoll). My main goal was to build a 100% type-safe API on top of the chaotic Chrome DevTools Protocol. meant engineering a type-safe core by mapping th...

#### **Read full article:**

https://www.reddit.com/r/Python/comments/1okypr5/my typesafe asyncio lib and the fingerprinting/

# Leaker reveals which Pixels are vulnerable to Cellebrite phone hacking



Summary: <a href="https://news.ycombinator.com/item?id=45766501">Comments</a>

Read full article:

https://arstechnica.com/gadgets/2025/10/leaker-reveals-which-pixels-are-vulnerable-to-cellebrite-phone-hacking/

# **Epigenetics in neurodegeneration: Emerging biomarkers and translational insights**



**Summary:** Publication date: 15 December 2025<b>Source:</b> Brain Research, Volume 1869Author(s): Hemraj Singh, Shaifali Gurjar, Rajeev Taliyan

https://www.sciencedirect.com/science/article/pii/S0006899325005682?dgcid=rss\_sd\_all

Integrated cortical and plasma proteomic analysis of <em>Cntnap2</em> knockout mice and human models of autism spectrum disorder: Potential involvement of galectin-3-binding protein





Summary: Publication date: 28 November 2025<b>Source:</b> Neuroscience, Volume 589Author(s): Leandro Val Sayson, Hyun Jun Lee, Nicole Bon Campomayor, Sweetie Balataria, Mikyung Kim, Ara Cho, Eugene C. Yi, Chae Rim Lee, Bung-Nyun Kim, Jae Hoon Cheong, Hee Jin Kim

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https://www.sciencedirect.com/science/article/pii/S0306452225009820?dgcid=rss sd all

# Sex differences in response to kanamycin-induced ototoxicity in C57BL/6 J mice







NATURE NEUROSCIENCE SUBJECTS



https://www.nature.com/articles/s41598-025-21962-y

# Spinal interneuron population dynamics underlying flexible pattern generation



**⊗** Read full article:

https://www.nature.com/articles/s41467-025-64629-y

# Astrocytes distress triggers brain pathology through induction of $\delta$ secretase in a murine model of Alzheimer's disease



https://www.nature.com/articles/s41467-025-65536-y

# The theory that woke scientists up to sleep



https://www.nature.com/articles/s44159-025-00511-4

# No effect of preliminarily simulated cathodal HD-tDCS on the frontopolar cortex in the exploration-exploitation task



**⊗** Read full article:

https://www.nature.com/articles/s41598-025-22016-z

# The role of amygdala reactivity in affective fluctuations across social contexts



https://www.nature.com/articles/s41598-025-22131-x

# Seeding Alzheimer's disease-associated tau pathology in MAPT knock-in primary neurons causes early axonopathy and synaptic dysfunction



**⊗** Read full article:

https://www.nature.com/articles/s41598-025-21920-8

# Attentional failures after sleep deprivation are locked to joint neurovascular, pupil and cerebrospinal fluid flow dynamics







NATURE NEUROSCIENCE

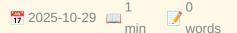
Summary: Nature Neuroscience, Published online: 29 October 2025; <a href="https://"><a href="https://"></a> www.nature.com/articles/s41593-025-02098-8">doi:10.1038/s41593-025-02098-8</a></ p>Yang et al. show that moments of failed attention we experience after sleep deprivation reflect brief 'sleep-like' episodes in the brain, corr...

#### 

https://www.nature.com/articles/s41593-025-02098-8

### This Week in The Journal









JOURNAL NEUROSCIENCE THIS WEEK

#### 

http://www.jneurosci.org/cgi/content/short/45/44/etwij45442025?rss=1

# **Social Reward Learning Deficits and Concordant Brain Alterations in Rats Overexpressing Disrupted-in-**Schizophrenia 1 (DISC1)

Dören, J., Kupriyanova, Y., Schäble, S., Trossbach, S., McGuire, B., Vernon, A. C., Roden, M., Korth, C., Kalenscher, T.







JOURNAL NEUROSCIENCE CURRENT

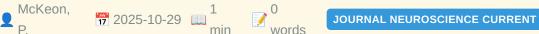
**Summary:** Social deficits are a hallmark of schizophrenia, often characterized by impairments in processing and integrating socially transmitted information. However, translational models that accurately capture these deficits remain scarce. The Disrupted-in-Schizophrenia 1 gene (<i>DISC1</i>), a key susce...



http://www.jneurosci.org/cgi/content/short/45/44/e1067252025?rss=1

#### This Week in The Journal











http://www.jneurosci.org/cgi/content/short/45/44/etwij45442025?rss=1

# Correction for Tapinova et al., Integrated Ising model with global inhibition for decision-making

1 15 PNAS NEUROSCIENCE words

**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 44, November 2025. <br/> <br/> />

https://www.pnas.org/doi/abs/10.1073/pnas.2528803122?af=R

# Can neuromorphic computing help reduce Al's high energy cost?



**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 44, November 2025. <br/> <br/>/>

https://www.pnas.org/doi/abs/10.1073/pnas.2528654122?af=R

# A functional clock in only two dorsal clock neurons is sufficient to restore the basal circadian activity pattern of Drosophila melanogaster

Nils ReinhardEnrico BertoliniTakuya KuwaharaManabu SekiguchiDirk RiegerWeihua LiPaul H. TaghertTaishi YoshiiCharlotte Helfrich-FörsteraNeurobiology and Genetics, Theodor-Boveri-Institute, Biocentre, Julius-Maximilians-University of Würzburg, Würzburg 97074, GermanybGraduate School of Natural Science and Technology, Okayama University, Okayama 700-8530, JapancDepartment of Neuroscience, Washington University School of Medicine, St. Louis, MO 63105dGraduate School of Environmental, Life, Natural Science and Technology, Okayama University, Okayama 700-8530, Japan



**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 44, November 2025. <br/>
SignificanceCircadian clocks orchestrate animal behavior and physiology to anticipate and adapt to recurring events. During development, circadian clock networks increase in complexity to meet the increasing ...

https://www.pnas.org/doi/abs/10.1073/pnas.2506164122?af=R

# The impact of CSF-filled cavities on scalp EEG and its **implications**

Maria Carla
Piastra

1
2024-06-14

min

64

words

OOSTENVELD ROBERT

Summary: Previous studies have found electroencephalogram (EEG) amplitude and scalp topography differences between neurotypical and neurological/neurosurgical groups, being interpreted at the cognitive level. However, these comparisons are invariably accompanied by anatomical changes. Critical to EEG are the...

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# Motion-BIDS: an extension to the brain imaging data structure to organize motion data for reproducible research



1 72 min words

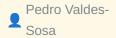
OOSTENVELD ROBERT

Summary: We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalitie...

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https://pubmed.ncbi.nlm.nih.gov/38956071/?

### One hundred years of EEG for brain and behaviour research







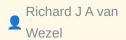
OOSTENVELD ROBERT

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# Freezing of gait in Parkinson's disease is related to imbalanced stopping-related cortical activity









OOSTENVELD ROBERT

Summary: Freezing of gait, characterized by involuntary interruptions of walking, is a debilitating motor symptom of Parkinson's disease that restricts people's autonomy. Previous brain imaging studies investigating the mechanisms underlying freezing were restricted to scan people in supine positions and yie...

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https://pubmed.ncbi.nlm.nih.gov/39229492/?

# The past, present, and future of the brain imaging data structure (BIDS)

Krzysztof J
Gorgolewski

Sorgolewski

Gorgolewski

Sorgolewski

Sorgolewski

Sorgolewski

Sorgolewski

Sorgolewski

Sorgolewski

Summary: The Brain Imaging Data Structure (BIDS) is a community-driven standard for the organization of data and metadata from a growing range of neuroscience modalities. This paper is meant as a history of how the standard has developed and grown over time. We outline the principles behind the project, the ...

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# **Human cortical high-gamma power scales with movement** rate in healthy participants and stroke survivors

1 65 min words

OOSTENVELD ROBERT

Summary: Motor cortical high-gamma oscillations (60-90 Hz) occur at movement onset and are spatially focused over the contralateral primary motor cortex. Although high-gamma oscillations are widely recognized for their significance in human motor control, their precise function on a cortical level remains el...

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https://pubmed.ncbi.nlm.nih.gov/39786979/?

## NIRS-BIDS: Brain Imaging Data Structure Extended to Near-**Infrared Spectroscopy**

Luca 1 70
Pollonini 2025-01-27 min words

OOSTENVELD ROBERT

Summary: Functional near-infrared spectroscopy (fNIRS) is an increasingly popular neuroimaging technique that measures cortical hemodynamic activity in a non-invasive and portable fashion. Although the fNIRS community has been successful in disseminating open-source processing tools and a standard file forma...

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# Pseudonymisation of neuroimages and data protection: <em>Increasing access to data while retaining scientific utility</em>



Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld robert

Oostenveld robert

**Summary:** For a number of years, facial features removal techniques such as 'defacing', 'skull stripping' and 'face masking/blurring', were considered adequate privacy preserving tools to openly share brain images. Scientifically, these measures were already a compromise between data protection requirements a...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40568426/?

## Cycling on the Freeway: The perilous state of open-source neuroscience software

Tim M
Tierney

Summary: Most scientists need software to perform their research (Barker et al., 2020; Carver et al., 2022; Hettrick, 2014; Hettrick et al., 2014; Switters & Osimo, 2019), and neuroscientists are no exception. Whether we work with reaction times, electrophysiological signals, or magnetic resonance imaging data, ...

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## Optimal configuration of on-scalp OPMs with fixed channel counts









OOSTENVELD ROBERT

Summary: Recent technological developments have brought optically pumped magnetometers (OPMs) within reach of the larger neuroscientific community. The current state-of-the-art consists of whole-head systems that measure the magnetic field at >100 locations. OPM sensors can be constructed to measure the fiel...

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https://pubmed.ncbi.nlm.nih.gov/40800964/?

# Six-Month Interim Analyses of the Efficacy of Repeated Low-**Level Red-Light Therapy Combined with Orthokeratology for Myopia Control in Spanish Children**

Fernando J Fernández-

1 28 min words

LOW VISION

Summary: CONCLUSIONS: The six-month interim analysis indicates that combining RLRL therapy with OK effectively controls myopia progression in Spanish children, with no severe adverse effects. Long-term follow-up is ongoing.

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# Predictors of posttraumatic stress disorder among displaced families in Lebanon: A cross-sectional study







LOW VISION

Summary: This study aimed to assess the prevalence of posttraumatic stress disorder (PTSD) among Lebanese individuals internally displaced by the recent conflict and to identify key predictors of PTSD. The findings are intended to guide targeted policy and advocacy strategies aimed at improving mental health...

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# Incidental ocular surface squamous neoplasia in pterygia: a systematic review and meta-analysis

Clara C Chan

1 47 min words

LOW VISION

Summary: CONCLUSIONS: This meta-analysis, based on low- to very low-certainty evidence, identified a 1.32% pooled prevalence of incidental OSSN in clinically diagnosed pterygia, highlighting the potential influence of UV exposure and equatorial proximity. The overlap in demographic and lesion characteristics...

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# The Hidden Benefits of Noise: Low-Frequency tRNS and **Dynamic Visual Noise Enhance Visual Processing**

Hulusi Kafaligonul 1 70 min words

**LOW VISION** 

Summary: Sensory and perceptual processing is inherently shaped by both internal and external noise sources. While noise is typically seen as disruptive, it can, under certain conditions, enhance the detection of weak sensory signals-a phenomenon known as stochastic resonance (SR). Research on SR has primari...

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### **Headaches due to Low and High Intracranial Pressure**

1 63 words

LOW VISION

Summary: This article provides a comprehensive overview of high-pressure and lowpressure headaches, focusing on their pathophysiology, clinical presentation, diagnosis, and management. High-pressure headaches, often linked to idiopathic intracranial hypertension, primarily affect young women and can lead to...

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# **Synergistic Charge Generation and Collection Enabled by Incorporation of Crystalline Polymer for Ultrafast-Response Dual-Band Perovskite/Organic Photodetectors**

Aung Ko Ko

2025-10-31 min 66 words

**LOW VISION** 

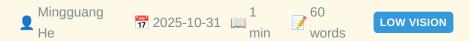
Summary: Dual-band photodetectors (PDs) capable of selectively responding to both visible and near-infrared (NIR) light are essential for applications in optical communication, medical diagnostics, and artificial vision systems. In this work, we report a highperformance visible/NIR dual-band PD based on a v...

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# Diabetic retinopathy screening in Australian general practice: persistently low uptake despite national guidelines and equity initiatives



**Summary:** CONCLUSION: Despite national guidelines, GP-led DR screening uptake remains low, with substantial geographic, demographic and temporal disparities in Australian general practice settings. Addressing systemic barriers, strengthening GP-led screening, and implementing targeted interventions are crucia...

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# **Rare Ocular Complication After Prone Position Surgery: Bilateral Subconjunctival Hemorrhage Following Endoscopic Lumbar Discectomy**









Summary: Subconjunctival hemorrhage (SCH) is a rare complication in spinal surgery and is even more uncommon in endoscopic procedures, which are typically of short duration. We report the case of a 32-year-old male who developed bilateral SCH after an uneventful L4-L5 lumbar endoscopic discectomy performed u...

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# A Rare Co-Occurrence of Gastric Heterotopia and Autonomic **Nervous System Dysfunction: An Attempt to Explain If There** Is a Need to Explore Possible Syndromic Link

Mohamed H
Ahmed

1 62 Low VISION min words

Summary: Gastric heterotopia (GHT) is the presence of gastric mucosa outside the stomach, including in the rectum. A 59-year-old man presented with rectal bleeding and altered bowel habits, along with long-standing low blood pressure and erectile dysfunction. Investigations confirmed rectal GHT, initially ma...

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## Ocular Syphilis in an Immunocompetent Patient: Through the Lens

1 72 Low VISION min words

Summary: Ocular manifestations of syphilis can occur at any stage of the disease and present with a wide range of clinical features. If left untreated, they carry a high risk of permanent vision loss. Although syphilis mainly affects individuals with human immunodeficiency virus (HIV) positive and other immu...

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# The taste of trigeminal sensations: relation between taste, lingual tactile acuity, and spicy perception in patients with taste dysfunction

Thomas
Hummel

Thomas

Tactile Acuity

Thomas

Summary: In the oral cavity, oral stereognosis and chemesthesis refer to the abilities to recognize shapes and detect noxious substances, respectively, through various receptors distributed on the tongue. The absence of standardized methods to assess oral somatosensory perception has led to a lack of consens...

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# **Measuring the Distribution of Tactile Acuity at the Index Finger and Thumb Fingertips**

Hiroyuki

1 75
min words

TACTILE ACUITY

Summary: In our day-to-day activities, we utilize not only the pads of our fingers but also the sides and hemispherical tips when manipulating objects. For teleoperation systems to replicate these real-life interactions, tactile sensation must be presented and distributed across the entire fingertip. Thus, u...

#### Read full article:

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# Optimizing Vibrotactile Feedback for Sensory Substitution in the Thigh: Spatial Acuity and Frequency Characteristics

Leah R

Bent

1

2025-06-27

min

69

words



TACTILE ACUITY

**Summary:** Amputation of a lower limb not only affects mobility but also interferes with sensory feedback, leading to an elevated risk of falls among individuals living with amputation. Sensory substitution, achieved through tactile displays embedded in transfemoral prosthetic sockets, presents a promising non...

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# Directional vibro-tactile hazard warnings for drivers with vision impairments



Alex R

Bowers

1

80

min

words





TACTILE ACUITY

Summary: Vision impairment may delay responses to hazards when driving. In a proof-ofconcept driving simulator study, we evaluated a hazard warning device designed for vision impaired drivers. Three groups participated: 11 persons with central vision loss (CVL; median age 60 years), 12 with homonymous field...

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https://pubmed.ncbi.nlm.nih.gov/40601880/?

# Sensitivity and vagal reactivity to C-tactile-mediated affective touch in mild cognitive impairment due to Alzheimer's disease







Summary: BackgroundC-tactile (CT) afferents preferentially activate in response to slow caress-like touch, evoking a diffuse pleasant sensation and promoting autonomic regulation. According to Braak's classic model, the neurodegenerative process in Alzheimer's disease (AD) only affects somatosensory cortices...

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# Differences in tactile grid localization accuracy between people with back pain compared to individuals without pain









**Summary:** OBJECTIVES: The study aimed to investigate the grid localization test (GLT) between patients with lower back pain and those without back pain.

#### 

https://pubmed.ncbi.nlm.nih.gov/40850311/?

# **Eye Drop Instillation Success and Hand Function in Adults** with Glaucoma: A Pilot Study

Paula Anne Newman-Casev

1 74 TACTILE ACUITY words

Summary: CONCLUSIONS: Despite hand function deficits, in this exploratory pilot study, adults with glaucoma demonstrated eye drop instillation success comparable to those without glaucoma, though with higher rates of bottle tip contact with the eye, skin, or eyelashes, suggesting an increased risk of potenti...

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# Functional evidence for early origin of tactile acuity in the vertebrate somatosensory system

Sviatoslav N Bagriantsev

1 2025-09-13 min 58 words

TACTILE ACUITY

Summary: Mammals and reptiles possess a sophisticated somatosensory system for precise tactile discrimination via mechanosensory end-organs, such as Meissner and Pacinian corpuscles and others. These structures detect sustained pressure, velocity, and vibrations, thereby facilitating nuanced environmental in...

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https://pubmed.ncbi.nlm.nih.gov/40945511/?

# The coarse mental map of the breast is anchored on the nipple

Charles M

Greenspon

1

86

min

words

TACTILE ACUITY

Summary: Touch plays a key role in our perception of our body and shapes our interactions with the world, from the objects we manipulate to the people we touch. While the tactile sensibility of the hand has been extensively characterized, much less is known about touch on other parts of the body. Despite the...

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# **Haptic Feedback Systems for Lower-Limb Prosthetic** Applications: A Review of System Design, User Experience, and Clinical Insights









TACTILE ACUITY

Summary: Systems presenting haptic information have emerged as an important technological advance in assisting individuals with sensory impairments or amputations, where the aim is to enhance sensory perception or provide sensory substitution through tactile feedback. These systems provide information on lim...

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https://pubmed.ncbi.nlm.nih.gov/41007234/?

# A Biomimetic Fiber-Entangled Permeable Electronic Skin for Strain-Insensitive and High-Resolution Tactile Sensing









Summary: Electronic skins (e-skins) incorporating island architectures represent a promising platform for strain-insensitive tactile sensing by mechanically decoupling sensing units from deformations. However, conventional island designs encounter stress concentration issues caused by inherent modulus mismat...

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# **High-Density Tactile Sensor Array for Sub-Millimeter Texture** Recognition











Summary: High-density tactile sensor arrays that replicate human touch could restore texture perception in paralyzed individuals. However, conventional tactile sensor arrays face inherent trade-offs between spatial resolution, sensitivity, and crosstalk suppression due to microstructure size limitations and ...

#### 

https://pubmed.ncbi.nlm.nih.gov/40871941/?

# A Diachronic Investigation of the Change in Form and Formational-Semantic Systematicity of the Chinese Sign Language Lexicon



**Summary:** It has been argued in previous research that several competing pressures guide the directions of language evolution (economy vs. redundancy; arbitrariness vs. systematicity). For sign languages, however, the effects of competing pressures on their change of lexical systems remain largely unclear. In...

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# Wireless Electrotactile System with Hydrogel-Based Electrodes for Conformal Tactile Interaction



**Summary:** A wireless epidermal electrotactile interface is demonstrated through integration of skin-conformal electrodes and flexible circuitry, addressing existing limitations in haptic technology caused by mechanical mismatch and system-level integration challenges. This electrotactile system achieves low s...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40891563/?

# Beyond access: rethinking assistive technology for individuals with visual impairments in Türkiye

Önder

1 55 min words



Summary: CONCLUSION: Despite demonstrating adaptability, individuals with VI in Türkiye face significant structural barriers to equitable AT access. Informal learning limited public support, and a lack of locally adapted tools contribute to digital exclusion. A rightsbased approach-emphasizing inclusive fun...

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# High prevalence of bacterial STI, anal HPV, cytological abnormalities and anal lesions among MSM in Togo, 2021: a baseline analysis of the ANRS I MIE 12,400/DepIST-H cohort



1 42 words





Summary: CONCLUSIONS: These findings emphasize the high prevalence of STIs among MSM and confirm the unusual distribution of HPV types in West Africa, with HPV35 being highly prevalent. A national strategy regarding STI screening and HPV vaccination in this key population is needed.

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41013315/?

# Development and Assessment of a Novel Audiosensory Performance Method for Improving the Oral Health of Visually Impaired Children



**Summary:** This study evaluated the effectiveness of an audiosensory performance method in enhancing oral health knowledge and status among visually impaired children aged 6-12 years in the National Capital Region (NCR), Delhi. An interventional study design was used, involving 251 participants equally divided...

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https://pubmed.ncbi.nlm.nih.gov/41041413/?

# **Examining the ability of the interRAI communication** collaborative action plan to identify individuals with sensory challenges: A retrospective cohort study











Summary: CONCLUSIONS: The communication CAP was robust in flagging individuals with sensory impairments as these individuals are more likely to fall into the triggered to facilitate improvement group. The three case studies highlight the importance of assessing all aspects of communication (e.g., cognitive, ...

#### 

https://pubmed.ncbi.nlm.nih.gov/41127342/?

# **Analysis of Stability and Functionality of Coil and** Piezoelectric Braille Modules Under Varying Temperature Conditions



Robert P 1 2025-10-29 min 73 BRAILLE

Summary: In this study, the performance and reliability of two different types of Braille modules, i.e., coil and piezoelectric, under varying temperature conditions were compared. The coil module works on the principle of electromagnetic forces generated by coils, while the piezoelectric module is based on ...

#### **⊗** Read full article:

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# Challenges faced by visually impaired individuals from the perspective of faculty members: a phenomenological study









Summary: Visually impaired students in higher education face significant academic, social, and psychological barriers that are often overlooked by faculty. This phenomenological study explored these challenges at Hail University, Saudi Arabia, by purposively sampling six faculty members from the Colleges of ...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41169919/?

# Non-invasive brain stimulation combined with three rehabilitation approaches for cognitive and emotional well-being in Parkinson's patients



**Summary:** CONCLUSION: This study demonstrates that non-invasive brain stimulation combined with cognitive rehabilitation (CR) is the most effective approach for improving cognitive function in Parkinson's patients, while combined motor-cognitive rehabilitation (MCR) shows particular efficacy for emotional wel...

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# Precision Neuromodulation for Diabetes-Associated **Cognitive Decline: a Transcranial Electrical Stimulation Approach**







Summary: CONCLUSION: These findings indicate that tDCS presents a promising, noninvasive therapeutic approach. It demonstrates potential for enhancing cognitive function in patients with DACD and for facilitating improved long-term glycemic control. This highlights the role of brain neuromodulation as a com...

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# The Hidden Benefits of Noise: Low-Frequency tRNS and **Dynamic Visual Noise Enhance Visual Processing**









TDCS TACS TRNS

Summary: Sensory and perceptual processing is inherently shaped by both internal and external noise sources. While noise is typically seen as disruptive, it can, under certain conditions, enhance the detection of weak sensory signals-a phenomenon known as stochastic resonance (SR). Research on SR has primari...

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# A Comprehensive Review of Trigeminal Autonomic Cephalalgias







TDCS TACS TRNS

**Summary:** Trigeminal autonomic cephalalgias (TACs) are a distinct group of primary headache disorders characterized by unilateral pain and autonomic symptoms such as tearing, nasal congestion, and ptosis. This article provides an in-depth review of the different TAC subtypes, including cluster headache, short...

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# Effects on nonverbal numerical acuity performance after a single-session transient random noise stimulation over the intraparietal sulcus or dorsolateral prefrontal cortex









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## Post-discharge use of opioids, psychostimulants, and treatment medications following residential opioid discontinuation with NET Device™ monotherapy







TDCS TACS TRNS

Summary: CONCLUSIONS: The randomized groups did not differ on outcomes. However, participants who self-administered active NET Device stimulation >24 hours reported significantly fewer post-discharge days of opioid or psychostimulant use than those who self-administered active <24 hours or sham, but these fi...

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https://pubmed.ncbi.nlm.nih.gov/41169495/?

## Anodal transcranial direct current stimulation does not alter GABA concentration or functional connectivity in the normal visual cortex







TDCS TACS TRNS

Summary: INTRODUCTION: Anodal direct current stimulation (a-tDCS) of the visual cortex is a potential rehabilitation tool for vision disorders such as amblyopia and macular degeneration. However, the underlying neural mechanisms are currently unknown. When applied to the human motor cortex, a-tDCS reduces th...

#### 

https://pubmed.ncbi.nlm.nih.gov/41169746/?

Can exercise therapy combined with transcranial direct current stimulation further improve balance ability in individuals with chronic ankle instability? A systematic review and meta-analysis







TDCS TACS TRNS

Summary: CONCLUSION: tDCS provides therapeutic benefits for dynamic balance only when combined with non-balance exercises. Current evidence is insufficient to demonstrate improvements in static balance with tDCS adjunctive therapy.

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### **Physical Therapy for Addiction**







TDCS TACS TRNS

Summary: Physical therapy has the evidence-based scientific knowledge to address a wide range of physical and psychological problems of addiction. Neuromodulation techniques, including transcranial electrical stimulation (tES) methods like transcranial direct current stimulation (tDCS), transcranial alternat...

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https://pubmed.ncbi.nlm.nih.gov/41171569/?

The Effects of Transcranial Direct Current Stimulation Over the Prefrontal Cortex on Reactive Aggressive Behavior in Healthy Volunteers: A Systematic Review and Meta-analysis of Randomized Controlled Trials







TDCS TACS TRNS

Summary: CONCLUSION: While the overall analysis did not show a significant effect of anodal on reactive aggressive behavior in healthy volunteers, the results suggest that online tDCS and unilateral tDCS may have a potential impact. Given the heterogeneity of the studies and outcome measures, further researc...

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https://pubmed.ncbi.nlm.nih.gov/41172252/?

## A Study on Hemodynamic and Brain Network Characteristics During Upper Limb Movement in Children with Cerebral Hemiplegia Based on fNIRS



**Summary:** Background: Hemiplegic cerebral palsy (HCP) is a motor dysfunction disorder resulting from perinatal developmental brain injury, predominantly impairing upper limb function in children. Nonetheless, there has been insufficient research on the brain activation patterns and inter-brain coordination me...

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## Task-Dependent Neural Activity in the Posterior Parietal **Cortex Is Associated with Better Balance in Adults with Acquired Brain Injury**











Summary: Background/Objectives: There is scarce evidence on the neural underpinnings of balance in people with chronic acquired brain injury (ABI). Thus, the objective was to measure this in adults with ABI during four balance tasks and to examine the relationship between neural activity and balance performa...

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# Medication vs. Movement in ADHD: Interaction Between Medication and Physical Activity on Neurocognitive Functioning



**Summary:** Background/Objectives: Movement during attention-demanding tasks may help compensate for cortical under-arousal in pediatric ADHD patients. However, the influence of medication during movement is unknown. This study assessed the impact of concurrent movement during executive functioning tasks on dor...

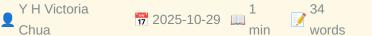
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## A Systematic Review of Inter-Brain Synchrony and Psychological Conditions: Stress, Anxiety, Depression, **Autism and Other Disorders**









**Summary:** CONCLUSIONS: Collectively, the findings support IBS as a potentially dynamic, condition-sensitive, and contextually modulated neurophysiological indicator of interpersonal functioning, with implications for diagnostics, intervention design, and the advancement of social neuroscience in clinical sett...

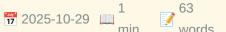
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## **DrSVision: A Machine Learning Tool for Cortical Region-**Specific fNIRS Calibration Based on Cadaveric Head MRI











Summary: Functional Near-Infrared Spectroscopy is (fNIRS) a non-invasive neuroimaging technique that monitors cerebral hemodynamic responses by measuring near-infrared (NIR) light absorption caused by changes in oxygenated and deoxygenated hemoglobin concentrations. While fNIRS has been widely used in cognit...

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## Early Motor Cortex Connectivity and Neuronal Reactivity in **Intracerebral Hemorrhage: A Continuous-Wave Functional Near-Infrared Spectroscopy Study**







Summary: Insights into motor cortex remodeling may enable the development of more effective rehabilitation strategies during the acute phase. We aim to assess the affected and unaffected motor/premotor/somatosensory cortex resting state functional connectivity (RSFC) and reactivity with continuous wave funct...

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## Individual abilities to estimate levels of movement synchrony predict action observation network activation











Summary: Observers' ability to estimate levels of movement synchrony, such as in Olympic diving or rowing, is highly variable and, in part, constrained by personality traits and enjoyment of the movements. Embodiment also appears to play a crucial role, whereby stronger beliefs that one's body can complete p...

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The effects of combining anodal transcranial direct current stimulation with robot-assisted gait training on lower limb motor function and the motor cortex regulation of stroke patients



**Summary:** CONCLUSIONS: The combination of anodal tDCS and RAGT can enhance lower limb motor function in stroke patients, while also modulating the connectivity within the motor network. Additionally, the elevation of functional connectivity between the bilateral cerebral hemispheres, quantifiable through fNIR...

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## The Impact of Sports Experience on Map Symbol **Representation in Orienteering Athletes and Its Neural Correlates: Evidence from Eye-Tracking and fNIRS**











Summary: CONCLUSION: High-level orienteering athletes exhibit domain-specific cognitive advantages in map symbol representation tasks. Long-term orienteering map reading training facilitates synergistic interactions between visual and neural information processing.

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# The Impact of Teachers' Autonomy Support on Students' Academic Performance from the Perspective of Hyperscanning: the Mediating Role of Autonomy Need Satisfaction



**Summary:** Previous research on self-determination theory has primarily focused on analyzing experiences and behaviors, without fully elucidating the neural basis of how teacher autonomy support influences students' academic performance. In this study, four individuals were selected to act as teachers, while 4...

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## **Fatal Isolated Right Ventricular Rupture Without External Chest Injury in a Young Driver: Forensic Autopsy Findings** After a One-Sided Vehicle Collision







BRAIN COMPUTER INTERFACE

**Summary:** Traumatic deaths are common, with cardiac trauma affecting 7–12% of patients with thoracic injuries. Blunt cardiac injury (BCI), although rare, is associated with a high mortality rate. This report presents a case of blunt cardiac rupture (BCR) observed at autopsy despite the absence of external che...

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## Comparative analysis across diverse plant species reveals superior antibiofilm efficacy and dose-dependency of root extracts compared to leaf extracts







BRAIN COMPUTER INTERFACE

Summary: Although both root- and leaf-derived plant extracts hold potential as antibiofilm agents, research has predominantly focused on leaf tissues. In this study, we systematically compared the antibiofilm efficacy of 158 root and 248 leaf extracts from 360 plant species across five concentrations (0.1, 0...

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## An Active, Multimodal Neural Interface for Real-Time Monitoring of Cortical Electrical, Thermal, and Optical **Dynamics**







BRAIN COMPUTER INTERFACE

Summary: Chronic neurophysiological monitoring devices facilitate the timely diagnosis and treatment of episodic or recurrent neurological disorders. Compared with passive electrodes, silicon-based active transistors provide intrinsic signal amplification and, when combined with capacitive-coupling measureme...

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## Feasibility of decoding cerebellar movement-related potentials for brain-computer interface applications









BRAIN COMPUTER INTERFACE

Summary: 
In Brain-Computer Interface (BCI) applications, signals are conventionally acquired from the cerebrum, and only a subset of the complex interactions that occur in several areas of the brain are collected. One area that has not been investigated for BCI application is the cerebellum, despite its...

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## Acute Effects of Portable Dry-EEG Neurofeedback on **Classical Chinese Learning: A Three-Arm Repeated-Measures** Study







BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: Portable dry-electrode EEG systems can reliably support realtime neurofeedback to enhance attention and cognitive control in complex language learning contexts. This study provides empirical validation for deploying dry-EEG sensors in adaptive educational technologies and contributes t...

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## The effect of perceived auditory feedback on speech Brain-**Computer Interface decoding performance**







BRAIN COMPUTER INTERFACE

Summary: OBJECTIVE: Brain-Computer Interfaces (BCI) provide alternative means of communication for individuals with severe motor impairment. Implantable speech BCIs have shown great potential, particularly in individuals who could still produce some speechrelated movements and/or sounds. As perception of au...

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## The influence of different visual eccentricity on SSVEPs elicited by ultra-low frequency visual stimulation in the lower peripheral visual field

Xiaogang 1 70
Chen min words

BRAIN COMPUTER INTERFACE

Summary: Steady-state visual evoked potential (SSVEP)-based brain-computer interfaces (BCIs) have been widely explored due to their high information transfer rate (ITR) and minimal training requirements. Traditional SSVEP-based BCIs typically use low- and medium-frequency visual stimuli from the central visu...

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## Towards neuroadaptive chatbots: a feasibility study

1 73 min words





BRAIN COMPUTER INTERFACE

Summary: INTRODUCTION: Large-language models (LLMs) are transforming most industries today and are set to become a cornerstone of the human digital experience. While integrating explicit human feedback into the training and development of LLM-based chatbots has been integral to the progress we see nowadays, ...

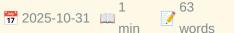
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## A Novel Binocular-Encoded SSVEP Framework for Efficient **VR-Based Brain-Computer Interface**







BRAIN COMPUTER INTERFACE

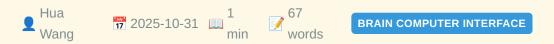
Summary: This paper presents a novel binocular-encoded SSVEP (beSSVEP) method, leveraging binocular vision in virtual reality (VR) to enhance brain-computer interface (BCI) applications. We introduce the Binocular Periodically Repeated Component Analysis (bPRCA) algorithm, designed to address the unique char...

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## A novel channel reduction concept to enhance the classification of motor imagery tasks in brain-computer interface systems



**Summary:** Electroencephalogram (EEG) signals play a critical role in advancing brain-computer interface (BCI) systems, particularly for detecting motor imagery (MI) movements. However, analysing large volume of EEG datasets faces some challenges due to redundant information, and performance degradation. Irrel...

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2+67771e2

## **Evidence for an Active Handoff between Hemispheres during Target Tracking**

1 2025-10-29 min Broschard, M. B., Roy, J. E., Brincat, S. L., Mahnke, M. K., Miller, E.

JOURNAL NEUROSCIENCE CURRENT

Summary: The brain has somewhat separate cognitive resources for the left and right sides of our visual field. Despite this lateralization, we have a smooth and unified perception of our environment. This raises the question of how the cerebral hemispheres are coordinated to transfer information between t...

http://www.jneurosci.org/cgi/content/short/45/44/e0841252025?rss=1

### **Attentional Mechanisms for Learning Feature Combinations**



1 0 min words

JOURNAL NEUROSCIENCE CURRENT

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http://www.jneurosci.org/cgi/content/short/45/44/e0784252025?rss=1

## **Exposure to Bullying Engages Social Distress Circuits in the Adolescent and Adult Brain**

Paranko, B., Garandeau, C. F., Seppälä, K., Putkinen, V., Santavirta, S., Hirvonen, J., Salmivalli, C., Nummenmaa, L.

JOURNAL NEUROSCIENCE CURRENT

1 218 min words

**Summary:** Despite advances in understanding the psychological and social consequences of peer victimization, the immediate effects of bullying on the central nervous system remain elusive. Here we mapped the neural, affective, and attentional responses to simulated bullying in adolescents and adults and te...

http://www.jneurosci.org/cgi/content/short/45/44/e0738252025?rss=1

## Alpha-Band Activity Tracks Reflexive Changes in the Breadth of the Zoom Lens of Attention

van Moorselaar, D., Theeuwes, J., Van der Stigchel,

1 184 min words

JOURNAL NEUROSCIENCE CURRENT

**Summary:** Spatial attention is often conceptualized as a flexible "zoom lens" that can dynamically adjust its focus, but most evidence stems from studies of voluntary attention. Our study investigates whether involuntary, reflexive attention exhibits similar adaptability in attentional scope. Using behavio...

http://www.jneurosci.org/cgi/content/short/45/44/e0706252025?rss=1

## Rebound Bursting Selectively Enables Fast Dynamics in Dopamine Midbrain Neurons Projecting to the Dorsolateral Striatum

Stojanovic, S., Knowlton, C. J., Egger-Mackrodt, R., Mankel, J., Shin, J., Lammel, S., Canavier, C. C., Roeper, J.



**Summary:** Dopamine (DA) midbrain neurons are involved in a wide array of key brain functions including movement control and reward-based learning. They are also critical for major brain disorders such as Parkinson's disease or schizophrenia. DA neurons projecting to distinct striatal territories are ...



http://www.jneurosci.org/cgi/content/short/45/44/e0361252025?rss=1

## Linking Connectivity Dynamics to Symptom Severity and Cognitive Abilities in Children with Autism Spectrum Disorder: An FNIRS Study



**Summary:** Functional near-infrared spectroscopy (fNIRS) has emerged as a valuable tool for investigating neurobiological markers in children with autism spectrum disorder (ASD). While previous studies have identified abnormal functional connectivity in ASD children compared with typically developing (TD) p...



http://www.jneurosci.org/cgi/content/short/45/44/e0161252025?rss=1

## Spatiotemporal Dynamics of Lateral Na+ Diffusion in Apical **Dendrites of Mouse CA1 Pyramidal Neurons**

Nelson, J. S. E., Meyer, J., Gerkau, N. J., Kafitz, K. W., Ullah, G., Santamaria, F., Rose, C.

1 241 min words JOURNAL NEUROSCIENCE CURRENT

Summary: Sodium ions (Na<sup>+</sup>) are major charge carriers mediating neuronal excitation and play a fundamental role in brain physiology. Glutamatergic synaptic activity is accompanied by large transient Na<sup>+</sup> increases, but the spatiotemporal dynamics of Na<sup>+</sup> signals and propertie...

http://www.jneurosci.org/cgi/content/short/45/44/e0077252025?rss=1

### Bltp1 Is Required for Survival and Normal Development and Function of the Neuromuscular Junction in Mice

Liu, Y., Ye, Q., Ma, D. K., Rothermel, B. A., Lin,

W min 233

words

JOURNAL NEUROSCIENCE CURRENT

**Summary:** BLTP1 (Bridge-Like Lipid Transfer Protein Family Member 1), previously known as Tweek, Kiaa1109, FSA, or 4932438A13Rik, is a nonvesicular lipid transport protein linked to Alkuraya–Kučinskas syndrome (AKS), an autosomal recessive disorder with severe brain malformations and arthrogry...

http://www.jneurosci.org/cgi/content/short/45/44/e0029252025?rss=1

## Amyloid precursor protein and C99 are subunits in human microglial Hv1 channels that enhance current and inflammatory mediator release

Ruiming ZhaoPunyanuch SophanpanichkulJean Paul ChadarevianYiwen DingHui DaiMaha NayakHayk DavtyanMathew Blurton-JonesSteve A. N. GoldsteinaDepartment of Pediatrics, Susan and Henry Samueli College of Health Sciences, University of California Irvine, Irvine, CA 92697bDepartment of Physiology and Biophysics, Susan and Henry Samueli College of Health

Sciences, University of California Irvine, Irvine, CA 92697cDepartment of Pharmaceutical Sciences, Susan and Henry Samueli College of Health Sciences, University of California Irvine, Irvine, CA 92697dDepartment of Neurobiology and Behavior, Institute for Memory Impairments and Neurological Disorders, Sue and Bill Gross Stem Cell Research Center, University of California Irvine, Irvine, CA 92697



**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 43, October 2025. <br/>
SignificanceMicroglial-mediated neuroinflammation is strongly implicated in the development and progression of Alzheimer's disease (AD). Here we demonstrate that human induced pluripotent stem cell (iPSC)-micr...



https://www.pnas.org/doi/abs/10.1073/pnas.2509903122?af=R

### Large language models can extract metadata for annotation of human neuroimaging publications







FRONTIERS NEUROINFORMATICS

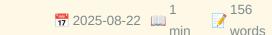
Summary: We show that recent (mid-to-late 2024) commercial large language models (LLMs) are capable of good quality metadata extraction and annotation with very little work on the part of investigators for several exemplar real-world annotation tasks in the neuroimaging literature. We investigated the GPT-4o...



https://www.frontiersin.org/articles/10.3389/fninf.2025.1609077

## A correlation-based tool for quantifying membrane periodic skeleton associated periodicity



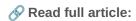






FRONTIERS NEUROINFORMATICS

Summary: IntroductionThe advent of super-resolution microscopy revealed the membraneassociated periodic skeleton (MPS), a specialized neuronal cytoskeletal structure composed of actin rings spaced 190 nm apart by two spectrin dimers. While numerous ion channels, cell adhesion molecules, and signaling protei...



https://www.frontiersin.org/articles/10.3389/fninf.2025.1628538

## Epileptic brain imaging by source localization CLARA supported by ictal-based semiology and VEEG in resource-limited settings

Aleksandra Kawala-Sterniuk 7 2025-08-29 min 279 words

FRONTIERS NEUROINFORMATICS

**Summary:** IntroductionAccurate localization of the epileptogenic zone is essential for surgical treatment of drug-resistant epilepsy. Standard presurgical evaluations rely on multimodal neuroimaging techniques, but these may be limited by availability and interpretive challenges. This study aimed to assess th...

https://www.frontiersin.org/articles/10.3389/fninf.2025.1661617

## VAE deep learning model with domain adaptation, transfer learning and harmonization for diagnostic classification from multi-site neuroimaging data



**Summary:** In large public multi-site fMRI datasets, the sample characteristics, data acquisition methods, and MRI scanner models vary across sites and datasets. This non-neural variability obscures neural differences between groups and leads to poor machine learning based diagnostic classification of neurodev...

https://www.frontiersin.org/articles/10.3389/fninf.2025.1553035

## Software and pipelines for registration and analyses of rodent brain image data in reference atlas space

Jan G. Bjaalie

1 207 min words

FRONTIERS NEUROINFORMATICS

Summary: Advancements in methodologies for efficient large-scale acquisition of highresolution serial microscopy image data have opened new possibilities for experimental studies of cellular and subcellular features across whole brains in animal models. There is a high demand for open-source software and wo...

https://www.frontiersin.org/articles/10.3389/fninf.2025.1629388

## CRISP: a correlation-filtered recursive feature elimination and integration of SMOTE pipeline for gait-based Parkinson's disease screening



1 255 min 255



FRONTIERS COMPUTATIONAL NEUROSCIENCE

**Summary:** IntroductionParkinson's disease (PD) is the fastest-growing neurodegenerative disorder, with subtle gait changes such as reduced vertical ground-reaction forces (VGRF) often preceding motor symptoms. These gait abnormalities, measurable via wearable VGRF sensors, offer a non-invasive means for early...

**Read full article:** 

https://www.frontiersin.org/articles/10.3389/fncom.2025.1660963

## Using noise to distinguish between system and observer effects in multimodal neuroimaging

Milan 1 196
Brázdil 2025-10-17 min words

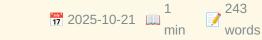
FRONTIERS COMPUTATIONAL NEUROSCIENCE

**Summary:** IntroductionIt has become increasingly common to record brain activity simultaneously at more than one spatiotemporal scale. Here, we address a central question raised by such cross-scale datasets: do they reflect the same underlying dynamics observed in different ways, or different dynamics observe...

https://www.frontiersin.org/articles/10.3389/fncom.2025.1693279

## An AI methodology to reduce training intensity, error rates, and size of neural networks

Thaddeus J. A.

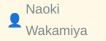


FRONTIERS COMPUTATIONAL NEUROSCIENCE

Summary: Massive computing systems are required to train neural networks. The prodigious amount of consumed energy makes the creation of AI applications significant polluters. Despite the enormous training effort, neural network error rates limit its use for medical applications, because errors can lead to i...

https://www.frontiersin.org/articles/10.3389/fncom.2025.1628115

### Revisiting the Model Human Processor: a neurophysiological investigation based on P300 and Bereitschaftspotential







FRONTIERS HUMAN NEUROSCIENCE

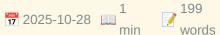
Summary: IntroductionThe Model Human Processor (MHP), while useful, lacks direct neurophysiological validation. This study aimed to validate and extend the MHP by analyzing P300 and Bereitschaftspotential (BP) brainwave components. Methods Our initial finding of qualitatively different neural signatures betwee...

#### 

https://www.frontiersin.org/articles/10.3389/fnhum.2025.1690746

## Hypertrophic olivary degeneration secondary to brain abscess: a case report and literature review







FRONTIERS HUMAN NEUROSCIENCE

**Summary:** IntroductionHypertrophic olivary degeneration (HOD) is a rare transsynaptic neurodegenerative disorder arising from disruption of the Guillain-Mollaret triangle (GMT), a neural circuit critical for motor coordination. Classical clinical presentation includes palatal tremor. While cerebrovascular eti...



https://www.frontiersin.org/articles/10.3389/fnhum.2025.1674100

## TSLNet: a hierarchical multi-head attention-enabled twostream LSTM network for accurate pedestrian tracking and behavior recognition

1 161 min words

FRONTIERS NEUROROBOTICS

Summary: Accurate pedestrian tracking and behavior recognition are essential for intelligent surveillance, smart transportation, and human-computer interaction systems. This paper introduces TSLNet, a Hierarchical Multi-Head Attention-Enabled Two-Stream LSTM Network, designed to overcome challenges such as e...

**⊗** Read full article:

https://www.frontiersin.org/articles/10.3389/fnbot.2025.1663565

## A simple robot suggests trunk rotation is essential for emergence of inside leading limb during quadruped galloping turns

Akio 1 223
Ishiguro min words

FRONTIERS NEUROROBOTICS

Summary: During turning maneuvers in the galloping gait of quadruped animals, a strong relationship exists between the turning direction and the sequence in which the forelimbs make ground contact: the outer forelimb acts as the "trailing limb" while the inner forelimb serves as the "leading limb." However, ...

Read full article:

https://www.frontiersin.org/articles/10.3389/fnbot.2025.1628368

## The impact of CSF-filled cavities on scalp EEG and its **implications**

Maria Carla
Piastra

1
2024-06-14

min

64

words

OOSTENVELD ROBERT

Summary: Previous studies have found electroencephalogram (EEG) amplitude and scalp topography differences between neurotypical and neurological/neurosurgical groups, being interpreted at the cognitive level. However, these comparisons are invariably accompanied by anatomical changes. Critical to EEG are the...

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## Motion-BIDS: an extension to the brain imaging data structure to organize motion data for reproducible research



1 72 min words

OOSTENVELD ROBERT

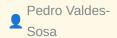
Summary: We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalitie...

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### One hundred years of EEG for brain and behaviour research







OOSTENVELD ROBERT

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## Freezing of gait in Parkinson's disease is related to imbalanced stopping-related cortical activity







OOSTENVELD ROBERT

Summary: Freezing of gait, characterized by involuntary interruptions of walking, is a debilitating motor symptom of Parkinson's disease that restricts people's autonomy. Previous brain imaging studies investigating the mechanisms underlying freezing were restricted to scan people in supine positions and yie...

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## The past, present, and future of the brain imaging data structure (BIDS)

Krzysztof J
Gorgolewski

Sorgolewski

Gorgolewski

Sorgolewski

Sorgolewski

Sorgolewski

Sorgolewski

Sorgolewski

Sorgolewski

Summary: The Brain Imaging Data Structure (BIDS) is a community-driven standard for the organization of data and metadata from a growing range of neuroscience modalities. This paper is meant as a history of how the standard has developed and grown over time. We outline the principles behind the project, the ...

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## **Human cortical high-gamma power scales with movement** rate in healthy participants and stroke survivors

1 65 min words

OOSTENVELD ROBERT

Summary: Motor cortical high-gamma oscillations (60-90 Hz) occur at movement onset and are spatially focused over the contralateral primary motor cortex. Although high-gamma oscillations are widely recognized for their significance in human motor control, their precise function on a cortical level remains el...

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## NIRS-BIDS: Brain Imaging Data Structure Extended to Near-**Infrared Spectroscopy**

Luca 1 70
Pollonini 2025-01-27 min words

OOSTENVELD ROBERT

Summary: Functional near-infrared spectroscopy (fNIRS) is an increasingly popular neuroimaging technique that measures cortical hemodynamic activity in a non-invasive and portable fashion. Although the fNIRS community has been successful in disseminating open-source processing tools and a standard file forma...

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## Pseudonymisation of neuroimages and data protection: <em>Increasing access to data while retaining scientific utility</em>



Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld robert

Oostenveld robert

**Summary:** For a number of years, facial features removal techniques such as 'defacing', 'skull stripping' and 'face masking/blurring', were considered adequate privacy preserving tools to openly share brain images. Scientifically, these measures were already a compromise between data protection requirements a...

#### Read full article:

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## Cycling on the Freeway: The perilous state of open-source neuroscience software

Tim M
Tierney

Summary: Most scientists need software to perform their research (Barker et al., 2020; Carver et al., 2022; Hettrick, 2014; Hettrick et al., 2014; Switters & Osimo, 2019), and neuroscientists are no exception. Whether we work with reaction times, electrophysiological signals, or magnetic resonance imaging data, ...

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### Optimal configuration of on-scalp OPMs with fixed channel counts



1 69 min words





OOSTENVELD ROBERT

Summary: Recent technological developments have brought optically pumped magnetometers (OPMs) within reach of the larger neuroscientific community. The current state-of-the-art consists of whole-head systems that measure the magnetic field at >100 locations. OPM sensors can be constructed to measure the fiel...

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## Six-Month Interim Analyses of the Efficacy of Repeated Low-**Level Red-Light Therapy Combined with Orthokeratology for** Myopia Control in Spanish Children

Fernando J Fernández-

1 28 min words

LOW VISION

Summary: CONCLUSIONS: The six-month interim analysis indicates that combining RLRL therapy with OK effectively controls myopia progression in Spanish children, with no severe adverse effects. Long-term follow-up is ongoing.

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## Predictors of posttraumatic stress disorder among displaced families in Lebanon: A cross-sectional study



1 72 min words

LOW VISION

Summary: This study aimed to assess the prevalence of posttraumatic stress disorder (PTSD) among Lebanese individuals internally displaced by the recent conflict and to identify key predictors of PTSD. The findings are intended to guide targeted policy and advocacy strategies aimed at improving mental health...

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https://pubmed.ncbi.nlm.nih.gov/41166360/?

## Incidental ocular surface squamous neoplasia in pterygia: a systematic review and meta-analysis

Clara C Chan

1 47 min words

LOW VISION

Summary: CONCLUSIONS: This meta-analysis, based on low- to very low-certainty evidence, identified a 1.32% pooled prevalence of incidental OSSN in clinically diagnosed pterygia, highlighting the potential influence of UV exposure and equatorial proximity. The overlap in demographic and lesion characteristics...

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## The Hidden Benefits of Noise: Low-Frequency tRNS and **Dynamic Visual Noise Enhance Visual Processing**

Hulusi Kafaligonul 1 70 min words

**LOW VISION** 

Summary: Sensory and perceptual processing is inherently shaped by both internal and external noise sources. While noise is typically seen as disruptive, it can, under certain conditions, enhance the detection of weak sensory signals-a phenomenon known as stochastic resonance (SR). Research on SR has primari...

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https://pubmed.ncbi.nlm.nih.gov/41167815/?

### **Headaches due to Low and High Intracranial Pressure**

1 63 words

LOW VISION

Summary: This article provides a comprehensive overview of high-pressure and lowpressure headaches, focusing on their pathophysiology, clinical presentation, diagnosis, and management. High-pressure headaches, often linked to idiopathic intracranial hypertension, primarily affect young women and can lead to...

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## **Synergistic Charge Generation and Collection Enabled by Incorporation of Crystalline Polymer for Ultrafast-Response Dual-Band Perovskite/Organic Photodetectors**



2025-10-31 min 66 words



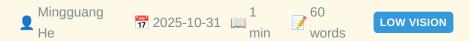
**LOW VISION** 

Summary: Dual-band photodetectors (PDs) capable of selectively responding to both visible and near-infrared (NIR) light are essential for applications in optical communication, medical diagnostics, and artificial vision systems. In this work, we report a highperformance visible/NIR dual-band PD based on a v...

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https://pubmed.ncbi.nlm.nih.gov/41169105/?

## Diabetic retinopathy screening in Australian general practice: persistently low uptake despite national guidelines and equity initiatives



**Summary:** CONCLUSION: Despite national guidelines, GP-led DR screening uptake remains low, with substantial geographic, demographic and temporal disparities in Australian general practice settings. Addressing systemic barriers, strengthening GP-led screening, and implementing targeted interventions are crucia...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41169341/?

## **Rare Ocular Complication After Prone Position Surgery: Bilateral Subconjunctival Hemorrhage Following Endoscopic Lumbar Discectomy**









Summary: Subconjunctival hemorrhage (SCH) is a rare complication in spinal surgery and is even more uncommon in endoscopic procedures, which are typically of short duration. We report the case of a 32-year-old male who developed bilateral SCH after an uneventful L4-L5 lumbar endoscopic discectomy performed u...

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https://pubmed.ncbi.nlm.nih.gov/41170305/?

## A Rare Co-Occurrence of Gastric Heterotopia and Autonomic **Nervous System Dysfunction: An Attempt to Explain If There** Is a Need to Explore Possible Syndromic Link



1 62 Low Vision min words



Summary: Gastric heterotopia (GHT) is the presence of gastric mucosa outside the stomach, including in the rectum. A 59-year-old man presented with rectal bleeding and altered bowel habits, along with long-standing low blood pressure and erectile dysfunction. Investigations confirmed rectal GHT, initially ma...

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## Ocular Syphilis in an Immunocompetent Patient: Through the Lens









Summary: Ocular manifestations of syphilis can occur at any stage of the disease and present with a wide range of clinical features. If left untreated, they carry a high risk of permanent vision loss. Although syphilis mainly affects individuals with human immunodeficiency virus (HIV) positive and other immu...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41170350/?

## A Biomimetic Fiber-Entangled Permeable Electronic Skin for Strain-Insensitive and High-Resolution Tactile Sensing



1 57 min words

Summary: Electronic skins (e-skins) incorporating island architectures represent a promising platform for strain-insensitive tactile sensing by mechanically decoupling sensing units from deformations. However, conventional island designs encounter stress concentration issues caused by inherent modulus mismat...

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## **High-Density Tactile Sensor Array for Sub-Millimeter Texture** Recognition



Min 1 64
Zhang min words

BRAILLE

Summary: High-density tactile sensor arrays that replicate human touch could restore texture perception in paralyzed individuals. However, conventional tactile sensor arrays face inherent trade-offs between spatial resolution, sensitivity, and crosstalk suppression due to microstructure size limitations and ...

#### 

https://pubmed.ncbi.nlm.nih.gov/40871941/?

## A Diachronic Investigation of the Change in Form and Formational-Semantic Systematicity of the Chinese Sign Language Lexicon



**Summary:** It has been argued in previous research that several competing pressures guide the directions of language evolution (economy vs. redundancy; arbitrariness vs. systematicity). For sign languages, however, the effects of competing pressures on their change of lexical systems remain largely unclear. In...

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## Wireless Electrotactile System with Hydrogel-Based Electrodes for Conformal Tactile Interaction



**Summary:** A wireless epidermal electrotactile interface is demonstrated through integration of skin-conformal electrodes and flexible circuitry, addressing existing limitations in haptic technology caused by mechanical mismatch and system-level integration challenges. This electrotactile system achieves low s...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40891563/?

## Beyond access: rethinking assistive technology for individuals with visual impairments in Türkiye

Önder

1 55 min words

Summary: CONCLUSION: Despite demonstrating adaptability, individuals with VI in Türkiye face significant structural barriers to equitable AT access. Informal learning limited public support, and a lack of locally adapted tools contribute to digital exclusion. A rightsbased approach-emphasizing inclusive fun...

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## High prevalence of bacterial STI, anal HPV, cytological abnormalities and anal lesions among MSM in Togo, 2021: a baseline analysis of the ANRS I MIE 12,400/DepIST-H cohort



1 42 min words

Summary: CONCLUSIONS: These findings emphasize the high prevalence of STIs among MSM and confirm the unusual distribution of HPV types in West Africa, with HPV35 being highly prevalent. A national strategy regarding STI screening and HPV vaccination in this key population is needed.

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41013315/?

## Development and Assessment of a Novel Audiosensory Performance Method for Improving the Oral Health of Visually Impaired Children



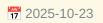
**Summary:** This study evaluated the effectiveness of an audiosensory performance method in enhancing oral health knowledge and status among visually impaired children aged 6-12 years in the National Capital Region (NCR), Delhi. An interventional study design was used, involving 251 participants equally divided...

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https://pubmed.ncbi.nlm.nih.gov/41041413/?

## **Examining the ability of the interRAI communication** collaborative action plan to identify individuals with sensory challenges: A retrospective cohort study









Summary: CONCLUSIONS: The communication CAP was robust in flagging individuals with sensory impairments as these individuals are more likely to fall into the triggered to facilitate improvement group. The three case studies highlight the importance of assessing all aspects of communication (e.g., cognitive, ...

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https://pubmed.ncbi.nlm.nih.gov/41127342/?

## **Analysis of Stability and Functionality of Coil and** Piezoelectric Braille Modules Under Varying Temperature Conditions



Robert P 1 2025-10-29 min 73 BRAILLE

Summary: In this study, the performance and reliability of two different types of Braille modules, i.e., coil and piezoelectric, under varying temperature conditions were compared. The coil module works on the principle of electromagnetic forces generated by coils, while the piezoelectric module is based on ...

#### **⊗** Read full article:

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## Challenges faced by visually impaired individuals from the perspective of faculty members: a phenomenological study









Summary: Visually impaired students in higher education face significant academic, social, and psychological barriers that are often overlooked by faculty. This phenomenological study explored these challenges at Hail University, Saudi Arabia, by purposively sampling six faculty members from the Colleges of ...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41169919/?

## Non-invasive brain stimulation combined with three rehabilitation approaches for cognitive and emotional well-being in Parkinson's patients



**Summary:** CONCLUSION: This study demonstrates that non-invasive brain stimulation combined with cognitive rehabilitation (CR) is the most effective approach for improving cognitive function in Parkinson's patients, while combined motor-cognitive rehabilitation (MCR) shows particular efficacy for emotional wel...

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https://pubmed.ncbi.nlm.nih.gov/41164398/?

## Precision Neuromodulation for Diabetes-Associated **Cognitive Decline: a Transcranial Electrical Stimulation Approach**







Summary: CONCLUSION: These findings indicate that tDCS presents a promising, noninvasive therapeutic approach. It demonstrates potential for enhancing cognitive function in patients with DACD and for facilitating improved long-term glycemic control. This highlights the role of brain neuromodulation as a com...

#### **⊗** Read full article:

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## The Hidden Benefits of Noise: Low-Frequency tRNS and **Dynamic Visual Noise Enhance Visual Processing**







TDCS TACS TRNS

Summary: Sensory and perceptual processing is inherently shaped by both internal and external noise sources. While noise is typically seen as disruptive, it can, under certain conditions, enhance the detection of weak sensory signals-a phenomenon known as stochastic resonance (SR). Research on SR has primari...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41167815/?

## A Comprehensive Review of Trigeminal Autonomic Cephalalgias







TDCS TACS TRNS

**Summary:** Trigeminal autonomic cephalalgias (TACs) are a distinct group of primary headache disorders characterized by unilateral pain and autonomic symptoms such as tearing, nasal congestion, and ptosis. This article provides an in-depth review of the different TAC subtypes, including cluster headache, short...

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## Effects on nonverbal numerical acuity performance after a single-session transient random noise stimulation over the intraparietal sulcus or dorsolateral prefrontal cortex









### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41168231/?

## Post-discharge use of opioids, psychostimulants, and treatment medications following residential opioid discontinuation with NET Device™ monotherapy







TDCS TACS TRNS

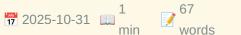
Summary: CONCLUSIONS: The randomized groups did not differ on outcomes. However, participants who self-administered active NET Device stimulation >24 hours reported significantly fewer post-discharge days of opioid or psychostimulant use than those who self-administered active <24 hours or sham, but these fi...

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https://pubmed.ncbi.nlm.nih.gov/41169495/?

## Anodal transcranial direct current stimulation does not alter GABA concentration or functional connectivity in the normal visual cortex







TDCS TACS TRNS

Summary: INTRODUCTION: Anodal direct current stimulation (a-tDCS) of the visual cortex is a potential rehabilitation tool for vision disorders such as amblyopia and macular degeneration. However, the underlying neural mechanisms are currently unknown. When applied to the human motor cortex, a-tDCS reduces th...

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https://pubmed.ncbi.nlm.nih.gov/41169746/?

Can exercise therapy combined with transcranial direct current stimulation further improve balance ability in individuals with chronic ankle instability? A systematic review and meta-analysis









Summary: CONCLUSION: tDCS provides therapeutic benefits for dynamic balance only when combined with non-balance exercises. Current evidence is insufficient to demonstrate improvements in static balance with tDCS adjunctive therapy.

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## **Physical Therapy for Addiction**





Junzhi 1 61 Wu min words





TDCS TACS TRNS

Summary: Physical therapy has the evidence-based scientific knowledge to address a wide range of physical and psychological problems of addiction. Neuromodulation techniques, including transcranial electrical stimulation (tES) methods like transcranial direct current stimulation (tDCS), transcranial alternat...

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https://pubmed.ncbi.nlm.nih.gov/41171569/?

The Effects of Transcranial Direct Current Stimulation Over the Prefrontal Cortex on Reactive Aggressive Behavior in Healthy Volunteers: A Systematic Review and Meta-analysis of Randomized Controlled Trials







TDCS TACS TRNS

Summary: CONCLUSION: While the overall analysis did not show a significant effect of anodal on reactive aggressive behavior in healthy volunteers, the results suggest that online tDCS and unilateral tDCS may have a potential impact. Given the heterogeneity of the studies and outcome measures, further researc...

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https://pubmed.ncbi.nlm.nih.gov/41172252/?

## A Study on Hemodynamic and Brain Network Characteristics During Upper Limb Movement in Children with Cerebral Hemiplegia Based on fNIRS



**Summary:** Background: Hemiplegic cerebral palsy (HCP) is a motor dysfunction disorder resulting from perinatal developmental brain injury, predominantly impairing upper limb function in children. Nonetheless, there has been insufficient research on the brain activation patterns and inter-brain coordination me...

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https://pubmed.ncbi.nlm.nih.gov/41154127/?

## Task-Dependent Neural Activity in the Posterior Parietal **Cortex Is Associated with Better Balance in Adults with Acquired Brain Injury**









Summary: Background/Objectives: There is scarce evidence on the neural underpinnings of balance in people with chronic acquired brain injury (ABI). Thus, the objective was to measure this in adults with ABI during four balance tasks and to examine the relationship between neural activity and balance performa...

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## Medication vs. Movement in ADHD: Interaction Between Medication and Physical Activity on Neurocognitive Functioning



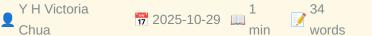
**Summary:** Background/Objectives: Movement during attention-demanding tasks may help compensate for cortical under-arousal in pediatric ADHD patients. However, the influence of medication during movement is unknown. This study assessed the impact of concurrent movement during executive functioning tasks on dor...

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## A Systematic Review of Inter-Brain Synchrony and Psychological Conditions: Stress, Anxiety, Depression, **Autism and Other Disorders**









Summary: CONCLUSIONS: Collectively, the findings support IBS as a potentially dynamic, condition-sensitive, and contextually modulated neurophysiological indicator of interpersonal functioning, with implications for diagnostics, intervention design, and the advancement of social neuroscience in clinical sett...

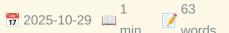
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## **DrSVision: A Machine Learning Tool for Cortical Region-**Specific fNIRS Calibration Based on Cadaveric Head MRI











Summary: Functional Near-Infrared Spectroscopy is (fNIRS) a non-invasive neuroimaging technique that monitors cerebral hemodynamic responses by measuring near-infrared (NIR) light absorption caused by changes in oxygenated and deoxygenated hemoglobin concentrations. While fNIRS has been widely used in cognit...

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## Early Motor Cortex Connectivity and Neuronal Reactivity in **Intracerebral Hemorrhage: A Continuous-Wave Functional Near-Infrared Spectroscopy Study**







Summary: Insights into motor cortex remodeling may enable the development of more effective rehabilitation strategies during the acute phase. We aim to assess the affected and unaffected motor/premotor/somatosensory cortex resting state functional connectivity (RSFC) and reactivity with continuous wave funct...

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## Individual abilities to estimate levels of movement synchrony predict action observation network activation











Summary: Observers' ability to estimate levels of movement synchrony, such as in Olympic diving or rowing, is highly variable and, in part, constrained by personality traits and enjoyment of the movements. Embodiment also appears to play a crucial role, whereby stronger beliefs that one's body can complete p...

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The effects of combining anodal transcranial direct current stimulation with robot-assisted gait training on lower limb motor function and the motor cortex regulation of stroke patients



**Summary:** CONCLUSIONS: The combination of anodal tDCS and RAGT can enhance lower limb motor function in stroke patients, while also modulating the connectivity within the motor network. Additionally, the elevation of functional connectivity between the bilateral cerebral hemispheres, quantifiable through fNIR...

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## The Impact of Sports Experience on Map Symbol **Representation in Orienteering Athletes and Its Neural Correlates: Evidence from Eye-Tracking and fNIRS**











Summary: CONCLUSION: High-level orienteering athletes exhibit domain-specific cognitive advantages in map symbol representation tasks. Long-term orienteering map reading training facilitates synergistic interactions between visual and neural information processing.

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# The Impact of Teachers' Autonomy Support on Students' Academic Performance from the Perspective of Hyperscanning: the Mediating Role of Autonomy Need Satisfaction



**Summary:** Previous research on self-determination theory has primarily focused on analyzing experiences and behaviors, without fully elucidating the neural basis of how teacher autonomy support influences students' academic performance. In this study, four individuals were selected to act as teachers, while 4...

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## **Fatal Isolated Right Ventricular Rupture Without External Chest Injury in a Young Driver: Forensic Autopsy Findings** After a One-Sided Vehicle Collision







BRAIN COMPUTER INTERFACE

**Summary:** Traumatic deaths are common, with cardiac trauma affecting 7–12% of patients with thoracic injuries. Blunt cardiac injury (BCI), although rare, is associated with a high mortality rate. This report presents a case of blunt cardiac rupture (BCR) observed at autopsy despite the absence of external che...

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## Comparative analysis across diverse plant species reveals superior antibiofilm efficacy and dose-dependency of root extracts compared to leaf extracts







BRAIN COMPUTER INTERFACE

Summary: Although both root- and leaf-derived plant extracts hold potential as antibiofilm agents, research has predominantly focused on leaf tissues. In this study, we systematically compared the antibiofilm efficacy of 158 root and 248 leaf extracts from 360 plant species across five concentrations (0.1, 0...

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## An Active, Multimodal Neural Interface for Real-Time Monitoring of Cortical Electrical, Thermal, and Optical **Dynamics**







BRAIN COMPUTER INTERFACE

Summary: Chronic neurophysiological monitoring devices facilitate the timely diagnosis and treatment of episodic or recurrent neurological disorders. Compared with passive electrodes, silicon-based active transistors provide intrinsic signal amplification and, when combined with capacitive-coupling measureme...

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## Feasibility of decoding cerebellar movement-related potentials for brain-computer interface applications









BRAIN COMPUTER INTERFACE

Summary: 
In Brain-Computer Interface (BCI) applications, signals are conventionally acquired from the cerebrum, and only a subset of the complex interactions that occur in several areas of the brain are collected. One area that has not been investigated for BCI application is the cerebellum, despite its...

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## Acute Effects of Portable Dry-EEG Neurofeedback on **Classical Chinese Learning: A Three-Arm Repeated-Measures** Study







BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: Portable dry-electrode EEG systems can reliably support realtime neurofeedback to enhance attention and cognitive control in complex language learning contexts. This study provides empirical validation for deploying dry-EEG sensors in adaptive educational technologies and contributes t...

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## The effect of perceived auditory feedback on speech Brain-**Computer Interface decoding performance**







BRAIN COMPUTER INTERFACE

Summary: OBJECTIVE: Brain-Computer Interfaces (BCI) provide alternative means of communication for individuals with severe motor impairment. Implantable speech BCIs have shown great potential, particularly in individuals who could still produce some speechrelated movements and/or sounds. As perception of au...

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## The influence of different visual eccentricity on SSVEPs elicited by ultra-low frequency visual stimulation in the lower peripheral visual field

Xiaogang 1 70
Chen min words

BRAIN COMPUTER INTERFACE

Summary: Steady-state visual evoked potential (SSVEP)-based brain-computer interfaces (BCIs) have been widely explored due to their high information transfer rate (ITR) and minimal training requirements. Traditional SSVEP-based BCIs typically use low- and medium-frequency visual stimuli from the central visu...

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## Towards neuroadaptive chatbots: a feasibility study

1 73 min words



BRAIN COMPUTER INTERFACE

Summary: INTRODUCTION: Large-language models (LLMs) are transforming most industries today and are set to become a cornerstone of the human digital experience. While integrating explicit human feedback into the training and development of LLM-based chatbots has been integral to the progress we see nowadays, ...

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## A Novel Binocular-Encoded SSVEP Framework for Efficient **VR-Based Brain-Computer Interface**







BRAIN COMPUTER INTERFACE

Summary: This paper presents a novel binocular-encoded SSVEP (beSSVEP) method, leveraging binocular vision in virtual reality (VR) to enhance brain-computer interface (BCI) applications. We introduce the Binocular Periodically Repeated Component Analysis (bPRCA) algorithm, designed to address the unique char...

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## A novel channel reduction concept to enhance the classification of motor imagery tasks in brain-computer interface systems



Hua
Wang

Wang

Wang

Wang

Words

Words



Summary: Electroencephalogram (EEG) signals play a critical role in advancing braincomputer interface (BCI) systems, particularly for detecting motor imagery (MI) movements. However, analysing large volume of EEG datasets faces some challenges due to redundant information, and performance degradation. Irrel...

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### Intent to Deprecate and Remove: Deprecate and Remove **XSLT**





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### Intent to Deprecate and Remove: Deprecate and Remove **XSLT**

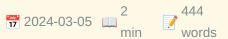
CharlesW 7 2025-11-01 min 13 HACKER NEWS

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https://groups.google.com/a/chromium.org/g/blink-dev/c/CxL4gYZeSJA/m/yNs4EsD5AQAJ

### Important Changes to the 2024 ERP Boot Camp







ERP BOOT CAMP

Summary: We are disappointed to announce that we will not be holding a regular 10-day ERP Boot Camp this summer.We have held Boot Camps nearly every summer since 2007, supported by a series of generous grants from NIMH that allowed us to provide scholarships for all attendees. Unf...

https://erpinfo.org/blog/2024/3/5/changes-to-the-2024-erp-boot-camp

# Image-based meta- and mega-analysis (IBMMA): A unified framework for large-scale, multi-site, neuroimaging data analysis

1 min



NEUROIMAGE

**Summary:** Publication date: 15 November 2025<b>Source:</b> NeuroImage, Volume 322Author(s): Nick Steele, Ashley A. Huggins, Rajendra A. Morey, Ahmed Hussain, Courtney Russell, Benjamin Suarez-Jimenez, Elena Pozzi, Hadis Jameei, Lianne Schmaal, Ilya M. Veer, Lea Waller, Neda Jahanshad, Sophia ...

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https://www.sciencedirect.com/science/article/pii/S1053811925005579?dgcid=rss\_sd\_all

# Quantitative ultrashort T<sub>2</sub> components imaging in the brain using variable flip angle balanced steady state free precession ultrashort echo time MRI

1 min



NEUROIMAGE

**Summary:** Publication date: 15 November 2025<b>Source:</b> NeuroImage, Volume 322Author(s): Xin Shen, Ari Green, Roland G. Henry, Nikhil Deveshwar, Uzay Emir, Peder E.Z. Larson

https://www.sciencedirect.com/science/article/pii/S1053811925005543?dgcid=rss\_sd\_all

## Subjective value-weights on benefit and risk in human neurocomputation changes between conservative and risky decision-making

1 min



NEUROIMAGE

**Summary:** Publication date: 15 November 2025<b>Source:</b> NeuroImage, Volume 322Author(s): Sijia Liu, Shuang Li, Haoran Jiang, Lixing Yin, Yu Xu, Zhiyuan Liu, Xiuyan Guo

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## Personalized real-time inference of momentary excitability from human EEG

1 min



NEUROIMAGE

**Summary:** Publication date: 15 November 2025<b>Source:</b> NeuroImage, Volume 322Author(s): Lisa Haxel, Oskari Ahola, Jaivardhan Kapoor, Ulf Ziemann, Jakob H. Macke

https://www.sciencedirect.com/science/article/pii/S1053811925005506?dgcid=rss sd all

## Dissociable effects of LSD and MDMA on striato-cortical connectivity in healthy subjects



**Solution** Read full article:

https://www.nature.com/articles/s41386-025-02270-5

## Information-theoretic gradient flows in mouse visual cortex



**Summary:** IntroductionNeural activity can be described in terms of probability distributions that are continuously evolving in time. Characterizing how these distributions are reshaped as they pass between cortical regions is key to understanding how information is organized in the brain.MethodsWe developed a...

https://www.frontiersin.org/articles/10.3389/fninf.2025.1700481

## Universal differential equations as a unifying modeling language for neuroscience

Marcel van 1 154 min words

FRONTIERS COMPUTATIONAL NEUROSCIENCE

Summary: The rapid growth of large-scale neuroscience datasets has spurred diverse modeling strategies, ranging from mechanistic models grounded in biophysics, to phenomenological descriptions of neural dynamics, to data-driven deep neural networks (DNNs). Each approach offers distinct strengths as mechanist...

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## Differences in structural brain morphometry between musicians and non-musicians







FRONTIERS HUMAN NEUROSCIENCE

Summary: ObjectiveAlthough music has been shown to affect brain function, the structural characteristics of the brain in musicians compared to non-musicians are often overlooked. This limited attention restricts the practical use of music's emotional, cognitive, and motor functions. The current study aimed t...



https://www.frontiersin.org/articles/10.3389/fnhum.2025.1638813

## The impact of acute stress on athletes' perceptions of fairness in decision-making and its neural mechanisms

Lin 1 2025-10-30 min 201 FRONTIERS HUMAN NEUROSCIENCE

**Summary:** BackgroundAcute stress may disrupt decision - making by affecting cognitive and emotional processing. The behavioral and neural mechanisms of this in athletes are unclear. This study explored how acute stress impacts athletes' unfairness - related decision - making and its neural basis.MethodsForty ...

https://www.frontiersin.org/articles/10.3389/fnhum.2025.1685000

## Rising burden of subarachnoid hemorrhage linked to high systolic blood pressure among young and middle-aged populations: temporal trends and global implication



**Summary:** BackgroundSubarachnoid hemorrhage (SAH) is a devastating cerebrovascular event that leads to high mortality and long-term disability, particularly among adults aged 25–49 years. Elevated systolic blood pressure (SBP) is the leading modifiable risk factor, yet its global burden in this age group has ...

https://www.frontiersin.org/articles/10.3389/fnhum.2025.1700918

## Effective and efficient self-supervised masked model based on mixed feature training

Chunliu 179
Cai min words

FRONTIERS NEUROROBOTICS

Summary: Under the influence of Masked Language Modeling (MLM), Masked Image Modeling (MIM) employs an attention mechanism to perform masked training on images. However, processing a single image requires numerous iterations and substantial computational resources to reconstruct the masked regions, resulting...

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## Autism spectrum disorder and the role of nuclear hormone receptors: insights and therapeutic implications

Arun 1 194
Upadhyay min words



FRONTIERS NEUROSCIENCE

Summary: Autism spectrum disorder is a neurological and developmental condition known to impact a person's learning, communication, and interpersonal interactions. Recent research has highlighted the role of nuclear hormone receptors (NHRs) in neurodevelopment and synaptic function, suggesting their potentia...

https://www.frontiersin.org/articles/10.3389/fnins.2025.1655348

## Geometric and dosimetric evaluation of auto-segmentation of brain arteriovenous malformations using multimodal imaging in stereotactic radiosurgery







FRONTIERS NEUROSCIENCE

Summary: BackgroundOptimizing radiation dose to protect white matter (WM) tracts during stereotactic radiosurgery (SRS) of brain arteriovenous malformations (bAVMs) necessitates the integration of diffusion tensor imaging (DTI)-based WM tractography to delineate WM tracts and establish dose constraints. Conv...



https://www.frontiersin.org/articles/10.3389/fnins.2025.1645990

## Deep learning in intracranial EEG for seizure detection: advances, challenges, and clinical applications







FRONTIERS NEUROSCIENCE

Summary: Deep learning has emerged as a transformative tool for the automated detection and classification of seizure events from intracranial EEG (iEEG) recordings. In this review, we synthesize recent advancements in deep learning techniques including convolutional neural networks (CNN), recurrent neural n...



https://www.frontiersin.org/articles/10.3389/fnins.2025.1677898

## CS-Net: convolutional spider neural network for surface-**EMG-based hybrid gesture recognition**

Xi Zhang, Jiannan Chen, Lei Liu and Fuchun

1 252 min words

JOURNAL NEURAL ENGINEERING

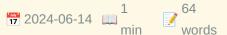
Summary: Objective. In this paper, we propose a novel neural network architecture, the convolutional spider neural network (CS-Net), combined with a transfer learning (TL) strategy, to classify hybrid gestures that integrate wrist postures and hand movements. Approach. The CS-Net framework incorporates diver...

#### Read full article:

http://iopscience.iop.org/article/10.1088/1741-2552/ae0c38

## The impact of CSF-filled cavities on scalp EEG and its **implications**







OOSTENVELD ROBERT

Summary: Previous studies have found electroencephalogram (EEG) amplitude and scalp topography differences between neurotypical and neurological/neurosurgical groups, being interpreted at the cognitive level. However, these comparisons are invariably accompanied by anatomical changes. Critical to EEG are the...

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## Motion-BIDS: an extension to the brain imaging data structure to organize motion data for reproducible research

Julius .

1 72 2024-07-02 min words OOSTENVELD ROBERT

Summary: We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalitie...

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## One hundred years of EEG for brain and behaviour research









OOSTENVELD ROBERT

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## Freezing of gait in Parkinson's disease is related to imbalanced stopping-related cortical activity

Richard J A van

1 65 min words

OOSTENVELD ROBERT

Summary: Freezing of gait, characterized by involuntary interruptions of walking, is a debilitating motor symptom of Parkinson's disease that restricts people's autonomy. Previous brain imaging studies investigating the mechanisms underlying freezing were restricted to scan people in supine positions and yie...

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## The past, present, and future of the brain imaging data structure (BIDS)

Krzysztof J Gorgolewski 1 82 min words

**OOSTENVELD ROBERT** 

Summary: The Brain Imaging Data Structure (BIDS) is a community-driven standard for the organization of data and metadata from a growing range of neuroscience modalities. This paper is meant as a history of how the standard has developed and grown over time. We outline the principles behind the project, the ...

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## Human cortical high-gamma power scales with movement rate in healthy participants and stroke survivors

Fanny Quandt

1 65 min words

OOSTENVELD ROBERT

Summary: Motor cortical high-gamma oscillations (60-90 Hz) occur at movement onset and are spatially focused over the contralateral primary motor cortex. Although high-gamma oscillations are widely recognized for their significance in human motor control, their precise function on a cortical level remains el...

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## NIRS-BIDS: Brain Imaging Data Structure Extended to Near-**Infrared Spectroscopy**



1 70 min words

OOSTENVELD ROBERT

Summary: Functional near-infrared spectroscopy (fNIRS) is an increasingly popular neuroimaging technique that measures cortical hemodynamic activity in a non-invasive and portable fashion. Although the fNIRS community has been successful in disseminating open-source processing tools and a standard file forma...

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## Pseudonymisation of neuroimages and data protection: <em>Increasing access to data while retaining scientific utility</em>

Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld robert

Oostenveld robert



Summary: For a number of years, facial features removal techniques such as 'defacing', 'skull stripping' and 'face masking/blurring', were considered adequate privacy preserving tools to openly share brain images. Scientifically, these measures were already a compromise between data protection requirements a...

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## Cycling on the Freeway: The perilous state of open-source neuroscience software

1 74 min words





OOSTENVELD ROBERT

Summary: Most scientists need software to perform their research (Barker et al., 2020; Carver et al., 2022; Hettrick, 2014; Hettrick et al., 2014; Switters & Osimo, 2019), and neuroscientists are no exception. Whether we work with reaction times, electrophysiological signals, or magnetic resonance imaging data, ...

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### Optimal configuration of on-scalp OPMs with fixed channel counts

Robert 1 69
Oostenveld min words

OOSTENVELD ROBERT

Summary: Recent technological developments have brought optically pumped magnetometers (OPMs) within reach of the larger neuroscientific community. The current state-of-the-art consists of whole-head systems that measure the magnetic field at >100 locations. OPM sensors can be constructed to measure the fiel...

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## Six-Month Interim Analyses of the Efficacy of Repeated Low-**Level Red-Light Therapy Combined with Orthokeratology for Myopia Control in Spanish Children**

Fernando J Fernández-Velázquez

28 min words

LOW VISION

Summary: CONCLUSIONS: The six-month interim analysis indicates that combining RLRL therapy with OK effectively controls myopia progression in Spanish children, with no severe adverse effects. Long-term follow-up is ongoing.

#### 

https://pubmed.ncbi.nlm.nih.gov/41165747/?

## Predictors of posttraumatic stress disorder among displaced families in Lebanon: A cross-sectional study

Rola Bou

1 72 LOW VISION min words

Summary: This study aimed to assess the prevalence of posttraumatic stress disorder (PTSD) among Lebanese individuals internally displaced by the recent conflict and to identify key predictors of PTSD. The findings are intended to guide targeted policy and advocacy strategies aimed at improving mental health...

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## Incidental ocular surface squamous neoplasia in pterygia: a systematic review and meta-analysis

1 47 min words

LOW VISION

Summary: CONCLUSIONS: This meta-analysis, based on low- to very low-certainty evidence, identified a 1.32% pooled prevalence of incidental OSSN in clinically diagnosed pterygia, highlighting the potential influence of UV exposure and equatorial proximity. The overlap in demographic and lesion characteristics...

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## The Hidden Benefits of Noise: Low-Frequency tRNS and **Dynamic Visual Noise Enhance Visual Processing**

Hulusi Kafaligonul 1 70 min words

Summary: Sensory and perceptual processing is inherently shaped by both internal and external noise sources. While noise is typically seen as disruptive, it can, under certain conditions, enhance the detection of weak sensory signals-a phenomenon known as stochastic resonance (SR). Research on SR has primari...

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## **Headaches due to Low and High Intracranial Pressure**

1 63 min words

LOW VISION

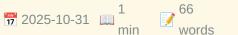
Summary: This article provides a comprehensive overview of high-pressure and lowpressure headaches, focusing on their pathophysiology, clinical presentation, diagnosis, and management. High-pressure headaches, often linked to idiopathic intracranial hypertension, primarily affect young women and can lead to...

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## **Synergistic Charge Generation and Collection Enabled by Incorporation of Crystalline Polymer for Ultrafast-Response Dual-Band Perovskite/Organic Photodetectors**







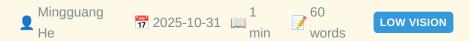
LOW VISION

Summary: Dual-band photodetectors (PDs) capable of selectively responding to both visible and near-infrared (NIR) light are essential for applications in optical communication, medical diagnostics, and artificial vision systems. In this work, we report a highperformance visible/NIR dual-band PD based on a v...

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# Diabetic retinopathy screening in Australian general practice: persistently low uptake despite national guidelines and equity initiatives



**Summary:** CONCLUSION: Despite national guidelines, GP-led DR screening uptake remains low, with substantial geographic, demographic and temporal disparities in Australian general practice settings. Addressing systemic barriers, strengthening GP-led screening, and implementing targeted interventions are crucia...

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https://pubmed.ncbi.nlm.nih.gov/41169341/?

## **Rare Ocular Complication After Prone Position Surgery: Bilateral Subconjunctival Hemorrhage Following Endoscopic Lumbar Discectomy**









Summary: Subconjunctival hemorrhage (SCH) is a rare complication in spinal surgery and is even more uncommon in endoscopic procedures, which are typically of short duration. We report the case of a 32-year-old male who developed bilateral SCH after an uneventful L4-L5 lumbar endoscopic discectomy performed u...

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## A Rare Co-Occurrence of Gastric Heterotopia and Autonomic **Nervous System Dysfunction: An Attempt to Explain If There** Is a Need to Explore Possible Syndromic Link

Mohamed H
Ahmed

1 62 Low VISION min words

Summary: Gastric heterotopia (GHT) is the presence of gastric mucosa outside the stomach, including in the rectum. A 59-year-old man presented with rectal bleeding and altered bowel habits, along with long-standing low blood pressure and erectile dysfunction. Investigations confirmed rectal GHT, initially ma...

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## Ocular Syphilis in an Immunocompetent Patient: Through the Lens

1 72 Low VISION min words

Summary: Ocular manifestations of syphilis can occur at any stage of the disease and present with a wide range of clinical features. If left untreated, they carry a high risk of permanent vision loss. Although syphilis mainly affects individuals with human immunodeficiency virus (HIV) positive and other immu...

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## The taste of trigeminal sensations: relation between taste, lingual tactile acuity, and spicy perception in patients with taste dysfunction

Thomas
Hummel

Thomas

Tactile Acuity

Thomas

Summary: In the oral cavity, oral stereognosis and chemesthesis refer to the abilities to recognize shapes and detect noxious substances, respectively, through various receptors distributed on the tongue. The absence of standardized methods to assess oral somatosensory perception has led to a lack of consens...

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## **Measuring the Distribution of Tactile Acuity at the Index Finger and Thumb Fingertips**

Hiroyuki

1 75
min words

TACTILE ACUITY

Summary: In our day-to-day activities, we utilize not only the pads of our fingers but also the sides and hemispherical tips when manipulating objects. For teleoperation systems to replicate these real-life interactions, tactile sensation must be presented and distributed across the entire fingertip. Thus, u...

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## Optimizing Vibrotactile Feedback for Sensory Substitution in the Thigh: Spatial Acuity and Frequency Characteristics

Leah R

Bent

1
69
words

TACTILE ACUITY

**Summary:** Amputation of a lower limb not only affects mobility but also interferes with sensory feedback, leading to an elevated risk of falls among individuals living with amputation. Sensory substitution, achieved through tactile displays embedded in transfemoral prosthetic sockets, presents a promising non...

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## Directional vibro-tactile hazard warnings for drivers with vision impairments

Alex R

Bowers

1

80

min

words

TACTILE ACUITY

Summary: Vision impairment may delay responses to hazards when driving. In a proof-ofconcept driving simulator study, we evaluated a hazard warning device designed for vision impaired drivers. Three groups participated: 11 persons with central vision loss (CVL; median age 60 years), 12 with homonymous field...

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## Sensitivity and vagal reactivity to C-tactile-mediated affective touch in mild cognitive impairment due to Alzheimer's disease







Summary: BackgroundC-tactile (CT) afferents preferentially activate in response to slow caress-like touch, evoking a diffuse pleasant sensation and promoting autonomic regulation. According to Braak's classic model, the neurodegenerative process in Alzheimer's disease (AD) only affects somatosensory cortices...

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## Differences in tactile grid localization accuracy between people with back pain compared to individuals without pain









**Summary:** OBJECTIVES: The study aimed to investigate the grid localization test (GLT) between patients with lower back pain and those without back pain.

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## **Eye Drop Instillation Success and Hand Function in Adults** with Glaucoma: A Pilot Study

Paula Anne Newman-Casev

1 74 TACTILE ACUITY words

Summary: CONCLUSIONS: Despite hand function deficits, in this exploratory pilot study, adults with glaucoma demonstrated eye drop instillation success comparable to those without glaucoma, though with higher rates of bottle tip contact with the eye, skin, or eyelashes, suggesting an increased risk of potenti...

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## Functional evidence for early origin of tactile acuity in the vertebrate somatosensory system

Sviatoslav N Bagriantsev

1 2025-09-13 min 58 words

TACTILE ACUITY

Summary: Mammals and reptiles possess a sophisticated somatosensory system for precise tactile discrimination via mechanosensory end-organs, such as Meissner and Pacinian corpuscles and others. These structures detect sustained pressure, velocity, and vibrations, thereby facilitating nuanced environmental in...

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https://pubmed.ncbi.nlm.nih.gov/40945511/?

## The coarse mental map of the breast is anchored on the nipple

Charles M

Greenspon

1

86

words

TACTILE ACUITY

Summary: Touch plays a key role in our perception of our body and shapes our interactions with the world, from the objects we manipulate to the people we touch. While the tactile sensibility of the hand has been extensively characterized, much less is known about touch on other parts of the body. Despite the...

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## **Haptic Feedback Systems for Lower-Limb Prosthetic** Applications: A Review of System Design, User Experience, and Clinical Insights









TACTILE ACUITY

Summary: Systems presenting haptic information have emerged as an important technological advance in assisting individuals with sensory impairments or amputations, where the aim is to enhance sensory perception or provide sensory substitution through tactile feedback. These systems provide information on lim...

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https://pubmed.ncbi.nlm.nih.gov/41007234/?

## A Biomimetic Fiber-Entangled Permeable Electronic Skin for Strain-Insensitive and High-Resolution Tactile Sensing







Summary: Electronic skins (e-skins) incorporating island architectures represent a promising platform for strain-insensitive tactile sensing by mechanically decoupling sensing units from deformations. However, conventional island designs encounter stress concentration issues caused by inherent modulus mismat...

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## **High-Density Tactile Sensor Array for Sub-Millimeter Texture** Recognition







BRAILLE

Summary: High-density tactile sensor arrays that replicate human touch could restore texture perception in paralyzed individuals. However, conventional tactile sensor arrays face inherent trade-offs between spatial resolution, sensitivity, and crosstalk suppression due to microstructure size limitations and ...

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## A Diachronic Investigation of the Change in Form and Formational-Semantic Systematicity of the Chinese Sign Language Lexicon



**Summary:** It has been argued in previous research that several competing pressures guide the directions of language evolution (economy vs. redundancy; arbitrariness vs. systematicity). For sign languages, however, the effects of competing pressures on their change of lexical systems remain largely unclear. In...

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## Wireless Electrotactile System with Hydrogel-Based Electrodes for Conformal Tactile Interaction



**Summary:** A wireless epidermal electrotactile interface is demonstrated through integration of skin-conformal electrodes and flexible circuitry, addressing existing limitations in haptic technology caused by mechanical mismatch and system-level integration challenges. This electrotactile system achieves low s...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40891563/?

## Beyond access: rethinking assistive technology for individuals with visual impairments in Türkiye

Önder

1 55 min words



Summary: CONCLUSION: Despite demonstrating adaptability, individuals with VI in Türkiye face significant structural barriers to equitable AT access. Informal learning limited public support, and a lack of locally adapted tools contribute to digital exclusion. A rightsbased approach-emphasizing inclusive fun...

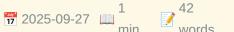
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## High prevalence of bacterial STI, anal HPV, cytological abnormalities and anal lesions among MSM in Togo, 2021: a baseline analysis of the ANRS I MIE 12,400/DepIST-H cohort









Summary: CONCLUSIONS: These findings emphasize the high prevalence of STIs among MSM and confirm the unusual distribution of HPV types in West Africa, with HPV35 being highly prevalent. A national strategy regarding STI screening and HPV vaccination in this key population is needed.

#### Read full article:

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## Development and Assessment of a Novel Audiosensory Performance Method for Improving the Oral Health of Visually Impaired Children



**Summary:** This study evaluated the effectiveness of an audiosensory performance method in enhancing oral health knowledge and status among visually impaired children aged 6-12 years in the National Capital Region (NCR), Delhi. An interventional study design was used, involving 251 participants equally divided...

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https://pubmed.ncbi.nlm.nih.gov/41041413/?

## **Examining the ability of the interRAI communication** collaborative action plan to identify individuals with sensory challenges: A retrospective cohort study









Summary: CONCLUSIONS: The communication CAP was robust in flagging individuals with sensory impairments as these individuals are more likely to fall into the triggered to facilitate improvement group. The three case studies highlight the importance of assessing all aspects of communication (e.g., cognitive, ...

#### 

https://pubmed.ncbi.nlm.nih.gov/41127342/?

## **Analysis of Stability and Functionality of Coil and** Piezoelectric Braille Modules Under Varying Temperature Conditions



Robert P 1 2025-10-29 min 73 BRAILLE

Summary: In this study, the performance and reliability of two different types of Braille modules, i.e., coil and piezoelectric, under varying temperature conditions were compared. The coil module works on the principle of electromagnetic forces generated by coils, while the piezoelectric module is based on ...

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## Challenges faced by visually impaired individuals from the perspective of faculty members: a phenomenological study









Summary: Visually impaired students in higher education face significant academic, social, and psychological barriers that are often overlooked by faculty. This phenomenological study explored these challenges at Hail University, Saudi Arabia, by purposively sampling six faculty members from the Colleges of ...

#### Read full article:

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# Non-invasive brain stimulation combined with three rehabilitation approaches for cognitive and emotional well-being in Parkinson's patients



**Summary:** CONCLUSION: This study demonstrates that non-invasive brain stimulation combined with cognitive rehabilitation (CR) is the most effective approach for improving cognitive function in Parkinson's patients, while combined motor-cognitive rehabilitation (MCR) shows particular efficacy for emotional wel...

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## Precision Neuromodulation for Diabetes-Associated **Cognitive Decline: a Transcranial Electrical Stimulation Approach**







Summary: CONCLUSION: These findings indicate that tDCS presents a promising, noninvasive therapeutic approach. It demonstrates potential for enhancing cognitive function in patients with DACD and for facilitating improved long-term glycemic control. This highlights the role of brain neuromodulation as a com...

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## The Hidden Benefits of Noise: Low-Frequency tRNS and **Dynamic Visual Noise Enhance Visual Processing**







TDCS TACS TRNS

Summary: Sensory and perceptual processing is inherently shaped by both internal and external noise sources. While noise is typically seen as disruptive, it can, under certain conditions, enhance the detection of weak sensory signals-a phenomenon known as stochastic resonance (SR). Research on SR has primari...

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## A Comprehensive Review of Trigeminal Autonomic Cephalalgias







TDCS TACS TRNS

**Summary:** Trigeminal autonomic cephalalgias (TACs) are a distinct group of primary headache disorders characterized by unilateral pain and autonomic symptoms such as tearing, nasal congestion, and ptosis. This article provides an in-depth review of the different TAC subtypes, including cluster headache, short...

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## Effects on nonverbal numerical acuity performance after a single-session transient random noise stimulation over the intraparietal sulcus or dorsolateral prefrontal cortex









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## Post-discharge use of opioids, psychostimulants, and treatment medications following residential opioid discontinuation with NET Device™ monotherapy







TDCS TACS TRNS

Summary: CONCLUSIONS: The randomized groups did not differ on outcomes. However, participants who self-administered active NET Device stimulation >24 hours reported significantly fewer post-discharge days of opioid or psychostimulant use than those who self-administered active <24 hours or sham, but these fi...

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https://pubmed.ncbi.nlm.nih.gov/41169495/?

## Anodal transcranial direct current stimulation does not alter GABA concentration or functional connectivity in the normal visual cortex







TDCS TACS TRNS

Summary: INTRODUCTION: Anodal direct current stimulation (a-tDCS) of the visual cortex is a potential rehabilitation tool for vision disorders such as amblyopia and macular degeneration. However, the underlying neural mechanisms are currently unknown. When applied to the human motor cortex, a-tDCS reduces th...

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https://pubmed.ncbi.nlm.nih.gov/41169746/?

Can exercise therapy combined with transcranial direct current stimulation further improve balance ability in individuals with chronic ankle instability? A systematic review and meta-analysis







TDCS TACS TRNS

Summary: CONCLUSION: tDCS provides therapeutic benefits for dynamic balance only when combined with non-balance exercises. Current evidence is insufficient to demonstrate improvements in static balance with tDCS adjunctive therapy.

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#### **Physical Therapy for Addiction**









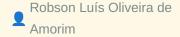
TDCS TACS TRNS

Summary: Physical therapy has the evidence-based scientific knowledge to address a wide range of physical and psychological problems of addiction. Neuromodulation techniques, including transcranial electrical stimulation (tES) methods like transcranial direct current stimulation (tDCS), transcranial alternat...

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https://pubmed.ncbi.nlm.nih.gov/41171569/?

The Effects of Transcranial Direct Current Stimulation Over the Prefrontal Cortex on Reactive Aggressive Behavior in Healthy Volunteers: A Systematic Review and Meta-analysis of Randomized Controlled Trials







TDCS TACS TRNS

Summary: CONCLUSION: While the overall analysis did not show a significant effect of anodal on reactive aggressive behavior in healthy volunteers, the results suggest that online tDCS and unilateral tDCS may have a potential impact. Given the heterogeneity of the studies and outcome measures, further researc...

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https://pubmed.ncbi.nlm.nih.gov/41172252/?

## A Study on Hemodynamic and Brain Network Characteristics During Upper Limb Movement in Children with Cerebral Hemiplegia Based on fNIRS



**Summary:** Background: Hemiplegic cerebral palsy (HCP) is a motor dysfunction disorder resulting from perinatal developmental brain injury, predominantly impairing upper limb function in children. Nonetheless, there has been insufficient research on the brain activation patterns and inter-brain coordination me...

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## Task-Dependent Neural Activity in the Posterior Parietal **Cortex Is Associated with Better Balance in Adults with Acquired Brain Injury**









Summary: Background/Objectives: There is scarce evidence on the neural underpinnings of balance in people with chronic acquired brain injury (ABI). Thus, the objective was to measure this in adults with ABI during four balance tasks and to examine the relationship between neural activity and balance performa...

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# Medication vs. Movement in ADHD: Interaction Between Medication and Physical Activity on Neurocognitive Functioning



**Summary:** Background/Objectives: Movement during attention-demanding tasks may help compensate for cortical under-arousal in pediatric ADHD patients. However, the influence of medication during movement is unknown. This study assessed the impact of concurrent movement during executive functioning tasks on dor...

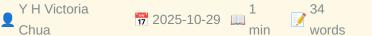
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## A Systematic Review of Inter-Brain Synchrony and Psychological Conditions: Stress, Anxiety, Depression, **Autism and Other Disorders**









**Summary:** CONCLUSIONS: Collectively, the findings support IBS as a potentially dynamic, condition-sensitive, and contextually modulated neurophysiological indicator of interpersonal functioning, with implications for diagnostics, intervention design, and the advancement of social neuroscience in clinical sett...

#### **⊗** Read full article:

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## **DrSVision: A Machine Learning Tool for Cortical Region-**Specific fNIRS Calibration Based on Cadaveric Head MRI











Summary: Functional Near-Infrared Spectroscopy is (fNIRS) a non-invasive neuroimaging technique that monitors cerebral hemodynamic responses by measuring near-infrared (NIR) light absorption caused by changes in oxygenated and deoxygenated hemoglobin concentrations. While fNIRS has been widely used in cognit...

#### Read full article:

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## Early Motor Cortex Connectivity and Neuronal Reactivity in **Intracerebral Hemorrhage: A Continuous-Wave Functional Near-Infrared Spectroscopy Study**



1 65 min words



Summary: Insights into motor cortex remodeling may enable the development of more effective rehabilitation strategies during the acute phase. We aim to assess the affected and unaffected motor/premotor/somatosensory cortex resting state functional connectivity (RSFC) and reactivity with continuous wave funct...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41157430/?

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## Individual abilities to estimate levels of movement synchrony predict action observation network activation











Summary: Observers' ability to estimate levels of movement synchrony, such as in Olympic diving or rowing, is highly variable and, in part, constrained by personality traits and enjoyment of the movements. Embodiment also appears to play a crucial role, whereby stronger beliefs that one's body can complete p...

#### Read full article:

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The effects of combining anodal transcranial direct current stimulation with robot-assisted gait training on lower limb motor function and the motor cortex regulation of stroke patients



**Summary:** CONCLUSIONS: The combination of anodal tDCS and RAGT can enhance lower limb motor function in stroke patients, while also modulating the connectivity within the motor network. Additionally, the elevation of functional connectivity between the bilateral cerebral hemispheres, quantifiable through fNIR...

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## The Impact of Sports Experience on Map Symbol **Representation in Orienteering Athletes and Its Neural Correlates: Evidence from Eye-Tracking and fNIRS**











Summary: CONCLUSION: High-level orienteering athletes exhibit domain-specific cognitive advantages in map symbol representation tasks. Long-term orienteering map reading training facilitates synergistic interactions between visual and neural information processing.

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# The Impact of Teachers' Autonomy Support on Students' Academic Performance from the Perspective of Hyperscanning: the Mediating Role of Autonomy Need Satisfaction



**Summary:** Previous research on self-determination theory has primarily focused on analyzing experiences and behaviors, without fully elucidating the neural basis of how teacher autonomy support influences students' academic performance. In this study, four individuals were selected to act as teachers, while 4...

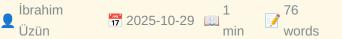
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https://pubmed.ncbi.nlm.nih.gov/41169190/?

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## **Fatal Isolated Right Ventricular Rupture Without External Chest Injury in a Young Driver: Forensic Autopsy Findings** After a One-Sided Vehicle Collision







BRAIN COMPUTER INTERFACE

**Summary:** Traumatic deaths are common, with cardiac trauma affecting 7–12% of patients with thoracic injuries. Blunt cardiac injury (BCI), although rare, is associated with a high mortality rate. This report presents a case of blunt cardiac rupture (BCR) observed at autopsy despite the absence of external che...

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## Comparative analysis across diverse plant species reveals superior antibiofilm efficacy and dose-dependency of root extracts compared to leaf extracts







BRAIN COMPUTER INTERFACE

Summary: Although both root- and leaf-derived plant extracts hold potential as antibiofilm agents, research has predominantly focused on leaf tissues. In this study, we systematically compared the antibiofilm efficacy of 158 root and 248 leaf extracts from 360 plant species across five concentrations (0.1, 0...

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## An Active, Multimodal Neural Interface for Real-Time Monitoring of Cortical Electrical, Thermal, and Optical **Dynamics**







BRAIN COMPUTER INTERFACE

Summary: Chronic neurophysiological monitoring devices facilitate the timely diagnosis and treatment of episodic or recurrent neurological disorders. Compared with passive electrodes, silicon-based active transistors provide intrinsic signal amplification and, when combined with capacitive-coupling measureme...

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## Feasibility of decoding cerebellar movement-related potentials for brain-computer interface applications









BRAIN COMPUTER INTERFACE

Summary: 
In Brain-Computer Interface (BCI) applications, signals are conventionally acquired from the cerebrum, and only a subset of the complex interactions that occur in several areas of the brain are collected. One area that has not been investigated for BCI application is the cerebellum, despite its...

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## Acute Effects of Portable Dry-EEG Neurofeedback on **Classical Chinese Learning: A Three-Arm Repeated-Measures** Study









BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: Portable dry-electrode EEG systems can reliably support realtime neurofeedback to enhance attention and cognitive control in complex language learning contexts. This study provides empirical validation for deploying dry-EEG sensors in adaptive educational technologies and contributes t...

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## The effect of perceived auditory feedback on speech Brain-**Computer Interface decoding performance**









BRAIN COMPUTER INTERFACE

Summary: OBJECTIVE: Brain-Computer Interfaces (BCI) provide alternative means of communication for individuals with severe motor impairment. Implantable speech BCIs have shown great potential, particularly in individuals who could still produce some speechrelated movements and/or sounds. As perception of au...

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https://pubmed.ncbi.nlm.nih.gov/41167038/?

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## The influence of different visual eccentricity on SSVEPs elicited by ultra-low frequency visual stimulation in the lower peripheral visual field

Xiaogang 1 70
Chen min words

BRAIN COMPUTER INTERFACE

Summary: Steady-state visual evoked potential (SSVEP)-based brain-computer interfaces (BCIs) have been widely explored due to their high information transfer rate (ITR) and minimal training requirements. Traditional SSVEP-based BCIs typically use low- and medium-frequency visual stimuli from the central visu...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41169537/?

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## Towards neuroadaptive chatbots: a feasibility study

1 73 min words





BRAIN COMPUTER INTERFACE

Summary: INTRODUCTION: Large-language models (LLMs) are transforming most industries today and are set to become a cornerstone of the human digital experience. While integrating explicit human feedback into the training and development of LLM-based chatbots has been integral to the progress we see nowadays, ...

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https://pubmed.ncbi.nlm.nih.gov/41170533/?

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## A Novel Binocular-Encoded SSVEP Framework for Efficient **VR-Based Brain-Computer Interface**







BRAIN COMPUTER INTERFACE

Summary: This paper presents a novel binocular-encoded SSVEP (beSSVEP) method, leveraging binocular vision in virtual reality (VR) to enhance brain-computer interface (BCI) applications. We introduce the Binocular Periodically Repeated Component Analysis (bPRCA) algorithm, designed to address the unique char...

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## A novel channel reduction concept to enhance the classification of motor imagery tasks in brain-computer interface systems



Hua
Wang

Wang

Wang

Wang

Words

Words

Summary: Electroencephalogram (EEG) signals play a critical role in advancing braincomputer interface (BCI) systems, particularly for detecting motor imagery (MI) movements. However, analysing large volume of EEG datasets faces some challenges due to redundant information, and performance degradation. Irrel...

#### **⊗** Read full article:

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## Early contingency information enhances human punishment sensitivity when punishment is frequent but not rare.





BEHAVIORAL NEUROSCIENCE

**Summary:** Individuals differ in sensitivity to the adverse consequences of their actions. We have shown that these differences can be linked to differences in correctly learning causal relationships between actions and their negative consequences. To further assess this, here we used a conditioned punishment ...

**Read full article:** 

http://doi.org/10.1037/bne0000627

Deep brain stimulation of nucleus basalis of meynert: Effect of stimulation mode and duration on learning in rat model of dementia.

1 273 min words



BEHAVIORAL NEUROSCIENCE

Summary: Deep brain stimulation (DBS) of the nucleus basalis of Meynert (NBM) has been preliminarily investigated as a potential treatment for dementia. The degeneration of NBM cholinergic neurons is a pathological feature of many forms of dementia. Although NBM stimulation has been demonstrated to improve I...

http://doi.org/10.1037/bne0000625

#### Influence of context on extinguished appetitive conditioning in male and female rats.

1 230 min words





**BEHAVIORAL NEUROSCIENCE** 

Summary: Extinction is fundamental to adaptive behavior in that it allows organisms to alter previously conditioned behaviors based on the prevailing environmental contingencies. Extinguished responses, however, will renew when the conditioned stimulus is presented outside the extinction context. There has b...

http://doi.org/10.1037/bne0000626

# Gonadectomy maintains goal-directed responding in female rats and accelerates habit formation in male rats.



**Summary:** We have previously demonstrated that gonadally intact female rats become habitual following around 120 response—outcome (R-Os) exposures during operant training. This rapid development of habit does not occur in gonadally intact male rats, which remain goal-directed up to at least 320 R-Os. The pres...



http://doi.org/10.1037/bne0000622

#### **Monthly Updates [April]**



**Summary:** <div class="info custom-block">INFO These update threads only contains major updates. If you're interested in seeing all minor changes you can follow our <a href="https://github.com/fmhy/FMHYedit/commits/main" rel="noreferrer" target="\_blank">Commits Page</a> on ...



https://fmhy.net/posts/april-2025

# A theoretical way to circumvent Android developer verification

sleirsgoevy 7 2025-10-31 min 13 words

**Summary:** Article URL: <a href="https://enaix.github.io/2025/10/30/developer-verification.html">https://enaix.github.io/2025/10/30/developer-verification.html</a> Comments URL: <a href="https://news.ycombinator.com/item?id=45776269">https://news.ycombinator.com/item?id=45776269">https://news.ycombinator.com/item?id=45776269</a> Points: 10...

https://enaix.github.io/2025/10/30/developer-verification.html

## New analog chip that is 1k times faster than high-end Nvidia GPUs

mrbluecoat 7 2025-11-01 min 13 words Wards

**Summary:** Article URL: <a href="https://www.livescience.com/technology/computing/china-solves-century-old-problem-with-new-analog-chip-that-is-1-000-times-faster-than-high-end-nvidia-gpus">https://www.livescience.com/technology/computing/china-solves-century-old-problem-with-new-analog-chip-that-is-1-000-t...

**Read full article:** 

https://www.livescience.com/technology/computing/china-solves-century-old-problem-with-new-analog-chip-that-is-1-000-times-faster-than-high-end-nvidia-gpus

#### Registration is now full for the 2024 ERP Boot Camp



1 106 words



**ERP BOOT CAMP** 

Summary: The demand for the<a href="https://erpinfo.org/2024-erp-bootcamp"> 2024 ERP Boot Camp</a> was far beyond our expectations, and we reached our maximum registration of 30 people within one day. We already have a waiting list of over 30 people, so we have closed the registration site.<...



https://erpinfo.org/blog/2024/3/15/registration-full

## **New Paper: Using Multivariate Pattern Analysis to Increase Effect Sizes for ERP Amplitude Comparisons**



2 525 min words



ERP BOOT CAMP

Summary: Carrasco, C. D., Bahle, B., Simmons, A. M., & D., Luck, S. J. (2024). Using multivariate pattern analysis to increase effect sizes for event-related potential analyses. Psychophysiology, 61, e14570. <a href="https://doi.org/10.1111/psyp.">https://doi.org/10.1111/psyp.</a> 14570">https://doi.org/10.1111/psyp.14570</a> [<a h...



https://erpinfo.org/blog/2024/6/10/erp-core-decoding-paper

#### New software package: ERPLAB Studio







ERP BOOT CAMP

Summary: We are excited to announce the release of a new EEG/ERP analysis package, <a href="https://github.com/ucdavis/erplab/releases">ERPLAB Studio</ a>. We think it's a huge improvement over the classic EEGLAB user interface. See our cheesy <a href="https://www.youtube.com/watch?v=llaKVQ9DD6E">...



https://erpinfo.org/blog/2024/6/11/erplab-studio

#### Recording and slides now available for ERPLAB Studio webinar







ERP BOOT CAMP

Summary: We held a webinar to demonstration ERPLAB Studio on 28 June 2024.<a href="https://youtu.be/k-nGv00rTP8">Click here</a> to access a recording.<a href="https://ucdavis.box.com/s/ 4fseqz6327dtuouauj12rgvivy1d1nmo">Click here </a>to access a PDF of the slides.<...



https://erpinfo.org/blog/2024/6/28/recording-and-slides-now-available-for-erplab-studio-webinar

## New Paper: Does the P3b component reflect working memory updating?







ERP BOOT CAMP

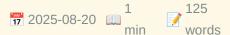
Summary: Carrasco, C. D., Simmons, A. M., Kiat, J. E., & D., Luck, S. J. (in press). Enhanced working memory representations for rare events. <em>Psychophysiology//doi.org/10.1111/psyp.70038">https://doi.org/ 10.1111/psyp.70038</a> [<a href="https://doi.org/10.1101/2024.03.20...



https://erpinfo.org/blog/2025/3/20/new-paper-oddball

#### 10-Day ERP Boot Camp to be held June 15-24, 2026 in Davis, California







ERP BOOT CAMP

**Summary:** We have received another 5 years of funding from the National Institute of Mental Health, so we plan to hold ERP Boot Camps in each of the next 5 summers. The next one will be June 15-24, 2026 in Davis, California. The application portal will open around January 1, 2026.A...



https://erpinfo.org/blog/2025/8/20/boot-camp-summer-2026

## Test-retest reproducibility of structural and proxy estimates of brain connectivity at rest

NEUROIMAGE

Summary: Publication date: 15 November 2025<b>Source:</b> NeuroImage, Volume 322Author(s): Aldana Lizarraga, Arianna Sala, Kathrin Koch, Igor Yakushev

Read full article:

https://www.sciencedirect.com/science/article/pii/S1053811925005610?dgcid=rss\_sd\_all

## Neurocognitive mechanisms of age-related decline in global motion perception



NEUROIMAGE

Summary: Publication date: 15 November 2025<b>Source:</b> NeuroImage, Volume 322Author(s): Yaxi Hong, Ting Liu, Dan Luo, Ziliang Zhu, Shizhen Yan, Hua Jin

https://www.sciencedirect.com/science/article/pii/S1053811925005592?dgcid=rss sd all

#### Disrupted temporal structure of the M/EEG meta-states sequencing in Alzheimer's disease

NEUROIMAGE

Summary: Publication date: 15 November 2025<b>Source:</b> NeuroImage, Volume 322Author(s): Marina Sandonís-Fernández, Pablo Núñez, Miguel A. Tola-Arribas, Mónica Cano, Hideyuki Hoshi, Yoshihito Shigihara, Jesús Poza, Carlos Gómez</ p>

https://www.sciencedirect.com/science/article/pii/S1053811925005580?dgcid=rss\_sd\_all

## Paired-pulse TMS of premotor cortex produces non-linear suppressive effects on neural activity in the targeted network - a TMS-fMRI study



**NEUROIMAGE** 

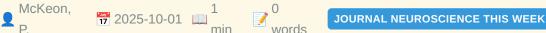
**Summary:** Publication date: 15 November 2025Source:</b> NeuroImage, Volume 322Author(s): Laerke Gebser Krohne, Sofus Nygaard, Maud Eline Ottenheijm, Marie Louise Liu, Axel Thielscher, Hartwig Roman Siebner, Kristoffer Hougaard Madsen

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https://www.sciencedirect.com/science/article/pii/S1053811925005361?dgcid=rss\_sd\_all

#### This Week in The Journal







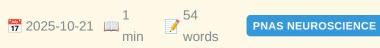


http://www.jneurosci.org/cgi/content/short/45/40/etwij45402025?rss=1

## From retinotopic to ordinal coding: Dissecting the cortical stages of visual word recognition

Aakash AgrawalStanislas DehaeneaCognitive Neuroimaging Unit, Commissariat à l'énergie atomique

et aux énergies alternatives, INSERM, Université Paris-Saclay, NeuroSpin Center, Gif-sur-Yvette 91191, FrancebCollège de France, Université Paris-Sciences-Lettres, Paris 75005, France





Summary: Proceedings of the National Academy of Sciences, Volume 122, Issue 43, October 2025. <br/>
SignificanceFluent reading requires that the brain encodes the order of letters within a word, yet without regard for where they appear on the retina. Information must be transformed from a retinotopic code in...

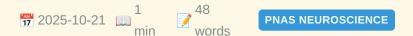


https://www.pnas.org/doi/abs/10.1073/pnas.2507291122?af=R

# Descattering and image restoration with a transformer-based neural network in deep tissue imaging

Xiangcong XuRenlong ZhangChenggui LuoChi ZhangYanping LiDanying LinBin YuLiwei LiuXiaoyu WengYiping WangLingjie KongJia LiJunle QuaState Key Laboratory of Radio Frequency

Heterogeneous Integration, Key Laboratory of Optoelectronic Devices and Systems of Ministry of Education and Guangdong Province, College of Physics and Optoelectronic Engineering, Shenzhen University, Shenzhen 518060, ChinabState Key Laboratory of Precision Measurement Technology and Instruments, Department of Precision Instrument, Tsinghua University, Beijing 100084, China



**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 43, October 2025. <br/>
SignificanceThe significant contributions of this work are threefold. First, it leverages deep learning to extend in vivo imaging depth of two-photon excitation fluorescence microscopy, far beyond the depths a...

#### **⊗** Read full article:

https://www.pnas.org/doi/abs/10.1073/pnas.2503576122?af=R

# Neuron synchronization analyzed through spatial-temporal attention



FRONTIERS COMPUTATIONAL NEUROSCIENCE

**Summary:** Neuronal synchronization refers to the temporal coordination of activity across populations of neurons, a process that underlies coherent information processing, supports the encoding of diverse sensory stimuli, and facilitates adaptive behavior in dynamic environments. Previous studies of synchroni...

https://www.frontiersin.org/articles/10.3389/fncom.2025.1655462

# Modeling cognition through adaptive neural synchronization: a multimodal framework using EEG, fMRI, and reinforcement learning



FRONTIERS COMPUTATIONAL NEUROSCIENCE

**Summary:** IntroductionUnderstanding the cognitive process of thinking as a neural phenomenon remains a central challenge in neuroscience and computational modeling. This study addresses this challenge by presenting a biologically grounded framework that simulates adaptive decision making across cognitive stat...

https://www.frontiersin.org/articles/10.3389/fncom.2025.1616472

#### Sudden restructuring of memory representations in recurrent neural networks with repeated stimulus presentations

Jonathon R. Howlett

1 215 min words

FRONTIERS COMPUTATIONAL NEUROSCIENCE

Summary: While acquisition curves in human learning averaged at the group level display smooth, gradual changes in performance, individual learning curves across cognitive domains reveal sudden, discontinuous jumps in performance. Similar thresholding effects are a hallmark of a range of nonlinear systems wh...

Read full article:

https://www.frontiersin.org/articles/10.3389/fncom.2025.1601641

### Optimizing real-time phase detection in diverse rhythmic biological signals for phase-specific neurostimulation

Mengzhan Liufu, Zachary M Leveroni, Sameera Shridhar, Nan Zhou and Jai Y

2025-10-23

JOURNAL NEURAL ENGINEERING

Summary: Objective. Closed-loop, phase-specific neurostimulation is a powerful method to modulate ongoing brain activity for clinical and research applications. Phase-specific stimulation relies on estimating the phase of an ongoing oscillation in real time and issuing a control command at a target phase. Ph...

http://iopscience.iop.org/article/10.1088/1741-2552/ae10e1

## Multitarget neurostimulation of the deep brain: clinical opportunities, challenges, and emerging technologies

Michael J Del Sesto, Serban Negoita, Maria Bruzzone Giraldez, Zachary LaJoie, Khaleda Akhter Sathi, Joshua K Wong, Alik S Widge, Michael S Okun and Adam Khalifa







JOURNAL NEURAL ENGINEERING

Summary: Recent computational, pre-clinical, and clinical studies have demonstrated the potential for using neuromodulation through simultaneous targeting of multiple deep brain regions. This approach has already been used for therapeutic and systems neuroscience applications. However, the broad clinical ado...



http://iopscience.iop.org/article/10.1088/1741-2552/ae08ea

## The impact of CSF-filled cavities on scalp EEG and its **implications**







OOSTENVELD ROBERT

Summary: Previous studies have found electroencephalogram (EEG) amplitude and scalp topography differences between neurotypical and neurological/neurosurgical groups, being interpreted at the cognitive level. However, these comparisons are invariably accompanied by anatomical changes. Critical to EEG are the...

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## Motion-BIDS: an extension to the brain imaging data structure to organize motion data for reproducible research

Julius .

1 72 2024-07-02 min words OOSTENVELD ROBERT

Summary: We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalitie...

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#### One hundred years of EEG for brain and behaviour research









OOSTENVELD ROBERT

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## Freezing of gait in Parkinson's disease is related to imbalanced stopping-related cortical activity

Richard J A van

1 65 min words

OOSTENVELD ROBERT

Summary: Freezing of gait, characterized by involuntary interruptions of walking, is a debilitating motor symptom of Parkinson's disease that restricts people's autonomy. Previous brain imaging studies investigating the mechanisms underlying freezing were restricted to scan people in supine positions and yie...

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## The past, present, and future of the brain imaging data structure (BIDS)

Krzysztof J Gorgolewski 1 82 min words

**OOSTENVELD ROBERT** 

Summary: The Brain Imaging Data Structure (BIDS) is a community-driven standard for the organization of data and metadata from a growing range of neuroscience modalities. This paper is meant as a history of how the standard has developed and grown over time. We outline the principles behind the project, the ...

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## Human cortical high-gamma power scales with movement rate in healthy participants and stroke survivors

Fanny Quandt

1 65 min words

OOSTENVELD ROBERT

Summary: Motor cortical high-gamma oscillations (60-90 Hz) occur at movement onset and are spatially focused over the contralateral primary motor cortex. Although high-gamma oscillations are widely recognized for their significance in human motor control, their precise function on a cortical level remains el...

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## NIRS-BIDS: Brain Imaging Data Structure Extended to Near-**Infrared Spectroscopy**



1 70 min words

OOSTENVELD ROBERT

Summary: Functional near-infrared spectroscopy (fNIRS) is an increasingly popular neuroimaging technique that measures cortical hemodynamic activity in a non-invasive and portable fashion. Although the fNIRS community has been successful in disseminating open-source processing tools and a standard file forma...

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## Pseudonymisation of neuroimages and data protection: <em>Increasing access to data while retaining scientific utility</em>

Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld robert

Oostenveld robert

Summary: For a number of years, facial features removal techniques such as 'defacing', 'skull stripping' and 'face masking/blurring', were considered adequate privacy preserving tools to openly share brain images. Scientifically, these measures were already a compromise between data protection requirements a...

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## Cycling on the Freeway: The perilous state of open-source neuroscience software

1 74 min words

OOSTENVELD ROBERT

Summary: Most scientists need software to perform their research (Barker et al., 2020; Carver et al., 2022; Hettrick, 2014; Hettrick et al., 2014; Switters & Osimo, 2019), and neuroscientists are no exception. Whether we work with reaction times, electrophysiological signals, or magnetic resonance imaging data, ...

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## Optimal configuration of on-scalp OPMs with fixed channel counts

Robert 1 69
Oostenveld min words

OOSTENVELD ROBERT

Summary: Recent technological developments have brought optically pumped magnetometers (OPMs) within reach of the larger neuroscientific community. The current state-of-the-art consists of whole-head systems that measure the magnetic field at >100 locations. OPM sensors can be constructed to measure the fiel...

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## Six-Month Interim Analyses of the Efficacy of Repeated Low-**Level Red-Light Therapy Combined with Orthokeratology for Myopia Control in Spanish Children**

Fernando J Fernández-Velázquez

28 min words

LOW VISION

Summary: CONCLUSIONS: The six-month interim analysis indicates that combining RLRL therapy with OK effectively controls myopia progression in Spanish children, with no severe adverse effects. Long-term follow-up is ongoing.

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https://pubmed.ncbi.nlm.nih.gov/41165747/?

## Predictors of posttraumatic stress disorder among displaced families in Lebanon: A cross-sectional study

Rola Bou

1 72 LOW VISION min words

Summary: This study aimed to assess the prevalence of posttraumatic stress disorder (PTSD) among Lebanese individuals internally displaced by the recent conflict and to identify key predictors of PTSD. The findings are intended to guide targeted policy and advocacy strategies aimed at improving mental health...

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## Incidental ocular surface squamous neoplasia in pterygia: a systematic review and meta-analysis

1 47 min words

LOW VISION

Summary: CONCLUSIONS: This meta-analysis, based on low- to very low-certainty evidence, identified a 1.32% pooled prevalence of incidental OSSN in clinically diagnosed pterygia, highlighting the potential influence of UV exposure and equatorial proximity. The overlap in demographic and lesion characteristics...

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## The Hidden Benefits of Noise: Low-Frequency tRNS and **Dynamic Visual Noise Enhance Visual Processing**

Hulusi Kafaligonul 1 70 min words

Summary: Sensory and perceptual processing is inherently shaped by both internal and external noise sources. While noise is typically seen as disruptive, it can, under certain conditions, enhance the detection of weak sensory signals-a phenomenon known as stochastic resonance (SR). Research on SR has primari...

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## **Headaches due to Low and High Intracranial Pressure**

1 63 min words

LOW VISION

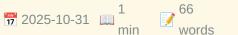
Summary: This article provides a comprehensive overview of high-pressure and lowpressure headaches, focusing on their pathophysiology, clinical presentation, diagnosis, and management. High-pressure headaches, often linked to idiopathic intracranial hypertension, primarily affect young women and can lead to...

#### Read full article:

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## **Synergistic Charge Generation and Collection Enabled by Incorporation of Crystalline Polymer for Ultrafast-Response Dual-Band Perovskite/Organic Photodetectors**







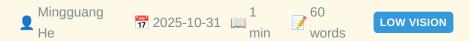
LOW VISION

Summary: Dual-band photodetectors (PDs) capable of selectively responding to both visible and near-infrared (NIR) light are essential for applications in optical communication, medical diagnostics, and artificial vision systems. In this work, we report a highperformance visible/NIR dual-band PD based on a v...

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https://pubmed.ncbi.nlm.nih.gov/41169105/?

## Diabetic retinopathy screening in Australian general practice: persistently low uptake despite national guidelines and equity initiatives



**Summary:** CONCLUSION: Despite national guidelines, GP-led DR screening uptake remains low, with substantial geographic, demographic and temporal disparities in Australian general practice settings. Addressing systemic barriers, strengthening GP-led screening, and implementing targeted interventions are crucia...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41169341/?

## **Rare Ocular Complication After Prone Position Surgery: Bilateral Subconjunctival Hemorrhage Following Endoscopic Lumbar Discectomy**









Summary: Subconjunctival hemorrhage (SCH) is a rare complication in spinal surgery and is even more uncommon in endoscopic procedures, which are typically of short duration. We report the case of a 32-year-old male who developed bilateral SCH after an uneventful L4-L5 lumbar endoscopic discectomy performed u...

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## A Rare Co-Occurrence of Gastric Heterotopia and Autonomic **Nervous System Dysfunction: An Attempt to Explain If There** Is a Need to Explore Possible Syndromic Link



1 62 Low Vision min words

Summary: Gastric heterotopia (GHT) is the presence of gastric mucosa outside the stomach, including in the rectum. A 59-year-old man presented with rectal bleeding and altered bowel habits, along with long-standing low blood pressure and erectile dysfunction. Investigations confirmed rectal GHT, initially ma...

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## Ocular Syphilis in an Immunocompetent Patient: Through the Lens



1 72 Low VISION min words





Summary: Ocular manifestations of syphilis can occur at any stage of the disease and present with a wide range of clinical features. If left untreated, they carry a high risk of permanent vision loss. Although syphilis mainly affects individuals with human immunodeficiency virus (HIV) positive and other immu...

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## The taste of trigeminal sensations: relation between taste, lingual tactile acuity, and spicy perception in patients with taste dysfunction

Thomas
Hummel

Thomas

Tactile Acuity

Thomas

Summary: In the oral cavity, oral stereognosis and chemesthesis refer to the abilities to recognize shapes and detect noxious substances, respectively, through various receptors distributed on the tongue. The absence of standardized methods to assess oral somatosensory perception has led to a lack of consens...

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## **Measuring the Distribution of Tactile Acuity at the Index Finger and Thumb Fingertips**

Hiroyuki

1 75
min words

TACTILE ACUITY

Summary: In our day-to-day activities, we utilize not only the pads of our fingers but also the sides and hemispherical tips when manipulating objects. For teleoperation systems to replicate these real-life interactions, tactile sensation must be presented and distributed across the entire fingertip. Thus, u...

#### Read full article:

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## Optimizing Vibrotactile Feedback for Sensory Substitution in the Thigh: Spatial Acuity and Frequency Characteristics

Leah R

Bent

1

2025-06-27

min

69

words

TACTILE ACUITY

**Summary:** Amputation of a lower limb not only affects mobility but also interferes with sensory feedback, leading to an elevated risk of falls among individuals living with amputation. Sensory substitution, achieved through tactile displays embedded in transfemoral prosthetic sockets, presents a promising non...

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## Directional vibro-tactile hazard warnings for drivers with vision impairments

Alex R

Bowers

1

80

min

words

TACTILE ACUITY

Summary: Vision impairment may delay responses to hazards when driving. In a proof-ofconcept driving simulator study, we evaluated a hazard warning device designed for vision impaired drivers. Three groups participated: 11 persons with central vision loss (CVL; median age 60 years), 12 with homonymous field...

#### 

https://pubmed.ncbi.nlm.nih.gov/40601880/?

## Sensitivity and vagal reactivity to C-tactile-mediated affective touch in mild cognitive impairment due to Alzheimer's disease







Summary: BackgroundC-tactile (CT) afferents preferentially activate in response to slow caress-like touch, evoking a diffuse pleasant sensation and promoting autonomic regulation. According to Braak's classic model, the neurodegenerative process in Alzheimer's disease (AD) only affects somatosensory cortices...

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## Differences in tactile grid localization accuracy between people with back pain compared to individuals without pain









**Summary:** OBJECTIVES: The study aimed to investigate the grid localization test (GLT) between patients with lower back pain and those without back pain.

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https://pubmed.ncbi.nlm.nih.gov/40850311/?

## **Eye Drop Instillation Success and Hand Function in Adults** with Glaucoma: A Pilot Study

Paula Anne Newman-Casev

1 74 TACTILE ACUITY words

Summary: CONCLUSIONS: Despite hand function deficits, in this exploratory pilot study, adults with glaucoma demonstrated eye drop instillation success comparable to those without glaucoma, though with higher rates of bottle tip contact with the eye, skin, or eyelashes, suggesting an increased risk of potenti...

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## Functional evidence for early origin of tactile acuity in the vertebrate somatosensory system

Sviatoslav N Bagriantsev

1 2025-09-13 min 58 words

TACTILE ACUITY

Summary: Mammals and reptiles possess a sophisticated somatosensory system for precise tactile discrimination via mechanosensory end-organs, such as Meissner and Pacinian corpuscles and others. These structures detect sustained pressure, velocity, and vibrations, thereby facilitating nuanced environmental in...

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https://pubmed.ncbi.nlm.nih.gov/40945511/?

## The coarse mental map of the breast is anchored on the nipple

Charles M

Greenspon

1

86

words

TACTILE ACUITY

Summary: Touch plays a key role in our perception of our body and shapes our interactions with the world, from the objects we manipulate to the people we touch. While the tactile sensibility of the hand has been extensively characterized, much less is known about touch on other parts of the body. Despite the...

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## **Haptic Feedback Systems for Lower-Limb Prosthetic** Applications: A Review of System Design, User Experience, and Clinical Insights









TACTILE ACUITY

Summary: Systems presenting haptic information have emerged as an important technological advance in assisting individuals with sensory impairments or amputations, where the aim is to enhance sensory perception or provide sensory substitution through tactile feedback. These systems provide information on lim...

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https://pubmed.ncbi.nlm.nih.gov/41007234/?

## A Biomimetic Fiber-Entangled Permeable Electronic Skin for Strain-Insensitive and High-Resolution Tactile Sensing







Summary: Electronic skins (e-skins) incorporating island architectures represent a promising platform for strain-insensitive tactile sensing by mechanically decoupling sensing units from deformations. However, conventional island designs encounter stress concentration issues caused by inherent modulus mismat...

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## **High-Density Tactile Sensor Array for Sub-Millimeter Texture** Recognition











Summary: High-density tactile sensor arrays that replicate human touch could restore texture perception in paralyzed individuals. However, conventional tactile sensor arrays face inherent trade-offs between spatial resolution, sensitivity, and crosstalk suppression due to microstructure size limitations and ...

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https://pubmed.ncbi.nlm.nih.gov/40871941/?

## A Diachronic Investigation of the Change in Form and Formational-Semantic Systematicity of the Chinese Sign Language Lexicon



**Summary:** It has been argued in previous research that several competing pressures guide the directions of language evolution (economy vs. redundancy; arbitrariness vs. systematicity). For sign languages, however, the effects of competing pressures on their change of lexical systems remain largely unclear. In...

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## Wireless Electrotactile System with Hydrogel-Based Electrodes for Conformal Tactile Interaction



**Summary:** A wireless epidermal electrotactile interface is demonstrated through integration of skin-conformal electrodes and flexible circuitry, addressing existing limitations in haptic technology caused by mechanical mismatch and system-level integration challenges. This electrotactile system achieves low s...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40891563/?

## Beyond access: rethinking assistive technology for individuals with visual impairments in Türkiye

Önder

1 55 min words

Summary: CONCLUSION: Despite demonstrating adaptability, individuals with VI in Türkiye face significant structural barriers to equitable AT access. Informal learning limited public support, and a lack of locally adapted tools contribute to digital exclusion. A rightsbased approach-emphasizing inclusive fun...

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## High prevalence of bacterial STI, anal HPV, cytological abnormalities and anal lesions among MSM in Togo, 2021: a baseline analysis of the ANRS I MIE 12,400/DepIST-H cohort



1 42 min words





Summary: CONCLUSIONS: These findings emphasize the high prevalence of STIs among MSM and confirm the unusual distribution of HPV types in West Africa, with HPV35 being highly prevalent. A national strategy regarding STI screening and HPV vaccination in this key population is needed.

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41013315/?

## Development and Assessment of a Novel Audiosensory Performance Method for Improving the Oral Health of Visually Impaired Children



**Summary:** This study evaluated the effectiveness of an audiosensory performance method in enhancing oral health knowledge and status among visually impaired children aged 6-12 years in the National Capital Region (NCR), Delhi. An interventional study design was used, involving 251 participants equally divided...

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https://pubmed.ncbi.nlm.nih.gov/41041413/?

## **Examining the ability of the interRAI communication** collaborative action plan to identify individuals with sensory challenges: A retrospective cohort study











Summary: CONCLUSIONS: The communication CAP was robust in flagging individuals with sensory impairments as these individuals are more likely to fall into the triggered to facilitate improvement group. The three case studies highlight the importance of assessing all aspects of communication (e.g., cognitive, ...

#### 

https://pubmed.ncbi.nlm.nih.gov/41127342/?

## **Analysis of Stability and Functionality of Coil and** Piezoelectric Braille Modules Under Varying Temperature Conditions



Robert P 1 2025-10-29 min 73 BRAILLE

Summary: In this study, the performance and reliability of two different types of Braille modules, i.e., coil and piezoelectric, under varying temperature conditions were compared. The coil module works on the principle of electromagnetic forces generated by coils, while the piezoelectric module is based on ...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41156359/?

utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=165yO28ehHLjXJb8W3J vTx2bYozdDe8IvyFRBIOfHZxFR8o1uX&fc=None&ff=20251101002136&v=2.18.0.post22+67771e2

## Challenges faced by visually impaired individuals from the perspective of faculty members: a phenomenological study









Summary: Visually impaired students in higher education face significant academic, social, and psychological barriers that are often overlooked by faculty. This phenomenological study explored these challenges at Hail University, Saudi Arabia, by purposively sampling six faculty members from the Colleges of ...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41169919/?

## Non-invasive brain stimulation combined with three rehabilitation approaches for cognitive and emotional well-being in Parkinson's patients



**Summary:** CONCLUSION: This study demonstrates that non-invasive brain stimulation combined with cognitive rehabilitation (CR) is the most effective approach for improving cognitive function in Parkinson's patients, while combined motor-cognitive rehabilitation (MCR) shows particular efficacy for emotional wel...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41164398/?

## Precision Neuromodulation for Diabetes-Associated **Cognitive Decline: a Transcranial Electrical Stimulation Approach**







Summary: CONCLUSION: These findings indicate that tDCS presents a promising, noninvasive therapeutic approach. It demonstrates potential for enhancing cognitive function in patients with DACD and for facilitating improved long-term glycemic control. This highlights the role of brain neuromodulation as a com...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41165160/?

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## The Hidden Benefits of Noise: Low-Frequency tRNS and **Dynamic Visual Noise Enhance Visual Processing**







TDCS TACS TRNS

Summary: Sensory and perceptual processing is inherently shaped by both internal and external noise sources. While noise is typically seen as disruptive, it can, under certain conditions, enhance the detection of weak sensory signals-a phenomenon known as stochastic resonance (SR). Research on SR has primari...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41167815/?

## A Comprehensive Review of Trigeminal Autonomic Cephalalgias







TDCS TACS TRNS

**Summary:** Trigeminal autonomic cephalalgias (TACs) are a distinct group of primary headache disorders characterized by unilateral pain and autonomic symptoms such as tearing, nasal congestion, and ptosis. This article provides an in-depth review of the different TAC subtypes, including cluster headache, short...

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## Effects on nonverbal numerical acuity performance after a single-session transient random noise stimulation over the intraparietal sulcus or dorsolateral prefrontal cortex







### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41168231/?

## Post-discharge use of opioids, psychostimulants, and treatment medications following residential opioid discontinuation with NET Device™ monotherapy







TDCS TACS TRNS

Summary: CONCLUSIONS: The randomized groups did not differ on outcomes. However, participants who self-administered active NET Device stimulation >24 hours reported significantly fewer post-discharge days of opioid or psychostimulant use than those who self-administered active <24 hours or sham, but these fi...

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https://pubmed.ncbi.nlm.nih.gov/41169495/?

## Anodal transcranial direct current stimulation does not alter GABA concentration or functional connectivity in the normal visual cortex







TDCS TACS TRNS

Summary: INTRODUCTION: Anodal direct current stimulation (a-tDCS) of the visual cortex is a potential rehabilitation tool for vision disorders such as amblyopia and macular degeneration. However, the underlying neural mechanisms are currently unknown. When applied to the human motor cortex, a-tDCS reduces th...

#### 

https://pubmed.ncbi.nlm.nih.gov/41169746/?

Can exercise therapy combined with transcranial direct current stimulation further improve balance ability in individuals with chronic ankle instability? A systematic review and meta-analysis







TDCS TACS TRNS

Summary: CONCLUSION: tDCS provides therapeutic benefits for dynamic balance only when combined with non-balance exercises. Current evidence is insufficient to demonstrate improvements in static balance with tDCS adjunctive therapy.

#### 

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## **Physical Therapy for Addiction**



Junzhi 1 61 Wu min words



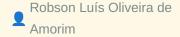
TDCS TACS TRNS

Summary: Physical therapy has the evidence-based scientific knowledge to address a wide range of physical and psychological problems of addiction. Neuromodulation techniques, including transcranial electrical stimulation (tES) methods like transcranial direct current stimulation (tDCS), transcranial alternat...

#### 

https://pubmed.ncbi.nlm.nih.gov/41171569/?

The Effects of Transcranial Direct Current Stimulation Over the Prefrontal Cortex on Reactive Aggressive Behavior in Healthy Volunteers: A Systematic Review and Meta-analysis of Randomized Controlled Trials







TDCS TACS TRNS

Summary: CONCLUSION: While the overall analysis did not show a significant effect of anodal on reactive aggressive behavior in healthy volunteers, the results suggest that online tDCS and unilateral tDCS may have a potential impact. Given the heterogeneity of the studies and outcome measures, further researc...

#### 

https://pubmed.ncbi.nlm.nih.gov/41172252/?

## A Study on Hemodynamic and Brain Network Characteristics During Upper Limb Movement in Children with Cerebral Hemiplegia Based on fNIRS



**Summary:** Background: Hemiplegic cerebral palsy (HCP) is a motor dysfunction disorder resulting from perinatal developmental brain injury, predominantly impairing upper limb function in children. Nonetheless, there has been insufficient research on the brain activation patterns and inter-brain coordination me...

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## Task-Dependent Neural Activity in the Posterior Parietal **Cortex Is Associated with Better Balance in Adults with Acquired Brain Injury**









Summary: Background/Objectives: There is scarce evidence on the neural underpinnings of balance in people with chronic acquired brain injury (ABI). Thus, the objective was to measure this in adults with ABI during four balance tasks and to examine the relationship between neural activity and balance performa...

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## Medication vs. Movement in ADHD: Interaction Between Medication and Physical Activity on Neurocognitive Functioning



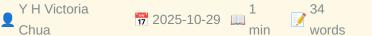
**Summary:** Background/Objectives: Movement during attention-demanding tasks may help compensate for cortical under-arousal in pediatric ADHD patients. However, the influence of medication during movement is unknown. This study assessed the impact of concurrent movement during executive functioning tasks on dor...

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https://pubmed.ncbi.nlm.nih.gov/41154201/?

## A Systematic Review of Inter-Brain Synchrony and Psychological Conditions: Stress, Anxiety, Depression, **Autism and Other Disorders**









**Summary:** CONCLUSIONS: Collectively, the findings support IBS as a potentially dynamic, condition-sensitive, and contextually modulated neurophysiological indicator of interpersonal functioning, with implications for diagnostics, intervention design, and the advancement of social neuroscience in clinical sett...

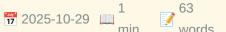
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## **DrSVision: A Machine Learning Tool for Cortical Region-**Specific fNIRS Calibration Based on Cadaveric Head MRI











Summary: Functional Near-Infrared Spectroscopy is (fNIRS) a non-invasive neuroimaging technique that monitors cerebral hemodynamic responses by measuring near-infrared (NIR) light absorption caused by changes in oxygenated and deoxygenated hemoglobin concentrations. While fNIRS has been widely used in cognit...

#### Read full article:

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## Early Motor Cortex Connectivity and Neuronal Reactivity in **Intracerebral Hemorrhage: A Continuous-Wave Functional Near-Infrared Spectroscopy Study**







Summary: Insights into motor cortex remodeling may enable the development of more effective rehabilitation strategies during the acute phase. We aim to assess the affected and unaffected motor/premotor/somatosensory cortex resting state functional connectivity (RSFC) and reactivity with continuous wave funct...

#### **⊗** Read full article:

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## Individual abilities to estimate levels of movement synchrony predict action observation network activation











Summary: Observers' ability to estimate levels of movement synchrony, such as in Olympic diving or rowing, is highly variable and, in part, constrained by personality traits and enjoyment of the movements. Embodiment also appears to play a crucial role, whereby stronger beliefs that one's body can complete p...

#### Read full article:

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The effects of combining anodal transcranial direct current stimulation with robot-assisted gait training on lower limb motor function and the motor cortex regulation of stroke patients



**Summary:** CONCLUSIONS: The combination of anodal tDCS and RAGT can enhance lower limb motor function in stroke patients, while also modulating the connectivity within the motor network. Additionally, the elevation of functional connectivity between the bilateral cerebral hemispheres, quantifiable through fNIR...

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## The Impact of Sports Experience on Map Symbol **Representation in Orienteering Athletes and Its Neural Correlates: Evidence from Eye-Tracking and fNIRS**











Summary: CONCLUSION: High-level orienteering athletes exhibit domain-specific cognitive advantages in map symbol representation tasks. Long-term orienteering map reading training facilitates synergistic interactions between visual and neural information processing.

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# The Impact of Teachers' Autonomy Support on Students' Academic Performance from the Perspective of Hyperscanning: the Mediating Role of Autonomy Need Satisfaction



**Summary:** Previous research on self-determination theory has primarily focused on analyzing experiences and behaviors, without fully elucidating the neural basis of how teacher autonomy support influences students' academic performance. In this study, four individuals were selected to act as teachers, while 4...

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## **Fatal Isolated Right Ventricular Rupture Without External Chest Injury in a Young Driver: Forensic Autopsy Findings** After a One-Sided Vehicle Collision







BRAIN COMPUTER INTERFACE

**Summary:** Traumatic deaths are common, with cardiac trauma affecting 7–12% of patients with thoracic injuries. Blunt cardiac injury (BCI), although rare, is associated with a high mortality rate. This report presents a case of blunt cardiac rupture (BCR) observed at autopsy despite the absence of external che...

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# Comparative analysis across diverse plant species reveals superior antibiofilm efficacy and dose-dependency of root extracts compared to leaf extracts







BRAIN COMPUTER INTERFACE

Summary: Although both root- and leaf-derived plant extracts hold potential as antibiofilm agents, research has predominantly focused on leaf tissues. In this study, we systematically compared the antibiofilm efficacy of 158 root and 248 leaf extracts from 360 plant species across five concentrations (0.1, 0...

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# An Active, Multimodal Neural Interface for Real-Time Monitoring of Cortical Electrical, Thermal, and Optical **Dynamics**







BRAIN COMPUTER INTERFACE

Summary: Chronic neurophysiological monitoring devices facilitate the timely diagnosis and treatment of episodic or recurrent neurological disorders. Compared with passive electrodes, silicon-based active transistors provide intrinsic signal amplification and, when combined with capacitive-coupling measureme...

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## Feasibility of decoding cerebellar movement-related potentials for brain-computer interface applications









BRAIN COMPUTER INTERFACE

Summary: 
In Brain-Computer Interface (BCI) applications, signals are conventionally acquired from the cerebrum, and only a subset of the complex interactions that occur in several areas of the brain are collected. One area that has not been investigated for BCI application is the cerebellum, despite its...

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# Acute Effects of Portable Dry-EEG Neurofeedback on **Classical Chinese Learning: A Three-Arm Repeated-Measures** Study









BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: Portable dry-electrode EEG systems can reliably support realtime neurofeedback to enhance attention and cognitive control in complex language learning contexts. This study provides empirical validation for deploying dry-EEG sensors in adaptive educational technologies and contributes t...

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## The effect of perceived auditory feedback on speech Brain-**Computer Interface decoding performance**







BRAIN COMPUTER INTERFACE

Summary: OBJECTIVE: Brain-Computer Interfaces (BCI) provide alternative means of communication for individuals with severe motor impairment. Implantable speech BCIs have shown great potential, particularly in individuals who could still produce some speechrelated movements and/or sounds. As perception of au...

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https://pubmed.ncbi.nlm.nih.gov/41167038/?

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# The influence of different visual eccentricity on SSVEPs elicited by ultra-low frequency visual stimulation in the lower peripheral visual field

Xiaogang 1 70
Chen min words

BRAIN COMPUTER INTERFACE

Summary: Steady-state visual evoked potential (SSVEP)-based brain-computer interfaces (BCIs) have been widely explored due to their high information transfer rate (ITR) and minimal training requirements. Traditional SSVEP-based BCIs typically use low- and medium-frequency visual stimuli from the central visu...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41169537/?

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## Towards neuroadaptive chatbots: a feasibility study



1 73 min words





BRAIN COMPUTER INTERFACE

Summary: INTRODUCTION: Large-language models (LLMs) are transforming most industries today and are set to become a cornerstone of the human digital experience. While integrating explicit human feedback into the training and development of LLM-based chatbots has been integral to the progress we see nowadays, ...

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## A Novel Binocular-Encoded SSVEP Framework for Efficient **VR-Based Brain-Computer Interface**







BRAIN COMPUTER INTERFACE

Summary: This paper presents a novel binocular-encoded SSVEP (beSSVEP) method, leveraging binocular vision in virtual reality (VR) to enhance brain-computer interface (BCI) applications. We introduce the Binocular Periodically Repeated Component Analysis (bPRCA) algorithm, designed to address the unique char...

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# A novel channel reduction concept to enhance the classification of motor imagery tasks in brain-computer interface systems



Hua
Wang

Wang

Wang

Wang

Words

Words

Summary: Electroencephalogram (EEG) signals play a critical role in advancing braincomputer interface (BCI) systems, particularly for detecting motor imagery (MI) movements. However, analysing large volume of EEG datasets faces some challenges due to redundant information, and performance degradation. Irrel...

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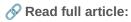
## Why Should I Care What Color the Bikeshed Is?







Summary: <a href="https://news.ycombinator.com/item?id=45686678">Comments</a>



https://www.bikeshed.com/

## **Futurelock: A subtle risk in async Rust**

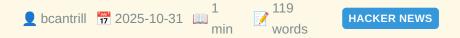


Summary: <a href="https://news.ycombinator.com/item?id=45774086">Comments</a>



https://rfd.shared.oxide.computer/rfd/0609

## **Futurelock: A subtle risk in async Rust**



**Summary:** This RFD describes our distillation of a really gnarly issue that we hit in the Oxide control plane.[0] Not unlike our discovery of the async cancellation issue[1][2][3], this is larger than the issue itself -- and worse, the program that hits futurelock is correct from the programmer's point of...

#### **⊗** Read full article:

https://rfd.shared.oxide.computer/rfd/0609

#### Type S and M errors as a "rhetorical tool"

noreply@blogger.com (Daniel

17 2025-09-28 min 3572 words

TWENTY PERCENT STATISTICIAN

**Summary:** <i>Update 30/09/2025: I have added a reply by Andrew Gelman below my original blog post.</i>&nbsp;We recently posted a preprint criticizing the idea of Type S and M errors (<a href="https://osf.io/2phzb\_v1">https://osf.io/2phzb\_v1</a>). From our abstract: "While these concepts have been pr...

http://daniellakens.blogspot.com/2025/09/type-s-and-m-errors-as-rhetorical-tool.html

## Why we should stop using statistical techniques that have not been adequately vetted by experts in psychology

noreply@blogger.com (Daniel

27 5516 min words

TWENTY PERCENT STATISTICIAN

Summary: <span lang="EN-US">In a recent post on Bluesky, where Richard Morey reflects on a paper he published with Clintin Davis-Stober that points out concerns with the p-curve method </span><span lang="EN-US">(Morey & Davis-Stober, 2025)</span><span lang="EN-US">, he writes:</span> <p cla...

http://daniellakens.blogspot.com/2025/10/why-we-should-stop-using-statistical.html











#### 

https://brain.ieee.org/publications/neuroethics-framework/education/standards-education/educationstandards/

#### **Education: Additional Resources**









Summary: Buckingham Shum, S. (2022). The UTS "EdTech Ethics" Deliberative Democracy Consultation: Rationale, Process and Outcomes. Connected Intelligence Centre, University of Technology Sydney, AUS. https://cic.uts.edu.au/projects/edtech-ethics León Declaration on European neurotechnology (2023): a human-fo...

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https://brain.ieee.org/publications/neuroethics-framework/education/educational-and-training-resourceseducation/education-additional-resources/

#### **Education: References**



1 61 min words



BRAIN

Summary: [1] OECD "Neurotechnology Toolkit To support policymakers in implementing the OECD Recommendation on Responsible Innovation in Neurotechnology," 2024.: https://www.oecd.org/content/dam/oecd/en/topics/policy-sub-issues/emerging-technologies/ neurotech-toolkit.pdf. [2] van Kesteren and Meeter, 2020 htt...

https://brain.ieee.org/publications/neuroethics-framework/education/references/education-references/

### **IEEE Brain Annual Flagship Workshop a Success**









Summary: IEEE Brain once again hosted the IEEE Brain Discovery and Neurotechnology Workshop as a satellite event to the 2024 Society of Neuroscience Workshop (SfN). Approximately 180 attended the two-day event, which was held at the University of Illinois Chicago (UIC), October 3-4, 2024 (Figure 1). Groundbr...

https://brain.ieee.org/braininsight-articles/ieee-brain-annual-flagship-workshop-a-success/

### **IEEE Brain Workshop on AI for Neurotechnology**



**Summary:** The IEEE Brain Workshop on AI for Neurotechnology was held on June 30, 2024, at the Pacifico Yokohama Conference Center in Japan. This event was part of the World Congress on Computational Intelligence (WCCI 2024) and was conducted in association with the International Joint Conference on Neural Net...

#### 

https://brain.ieee.org/braininsight-articles/ieee-brain-workshop-on-ai-for-neurotechnology/

### **Call for Papers: IEEE Brain Special Issue**



**Summary:** In a unique interdisciplinary collaboration with the IEEE's Society on Social Implications of Technology (SSIT) and IEEE Brain, J-FLEX is joining forces to explore both the technology of the Internet-of-Medical-Things (IoMT) solutions and medical wearables/implantables.

#### 

https://brain.ieee.org/braininsight-articles/ieee-journal-on-flexible-electronics/

#### **IEEE Brain Joins the American Brain Coalition**

**Summary:** IEEE Brain is pleased to announce its acceptance as a nonprofit member of the American Brain Coalition (ABC), a prestigious alliance of over 150 organizations dedicated to advancing brain research, advocacy, and improving treatments for individuals affected by brain conditions. The ABC Board has ent...

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https://brain.ieee.org/braininsight-articles/ieee-brain-joins-the-american-brain-coalition-as-a-nonprofit-member/

# Call for Papers: IEEE Transactions on Human-Machine Systems



**Summary:** Special Issue on Brain Discovery and Neurotechnology: Featured Research from 2024 IEEE Brain Discovery & Neurotechnology Workshop This special issue is motivated by the success of the IEEE Brain Discovery and Neurotechnology Workshop held in October 2024. This annual workshop is sponsore...

#### 

https://brain.ieee.org/braininsight-articles/call-for-papers-ieee-transactions-on-human-machine-systems/

## **Evaluation on Human Perception of Various Vibrotactile Encoding Methods Through a High Density Haptic Feedback** Interface

1 197 min words

TRANSACTIONS HAPTICS

Summary: High density (HD) haptic interfaces have become increasingly common for entertainment thanks to advancements in virtual reality technology, however their flexibility may make them a useful sensory substitution interface for motor rehabilitation. Yet little research has explored how users interpret d...

**⊗** Read full article:

http://ieeexplore.ieee.org/document/10994678

## **Enhancing Video Experiences for DHH Individuals Through Sound-Inspired Motion Caption-Based Spatiotemporal Tacton**

1 146 min words





TRANSACTIONS HAPTICS

Summary: When deaf and hard of hearing (DHH) individuals watch videos, captions are essential for them to understand the linguistic content. Current captions, however, are not suitable for conveying non-verbal sound information, such as background music, sound effects, or speech nuances. In this paper, we de...

Read full article:

## VibTac: A High-Resolution High-Bandwidth Tactile Sensing Finger for Multi-Modal Perception in Robotic Manipulation

1 169 min words

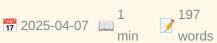
TRANSACTIONS HAPTICS

Summary: Tactile sensing is pivotal for enhancing robot manipulation abilities by providing crucial feedback for localized information. However, existing sensors often lack the necessary resolution and bandwidth required for intricate tasks. To address this gap, we introduce VibTac, a novel multi-modal tacti...

http://ieeexplore.ieee.org/document/10965524

## **Age-Related Impact in Illusory Torque Cues Induced by Asymmetric Vibrations**





TRANSACTIONS HAPTICS

Summary: Illusory pulling sensations in the translational or rotational direction are induced by asymmetric vibrations applied to the fingertips. Although previous studies have discussed the involvement of mechanoreceptors associated with skin deformation and spatial processing in the parietal association co...

## A Force/Torque Taxonomy for Classifying States During **Physical Co-Manipulation**

1 149 min words

TRANSACTIONS HAPTICS

**Summary:** Achieving seamless human-robot collaboration requires a deeper understanding of how agents manage and communicate forces during shared tasks. Force interactions during collaborative manipulation are inherently complex, especially when considering how they evolve over time. To address this complexity...

http://ieeexplore.ieee.org/document/11037651

## Haptic Relocation Away From the Fingertip: Where, Why, and How



TRANSACTIONS HAPTICS

Summary: Tactile haptic devices are often designed to render meaningful, complex, and realistic touch-based information on users' skin. While fingertips and hands are the most preferred body locations to render haptic feedback, recent trends allow such feedback to be extended to alternative body locations (e...

Read full article:

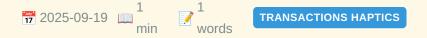
### **Tactile-Thermal Interactions: Cooperation and Competition**

1 198 TRANSACTIONS HAPTICS

**Summary:** This review focuses on the interactions between the cutaneous senses, and in particular touch and temperature, as these are the most relevant for developing skin-based display technologies for use in virtual reality (VR) and for designing multimodal haptic devices. A broad spectrum of research is re...

http://ieeexplore.ieee.org/document/10918829

# **Twenty Years of World Haptics: Retrospective and Future Directions**



http://ieeexplore.ieee.org/document/11174044

#### **Table of Contents**









TRANSACTIONS HAPTICS



http://ieeexplore.ieee.org/document/11174042

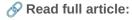
## A Survey of Few-Shot Learning for Biomedical Time Series





REVIEWS BIOMEDICAL ENGINEERING

Summary: Advancements in wearable sensor technologies and the digitization of medical records have contributed to the unprecedented ubiquity of biomedical time series data. Data-driven models have tremendous potential to assist clinical diagnosis and improve patient care by improving long-term monitoring cap...



# Foundation Model for Advancing Healthcare: Challenges, **Opportunities and Future Directions**

1 214 min words

REVIEWS BIOMEDICAL ENGINEERING

Summary: Foundation model, trained on a diverse range of data and adaptable to a myriad of tasks, is advancing healthcare. It fosters the development of healthcare artificial intelligence (AI) models tailored to the intricacies of the medical field, bridging the gap between limited AI models and the varied n...

http://ieeexplore.ieee.org/document/10750441

### **Call for 2025 Society Awards Nominations**

Deidre

2025-02-03 min 15 words

**EMBS** 

**Summary:** The post <a href="https://www.embs.org/awards/society-awards/" #new tab">Call for 2025 Society Awards Nominations</a> appeared first on <a href="https://www.embs.org">IEEE EMBS</a>.

https://www.embs.org/awards/society-awards/#new tab

### **Bridging Biotech: Regional shifts and patterns**



**Summary:** The post <a href="https://www.embs.org/blog-post/regional-shifts-and-patterns/">Bridging Biotech: Regional shifts and patterns</a> appeared first on <a href="https://www.embs.org">IEEE EMBS</a>.

https://www.embs.org/blog-post/regional-shifts-and-patterns/

# Welcoming Dr. Ana Kyani as the New Women in Biomedical Engineering Chair for IEEE EMBS



**Summary:** The post <a href="https://www.embs.org/blog-post/welcoming-dr-ana-kyani-as-wibme-chair-ieee-embs/">Welcoming Dr. Ana Kyani as the New Women in Biomedical Engineering Chair for IEEE EMBS</a> appeared first on <a href="https://www.embs.org">IEEE EMBS</a> <a href="https://www.embs.org">IEEE EMBS</a href="https://www.embs.org">IEEE EMBS</a> <a href="https://www.embs.org">IEEE EMBS</a href="https://www.embs.org">IEEE EMBS</a href="https://www.embs.org">IEEE EMBS</a href="https://www.embs.org">IEEE EMBS</a href="https://www.embs.org">IEEE EMBS</a href="https://www.embs.org">IEEE EMBS</a> <a href="https://www.embs.org">IEEE EMBS</a href="https://www.embs.org">IEEE EMBS</a href="ht

**Read full article:** 

https://www.embs.org/blog-post/welcoming-dr-ana-kyani-as-wibme-chair-ieee-embs/

### Ivan Lee, Appointed Editor-in-Chief of EMBC Proceedings







EMBS

Summary: The post <a href="https://www.embs.org/press/embc-eicsunghoon-ivan-lee/#new tab">Ivan Lee, Appointed Editor-in-Chief of EMBC Proceedings</ a> appeared first on <a href="https://www.embs.org">IEEE EMBS</a>.



https://www.embs.org/press/embc-eic-sunghoon-ivan-lee/#new\_tab

# Effect of an auditory static distractor on the perception of an auditory moving target







ARXIV QBIO NC

Summary: arXiv:2510.25119v2 Announce Type: replace Abstract: It is known that listeners lose the ability to discriminate the direction of motion of a revolving sound (clockwise vs. counterclockwise) beyond a critical velocity ("the upper limit"), primarily due to degraded front-back discrimination. Little i...



https://arxiv.org/abs/2510.25119

## Correlation between cerebral small vessel disease and latelife depression: Insights from neuroimaging studies

BRAIN RESEARCH

Summary: Publication date: 1 December 2025<b>Source:</b> Brain Research, Volume 1868Author(s): Yucun Chen, Qianqian Kong, Ziyue Wang, Jiacheng Li, Yiming Luo, Yi Zhang, Zhiyuan Yu, Hao Huang, Xiang Luo

Read full article:

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# Cortical modulation by exogenous electric fields is consistent with electric dipoles



**NEUROSCIENCE JOURNAL** 

Summary: Publication date: 28 November 2025<b>Source:</b> Neuroscience, Volume 589Author(s): Joana Covelo, Jaume Colom, Julia Weinert, Mattia D'Andola, Alain Destexhe, Maria V. Sanchez-Vives

Read full article:

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## Sex differences in sleep fragmentation in 5xFAD mice

**NEUROSCIENCE JOURNAL** 

Summary: Publication date: 28 November 2025<b>Source:</b> Neuroscience, Volume 589Author(s): Kaitlyn J. Kim, Angel-Rose L. Villegas, Amanda R. Kelley, Edwin M. Labut, Tory M. Hagen, Kathy R. Magnusson, Heidi Kloefkorn</

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https://www.sciencedirect.com/science/article/pii/S0306452225010279?dgcid=rss\_sd\_all

## An interpretable Bayesian framework for Alzheimer's disease prediction with uncertainty quantification



**NEUROSCIENCE JOURNAL** 

**Summary:** Publication date: 28 November 2025<b>Source:</b> Neuroscience, Volume 589Author(s): Ratnadeep Das, Atri Chatterjee, Sitikantha Roy

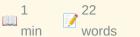


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# Affective dimensions of emotional memory shape corticospinal excitability in the upper and lower limbs in young males



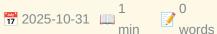


NEUROSCIENCE JOURNAL

Summary: Publication date: 28 November 2025<b>Source:</b> Neuroscience, Volume 589Author(s): Yume Mashiki, Naotsugu Kaneko, Daiki Yamasaki, Tatsuya Kato, Keiichi Ishikawa, Ryogo Takahashi, Kimitaka Nakazawa

https://www.sciencedirect.com/science/article/pii/S0306452225010267?dgcid=rss\_sd\_all

## A neural compass for real-world navigation







NATURE NEUROSCIENCE SUBJECTS

https://www.nature.com/articles/s41583-025-00994-3

# Affective tactile comfort: is a specialized sensory system involved?



**S** Read full article:

https://www.nature.com/articles/s41583-025-00993-4

## Falling asleep follows a predictable bifurcation dynamic



**Summary:** Nature Neuroscience, Published online: 28 October 2025; <a href="https://www.nature.com/articles/s41593-025-02091-1">doi:10.1038/s41593-025-02091-1</a>
p>Li et al. propose a conceptual framework to study the phenomenon of falling asleep based on electroencephalogram data. They show that a tippin...

https://www.nature.com/articles/s41593-025-02091-1

## **Evidence from 7 Tesla fMRI of intrinsic network supporting** allostasis in the human brain

1 59 NATURE NEUROSCIENCE words

Summary: Nature Neuroscience, Published online: 28 October 2025; <a href="https://"><a href="https://"></a> www.nature.com/articles/s41593-025-02089-9">doi:10.1038/s41593-025-02089-9</a> p>Functional connectivity analyses using ultra-high precision 7 Tesla functional MRI identified a unified system for allostasis and interoceptio...

https://www.nature.com/articles/s41593-025-02089-9

# Correction: Pre-training, personalization, and self-calibration: all a neural network-based myoelectric decoder needs







FRONTIERS NEUROROBOTICS

Read full article:

https://www.frontiersin.org/articles/10.3389/fnbot.2025.1675642

## End-to-end robot intelligent obstacle avoidance method based on deep reinforcement learning with spatiotemporal transformer architecture

FRONTIERS NEUROROBOTICS

Summary: To enhance the obstacle avoidance performance and autonomous decisionmaking capabilities of robots in complex dynamic environments, this paper proposes an end-to-end intelligent obstacle avoidance method that integrates deep reinforcement learning, spatiotemporal attention mechanisms, and a Transfo...

**⊗** Read full article:

https://www.frontiersin.org/articles/10.3389/fnbot.2025.1646336

## The impact of CSF-filled cavities on scalp EEG and its **implications**

Maria Carla

Piastra

1

2024-06-14

min

words



OOSTENVELD ROBERT

Summary: Previous studies have found electroencephalogram (EEG) amplitude and scalp topography differences between neurotypical and neurological/neurosurgical groups, being interpreted at the cognitive level. However, these comparisons are invariably accompanied by anatomical changes. Critical to EEG are the...

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## Motion-BIDS: an extension to the brain imaging data structure to organize motion data for reproducible research

Julius

1 72 2024-07-02 min words OOSTENVELD ROBERT

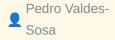
Summary: We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalitie...

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## One hundred years of EEG for brain and behaviour research









OOSTENVELD ROBERT

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## Freezing of gait in Parkinson's disease is related to imbalanced stopping-related cortical activity

Richard J A van

1 65 min words

OOSTENVELD ROBERT

Summary: Freezing of gait, characterized by involuntary interruptions of walking, is a debilitating motor symptom of Parkinson's disease that restricts people's autonomy. Previous brain imaging studies investigating the mechanisms underlying freezing were restricted to scan people in supine positions and yie...

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## The past, present, and future of the brain imaging data structure (BIDS)

Krzysztof J Gorgolewski 1 82 min words

**OOSTENVELD ROBERT** 

Summary: The Brain Imaging Data Structure (BIDS) is a community-driven standard for the organization of data and metadata from a growing range of neuroscience modalities. This paper is meant as a history of how the standard has developed and grown over time. We outline the principles behind the project, the ...

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## Human cortical high-gamma power scales with movement rate in healthy participants and stroke survivors

Fanny Quandt

1 65 min words

OOSTENVELD ROBERT

Summary: Motor cortical high-gamma oscillations (60-90 Hz) occur at movement onset and are spatially focused over the contralateral primary motor cortex. Although high-gamma oscillations are widely recognized for their significance in human motor control, their precise function on a cortical level remains el...

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## NIRS-BIDS: Brain Imaging Data Structure Extended to Near-**Infrared Spectroscopy**



1 70 min words

OOSTENVELD ROBERT

Summary: Functional near-infrared spectroscopy (fNIRS) is an increasingly popular neuroimaging technique that measures cortical hemodynamic activity in a non-invasive and portable fashion. Although the fNIRS community has been successful in disseminating open-source processing tools and a standard file forma...

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## Pseudonymisation of neuroimages and data protection: <em>Increasing access to data while retaining scientific utility</em>

Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld robert

Oostenveld robert

Summary: For a number of years, facial features removal techniques such as 'defacing', 'skull stripping' and 'face masking/blurring', were considered adequate privacy preserving tools to openly share brain images. Scientifically, these measures were already a compromise between data protection requirements a...

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## Cycling on the Freeway: The perilous state of open-source neuroscience software

1 74 min words

OOSTENVELD ROBERT

Summary: Most scientists need software to perform their research (Barker et al., 2020; Carver et al., 2022; Hettrick, 2014; Hettrick et al., 2014; Switters & Osimo, 2019), and neuroscientists are no exception. Whether we work with reaction times, electrophysiological signals, or magnetic resonance imaging data, ...

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## Optimal configuration of on-scalp OPMs with fixed channel counts

Robert 1 69
Oostenveld min words

OOSTENVELD ROBERT

Summary: Recent technological developments have brought optically pumped magnetometers (OPMs) within reach of the larger neuroscientific community. The current state-of-the-art consists of whole-head systems that measure the magnetic field at >100 locations. OPM sensors can be constructed to measure the fiel...

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# Six-Month Interim Analyses of the Efficacy of Repeated Low-**Level Red-Light Therapy Combined with Orthokeratology for Myopia Control in Spanish Children**

Fernando J Fernández-Velázquez

28 min words

LOW VISION

Summary: CONCLUSIONS: The six-month interim analysis indicates that combining RLRL therapy with OK effectively controls myopia progression in Spanish children, with no severe adverse effects. Long-term follow-up is ongoing.

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## Predictors of posttraumatic stress disorder among displaced families in Lebanon: A cross-sectional study

Rola Bou

1 72 LOW VISION min words

Summary: This study aimed to assess the prevalence of posttraumatic stress disorder (PTSD) among Lebanese individuals internally displaced by the recent conflict and to identify key predictors of PTSD. The findings are intended to guide targeted policy and advocacy strategies aimed at improving mental health...

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# Incidental ocular surface squamous neoplasia in pterygia: a systematic review and meta-analysis

1 47 min words

LOW VISION

Summary: CONCLUSIONS: This meta-analysis, based on low- to very low-certainty evidence, identified a 1.32% pooled prevalence of incidental OSSN in clinically diagnosed pterygia, highlighting the potential influence of UV exposure and equatorial proximity. The overlap in demographic and lesion characteristics...

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## The Hidden Benefits of Noise: Low-Frequency tRNS and **Dynamic Visual Noise Enhance Visual Processing**

Hulusi Kafaligonul 1 70 min words

Summary: Sensory and perceptual processing is inherently shaped by both internal and external noise sources. While noise is typically seen as disruptive, it can, under certain conditions, enhance the detection of weak sensory signals-a phenomenon known as stochastic resonance (SR). Research on SR has primari...

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## **Headaches due to Low and High Intracranial Pressure**

1 63 min words

LOW VISION

Summary: This article provides a comprehensive overview of high-pressure and lowpressure headaches, focusing on their pathophysiology, clinical presentation, diagnosis, and management. High-pressure headaches, often linked to idiopathic intracranial hypertension, primarily affect young women and can lead to...

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# **Synergistic Charge Generation and Collection Enabled by Incorporation of Crystalline Polymer for Ultrafast-Response Dual-Band Perovskite/Organic Photodetectors**







LOW VISION

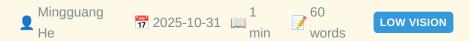
Summary: Dual-band photodetectors (PDs) capable of selectively responding to both visible and near-infrared (NIR) light are essential for applications in optical communication, medical diagnostics, and artificial vision systems. In this work, we report a highperformance visible/NIR dual-band PD based on a v...

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## Diabetic retinopathy screening in Australian general practice: persistently low uptake despite national guidelines and equity initiatives



**Summary:** CONCLUSION: Despite national guidelines, GP-led DR screening uptake remains low, with substantial geographic, demographic and temporal disparities in Australian general practice settings. Addressing systemic barriers, strengthening GP-led screening, and implementing targeted interventions are crucia...

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## **Rare Ocular Complication After Prone Position Surgery: Bilateral Subconjunctival Hemorrhage Following Endoscopic Lumbar Discectomy**









Summary: Subconjunctival hemorrhage (SCH) is a rare complication in spinal surgery and is even more uncommon in endoscopic procedures, which are typically of short duration. We report the case of a 32-year-old male who developed bilateral SCH after an uneventful L4-L5 lumbar endoscopic discectomy performed u...

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## A Rare Co-Occurrence of Gastric Heterotopia and Autonomic **Nervous System Dysfunction: An Attempt to Explain If There** Is a Need to Explore Possible Syndromic Link



1 62 Low Vision min words



Summary: Gastric heterotopia (GHT) is the presence of gastric mucosa outside the stomach, including in the rectum. A 59-year-old man presented with rectal bleeding and altered bowel habits, along with long-standing low blood pressure and erectile dysfunction. Investigations confirmed rectal GHT, initially ma...

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### Ocular Syphilis in an Immunocompetent Patient: Through the Lens



1 72 Low VISION min words





Summary: Ocular manifestations of syphilis can occur at any stage of the disease and present with a wide range of clinical features. If left untreated, they carry a high risk of permanent vision loss. Although syphilis mainly affects individuals with human immunodeficiency virus (HIV) positive and other immu...

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## The taste of trigeminal sensations: relation between taste, lingual tactile acuity, and spicy perception in patients with taste dysfunction

Thomas
Hummel

Thomas

Tactile Acuity

Thomas

Summary: In the oral cavity, oral stereognosis and chemesthesis refer to the abilities to recognize shapes and detect noxious substances, respectively, through various receptors distributed on the tongue. The absence of standardized methods to assess oral somatosensory perception has led to a lack of consens...

#### **⊗** Read full article:

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## **Measuring the Distribution of Tactile Acuity at the Index Finger and Thumb Fingertips**

Hiroyuki

1 75
min words

TACTILE ACUITY

Summary: In our day-to-day activities, we utilize not only the pads of our fingers but also the sides and hemispherical tips when manipulating objects. For teleoperation systems to replicate these real-life interactions, tactile sensation must be presented and distributed across the entire fingertip. Thus, u...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40526544/?

## Optimizing Vibrotactile Feedback for Sensory Substitution in the Thigh: Spatial Acuity and Frequency Characteristics

Leah R

Bent

1

69

words

TACTILE ACUITY

**Summary:** Amputation of a lower limb not only affects mobility but also interferes with sensory feedback, leading to an elevated risk of falls among individuals living with amputation. Sensory substitution, achieved through tactile displays embedded in transfemoral prosthetic sockets, presents a promising non...

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## Directional vibro-tactile hazard warnings for drivers with vision impairments

Alex R

Bowers

1

80

min

words

TACTILE ACUITY

Summary: Vision impairment may delay responses to hazards when driving. In a proof-ofconcept driving simulator study, we evaluated a hazard warning device designed for vision impaired drivers. Three groups participated: 11 persons with central vision loss (CVL; median age 60 years), 12 with homonymous field...

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https://pubmed.ncbi.nlm.nih.gov/40601880/?

## Sensitivity and vagal reactivity to C-tactile-mediated affective touch in mild cognitive impairment due to Alzheimer's disease





Summary: BackgroundC-tactile (CT) afferents preferentially activate in response to slow caress-like touch, evoking a diffuse pleasant sensation and promoting autonomic regulation. According to Braak's classic model, the neurodegenerative process in Alzheimer's disease (AD) only affects somatosensory cortices...

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## Differences in tactile grid localization accuracy between people with back pain compared to individuals without pain









**Summary:** OBJECTIVES: The study aimed to investigate the grid localization test (GLT) between patients with lower back pain and those without back pain.

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https://pubmed.ncbi.nlm.nih.gov/40850311/?

## **Eye Drop Instillation Success and Hand Function in Adults** with Glaucoma: A Pilot Study

Paula Anne Newman-Casev

1 74 TACTILE ACUITY words

Summary: CONCLUSIONS: Despite hand function deficits, in this exploratory pilot study, adults with glaucoma demonstrated eye drop instillation success comparable to those without glaucoma, though with higher rates of bottle tip contact with the eye, skin, or eyelashes, suggesting an increased risk of potenti...

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## Functional evidence for early origin of tactile acuity in the vertebrate somatosensory system

Sviatoslav N Bagriantsev

1 2025-09-13 min 58 words

TACTILE ACUITY

Summary: Mammals and reptiles possess a sophisticated somatosensory system for precise tactile discrimination via mechanosensory end-organs, such as Meissner and Pacinian corpuscles and others. These structures detect sustained pressure, velocity, and vibrations, thereby facilitating nuanced environmental in...

#### 

https://pubmed.ncbi.nlm.nih.gov/40945511/?

## The coarse mental map of the breast is anchored on the nipple

Charles M

Greenspon

1

86

min

words

TACTILE ACUITY

Summary: Touch plays a key role in our perception of our body and shapes our interactions with the world, from the objects we manipulate to the people we touch. While the tactile sensibility of the hand has been extensively characterized, much less is known about touch on other parts of the body. Despite the...

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## **Haptic Feedback Systems for Lower-Limb Prosthetic** Applications: A Review of System Design, User Experience, and Clinical Insights









TACTILE ACUITY

Summary: Systems presenting haptic information have emerged as an important technological advance in assisting individuals with sensory impairments or amputations, where the aim is to enhance sensory perception or provide sensory substitution through tactile feedback. These systems provide information on lim...

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## A Biomimetic Fiber-Entangled Permeable Electronic Skin for Strain-Insensitive and High-Resolution Tactile Sensing



1 57 min words

Summary: Electronic skins (e-skins) incorporating island architectures represent a promising platform for strain-insensitive tactile sensing by mechanically decoupling sensing units from deformations. However, conventional island designs encounter stress concentration issues caused by inherent modulus mismat...

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## **High-Density Tactile Sensor Array for Sub-Millimeter Texture** Recognition



Min 1 64
Zhang min words

BRAILLE

Summary: High-density tactile sensor arrays that replicate human touch could restore texture perception in paralyzed individuals. However, conventional tactile sensor arrays face inherent trade-offs between spatial resolution, sensitivity, and crosstalk suppression due to microstructure size limitations and ...

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## A Diachronic Investigation of the Change in Form and Formational-Semantic Systematicity of the Chinese Sign Language Lexicon



**Summary:** It has been argued in previous research that several competing pressures guide the directions of language evolution (economy vs. redundancy; arbitrariness vs. systematicity). For sign languages, however, the effects of competing pressures on their change of lexical systems remain largely unclear. In...

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## Wireless Electrotactile System with Hydrogel-Based Electrodes for Conformal Tactile Interaction



**Summary:** A wireless epidermal electrotactile interface is demonstrated through integration of skin-conformal electrodes and flexible circuitry, addressing existing limitations in haptic technology caused by mechanical mismatch and system-level integration challenges. This electrotactile system achieves low s...

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## Beyond access: rethinking assistive technology for individuals with visual impairments in Türkiye

Önder

1 55 min words

Summary: CONCLUSION: Despite demonstrating adaptability, individuals with VI in Türkiye face significant structural barriers to equitable AT access. Informal learning limited public support, and a lack of locally adapted tools contribute to digital exclusion. A rightsbased approach-emphasizing inclusive fun...

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## High prevalence of bacterial STI, anal HPV, cytological abnormalities and anal lesions among MSM in Togo, 2021: a baseline analysis of the ANRS I MIE 12,400/DepIST-H cohort



1 42 min words

Summary: CONCLUSIONS: These findings emphasize the high prevalence of STIs among MSM and confirm the unusual distribution of HPV types in West Africa, with HPV35 being highly prevalent. A national strategy regarding STI screening and HPV vaccination in this key population is needed.

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## Development and Assessment of a Novel Audiosensory Performance Method for Improving the Oral Health of Visually Impaired Children



**Summary:** This study evaluated the effectiveness of an audiosensory performance method in enhancing oral health knowledge and status among visually impaired children aged 6-12 years in the National Capital Region (NCR), Delhi. An interventional study design was used, involving 251 participants equally divided...

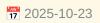
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## **Examining the ability of the interRAI communication** collaborative action plan to identify individuals with sensory challenges: A retrospective cohort study











Summary: CONCLUSIONS: The communication CAP was robust in flagging individuals with sensory impairments as these individuals are more likely to fall into the triggered to facilitate improvement group. The three case studies highlight the importance of assessing all aspects of communication (e.g., cognitive, ...

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## **Analysis of Stability and Functionality of Coil and** Piezoelectric Braille Modules Under Varying Temperature Conditions



Robert P 1 2025-10-29 min 73 BRAILLE

Summary: In this study, the performance and reliability of two different types of Braille modules, i.e., coil and piezoelectric, under varying temperature conditions were compared. The coil module works on the principle of electromagnetic forces generated by coils, while the piezoelectric module is based on ...

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## Challenges faced by visually impaired individuals from the perspective of faculty members: a phenomenological study









Summary: Visually impaired students in higher education face significant academic, social, and psychological barriers that are often overlooked by faculty. This phenomenological study explored these challenges at Hail University, Saudi Arabia, by purposively sampling six faculty members from the Colleges of ...

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## Non-invasive brain stimulation combined with three rehabilitation approaches for cognitive and emotional well-being in Parkinson's patients



**Summary:** CONCLUSION: This study demonstrates that non-invasive brain stimulation combined with cognitive rehabilitation (CR) is the most effective approach for improving cognitive function in Parkinson's patients, while combined motor-cognitive rehabilitation (MCR) shows particular efficacy for emotional wel...

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## Precision Neuromodulation for Diabetes-Associated **Cognitive Decline: a Transcranial Electrical Stimulation Approach**







TDCS TACS TRNS

Summary: CONCLUSION: These findings indicate that tDCS presents a promising, noninvasive therapeutic approach. It demonstrates potential for enhancing cognitive function in patients with DACD and for facilitating improved long-term glycemic control. This highlights the role of brain neuromodulation as a com...

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## The Hidden Benefits of Noise: Low-Frequency tRNS and **Dynamic Visual Noise Enhance Visual Processing**







TDCS TACS TRNS

Summary: Sensory and perceptual processing is inherently shaped by both internal and external noise sources. While noise is typically seen as disruptive, it can, under certain conditions, enhance the detection of weak sensory signals-a phenomenon known as stochastic resonance (SR). Research on SR has primari...

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## A Comprehensive Review of Trigeminal Autonomic Cephalalgias







TDCS TACS TRNS

**Summary:** Trigeminal autonomic cephalalgias (TACs) are a distinct group of primary headache disorders characterized by unilateral pain and autonomic symptoms such as tearing, nasal congestion, and ptosis. This article provides an in-depth review of the different TAC subtypes, including cluster headache, short...

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## Effects on nonverbal numerical acuity performance after a single-session transient random noise stimulation over the intraparietal sulcus or dorsolateral prefrontal cortex







### Read full article:

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## Post-discharge use of opioids, psychostimulants, and treatment medications following residential opioid discontinuation with NET Device™ monotherapy







TDCS TACS TRNS

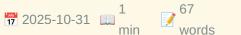
Summary: CONCLUSIONS: The randomized groups did not differ on outcomes. However, participants who self-administered active NET Device stimulation >24 hours reported significantly fewer post-discharge days of opioid or psychostimulant use than those who self-administered active <24 hours or sham, but these fi...

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## Anodal transcranial direct current stimulation does not alter GABA concentration or functional connectivity in the normal visual cortex







TDCS TACS TRNS

Summary: INTRODUCTION: Anodal direct current stimulation (a-tDCS) of the visual cortex is a potential rehabilitation tool for vision disorders such as amblyopia and macular degeneration. However, the underlying neural mechanisms are currently unknown. When applied to the human motor cortex, a-tDCS reduces th...

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https://pubmed.ncbi.nlm.nih.gov/41169746/?

Can exercise therapy combined with transcranial direct current stimulation further improve balance ability in individuals with chronic ankle instability? A systematic review and meta-analysis









TDCS TACS TRNS

Summary: CONCLUSION: tDCS provides therapeutic benefits for dynamic balance only when combined with non-balance exercises. Current evidence is insufficient to demonstrate improvements in static balance with tDCS adjunctive therapy.

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### **Physical Therapy for Addiction**









TDCS TACS TRNS

Summary: Physical therapy has the evidence-based scientific knowledge to address a wide range of physical and psychological problems of addiction. Neuromodulation techniques, including transcranial electrical stimulation (tES) methods like transcranial direct current stimulation (tDCS), transcranial alternat...

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https://pubmed.ncbi.nlm.nih.gov/41171569/?

The Effects of Transcranial Direct Current Stimulation Over the Prefrontal Cortex on Reactive Aggressive Behavior in Healthy Volunteers: A Systematic Review and Meta-analysis of Randomized Controlled Trials







TDCS TACS TRNS

Summary: CONCLUSION: While the overall analysis did not show a significant effect of anodal on reactive aggressive behavior in healthy volunteers, the results suggest that online tDCS and unilateral tDCS may have a potential impact. Given the heterogeneity of the studies and outcome measures, further researc...

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https://pubmed.ncbi.nlm.nih.gov/41172252/?

## A Study on Hemodynamic and Brain Network Characteristics During Upper Limb Movement in Children with Cerebral Hemiplegia Based on fNIRS



**Summary:** Background: Hemiplegic cerebral palsy (HCP) is a motor dysfunction disorder resulting from perinatal developmental brain injury, predominantly impairing upper limb function in children. Nonetheless, there has been insufficient research on the brain activation patterns and inter-brain coordination me...

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## Task-Dependent Neural Activity in the Posterior Parietal **Cortex Is Associated with Better Balance in Adults with Acquired Brain Injury**









Summary: Background/Objectives: There is scarce evidence on the neural underpinnings of balance in people with chronic acquired brain injury (ABI). Thus, the objective was to measure this in adults with ABI during four balance tasks and to examine the relationship between neural activity and balance performa...

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## Medication vs. Movement in ADHD: Interaction Between Medication and Physical Activity on Neurocognitive Functioning



**Summary:** Background/Objectives: Movement during attention-demanding tasks may help compensate for cortical under-arousal in pediatric ADHD patients. However, the influence of medication during movement is unknown. This study assessed the impact of concurrent movement during executive functioning tasks on dor...

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## A Systematic Review of Inter-Brain Synchrony and Psychological Conditions: Stress, Anxiety, Depression, **Autism and Other Disorders**



Summary: CONCLUSIONS: Collectively, the findings support IBS as a potentially dynamic, condition-sensitive, and contextually modulated neurophysiological indicator of interpersonal functioning, with implications for diagnostics, intervention design, and the advancement of social neuroscience in clinical sett...

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## **DrSVision: A Machine Learning Tool for Cortical Region-**Specific fNIRS Calibration Based on Cadaveric Head MRI



1 63 min words





FNIRS

Summary: Functional Near-Infrared Spectroscopy is (fNIRS) a non-invasive neuroimaging technique that monitors cerebral hemodynamic responses by measuring near-infrared (NIR) light absorption caused by changes in oxygenated and deoxygenated hemoglobin concentrations. While fNIRS has been widely used in cognit...

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## Early Motor Cortex Connectivity and Neuronal Reactivity in **Intracerebral Hemorrhage: A Continuous-Wave Functional Near-Infrared Spectroscopy Study**







Summary: Insights into motor cortex remodeling may enable the development of more effective rehabilitation strategies during the acute phase. We aim to assess the affected and unaffected motor/premotor/somatosensory cortex resting state functional connectivity (RSFC) and reactivity with continuous wave funct...

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## Individual abilities to estimate levels of movement synchrony predict action observation network activation











Summary: Observers' ability to estimate levels of movement synchrony, such as in Olympic diving or rowing, is highly variable and, in part, constrained by personality traits and enjoyment of the movements. Embodiment also appears to play a crucial role, whereby stronger beliefs that one's body can complete p...

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The effects of combining anodal transcranial direct current stimulation with robot-assisted gait training on lower limb motor function and the motor cortex regulation of stroke patients



**Summary:** CONCLUSIONS: The combination of anodal tDCS and RAGT can enhance lower limb motor function in stroke patients, while also modulating the connectivity within the motor network. Additionally, the elevation of functional connectivity between the bilateral cerebral hemispheres, quantifiable through fNIR...

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## The Impact of Sports Experience on Map Symbol **Representation in Orienteering Athletes and Its Neural Correlates: Evidence from Eye-Tracking and fNIRS**











Summary: CONCLUSION: High-level orienteering athletes exhibit domain-specific cognitive advantages in map symbol representation tasks. Long-term orienteering map reading training facilitates synergistic interactions between visual and neural information processing.

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# The Impact of Teachers' Autonomy Support on Students' Academic Performance from the Perspective of Hyperscanning: the Mediating Role of Autonomy Need Satisfaction



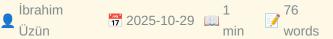
**Summary:** Previous research on self-determination theory has primarily focused on analyzing experiences and behaviors, without fully elucidating the neural basis of how teacher autonomy support influences students' academic performance. In this study, four individuals were selected to act as teachers, while 4...

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## **Fatal Isolated Right Ventricular Rupture Without External Chest Injury in a Young Driver: Forensic Autopsy Findings** After a One-Sided Vehicle Collision







BRAIN COMPUTER INTERFACE

**Summary:** Traumatic deaths are common, with cardiac trauma affecting 7–12% of patients with thoracic injuries. Blunt cardiac injury (BCI), although rare, is associated with a high mortality rate. This report presents a case of blunt cardiac rupture (BCR) observed at autopsy despite the absence of external che...

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## Comparative analysis across diverse plant species reveals superior antibiofilm efficacy and dose-dependency of root extracts compared to leaf extracts







BRAIN COMPUTER INTERFACE

Summary: Although both root- and leaf-derived plant extracts hold potential as antibiofilm agents, research has predominantly focused on leaf tissues. In this study, we systematically compared the antibiofilm efficacy of 158 root and 248 leaf extracts from 360 plant species across five concentrations (0.1, 0...

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## An Active, Multimodal Neural Interface for Real-Time Monitoring of Cortical Electrical, Thermal, and Optical **Dynamics**







BRAIN COMPUTER INTERFACE

Summary: Chronic neurophysiological monitoring devices facilitate the timely diagnosis and treatment of episodic or recurrent neurological disorders. Compared with passive electrodes, silicon-based active transistors provide intrinsic signal amplification and, when combined with capacitive-coupling measureme...

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## Feasibility of decoding cerebellar movement-related potentials for brain-computer interface applications







BRAIN COMPUTER INTERFACE

Summary: 
In Brain-Computer Interface (BCI) applications, signals are conventionally acquired from the cerebrum, and only a subset of the complex interactions that occur in several areas of the brain are collected. One area that has not been investigated for BCI application is the cerebellum, despite its...

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## Acute Effects of Portable Dry-EEG Neurofeedback on **Classical Chinese Learning: A Three-Arm Repeated-Measures** Study







BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: Portable dry-electrode EEG systems can reliably support realtime neurofeedback to enhance attention and cognitive control in complex language learning contexts. This study provides empirical validation for deploying dry-EEG sensors in adaptive educational technologies and contributes t...

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## The effect of perceived auditory feedback on speech Brain-**Computer Interface decoding performance**







BRAIN COMPUTER INTERFACE

Summary: OBJECTIVE: Brain-Computer Interfaces (BCI) provide alternative means of communication for individuals with severe motor impairment. Implantable speech BCIs have shown great potential, particularly in individuals who could still produce some speechrelated movements and/or sounds. As perception of au...

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## The influence of different visual eccentricity on SSVEPs elicited by ultra-low frequency visual stimulation in the lower peripheral visual field

Xiaogang 1 70
Chen min words

BRAIN COMPUTER INTERFACE

Summary: Steady-state visual evoked potential (SSVEP)-based brain-computer interfaces (BCIs) have been widely explored due to their high information transfer rate (ITR) and minimal training requirements. Traditional SSVEP-based BCIs typically use low- and medium-frequency visual stimuli from the central visu...

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## Towards neuroadaptive chatbots: a feasibility study





BRAIN COMPUTER INTERFACE

Summary: INTRODUCTION: Large-language models (LLMs) are transforming most industries today and are set to become a cornerstone of the human digital experience. While integrating explicit human feedback into the training and development of LLM-based chatbots has been integral to the progress we see nowadays, ...

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https://pubmed.ncbi.nlm.nih.gov/41170533/?

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# A Novel Binocular-Encoded SSVEP Framework for Efficient **VR-Based Brain-Computer Interface**







BRAIN COMPUTER INTERFACE

Summary: This paper presents a novel binocular-encoded SSVEP (beSSVEP) method, leveraging binocular vision in virtual reality (VR) to enhance brain-computer interface (BCI) applications. We introduce the Binocular Periodically Repeated Component Analysis (bPRCA) algorithm, designed to address the unique char...

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# A novel channel reduction concept to enhance the classification of motor imagery tasks in brain-computer interface systems



**Summary:** Electroencephalogram (EEG) signals play a critical role in advancing brain-computer interface (BCI) systems, particularly for detecting motor imagery (MI) movements. However, analysing large volume of EEG datasets faces some challenges due to redundant information, and performance degradation. Irrel...

#### **⊗** Read full article:

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2+67771e2

# For Streamlit'ers: Customize theme and components with st\_yled to build unique apps



**Summary:** <!-- SC\_OFF --><div class="md">With <a href="https://st-styled.evo-byte.com/"><strong>st\_yled</strong></a> you can simply style most Streamlit elements like button or containers - right from you app code. This helps you build unique UIs using your personal tone or brand.

#### **Read full article:**

https://www.reddit.com/r/Python/comments/1okojvr/for streamliters customize theme and components/

#### The Profitable Startup

Q doppp 77 2025-11-01 min 13 words HACKER NEWS

**Summary:** Article URL: <a href="https://linear.app/now/the-profitable-startup">https://linear.app/now/the-profitable-startup</a> Comments URL: <a href="https://news.ycombinator.com/item?id=45778984">https://news.ycombinator.com/item?id=45778984">https://news.ycombinator.com/item?id=45778984</a> Points: 3 # Comments: 0

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https://linear.app/now/the-profitable-startup

# Retrieving Planned Sample Sizes from AsPredicted Preregistrations





TWENTY PERCENT STATISTICIAN

Summary: &<u>

http://daniellakens.blogspot.com/2025/06/retrieving-planned-sample-sizes-from.html

#### Are meta-scientists ignoring philosophy of science?

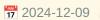
noreply@blogger.com (Daniel

TWENTY PERCENT STATISTICIAN

**Summary:** Are meta-scientists ignoring philosophy of science (PoS)? Are they reinventing the wheel? <a href="https://nomadit.co.uk/conference/metascience2025/p/" 17038">A recent panel at the Metascience conference</a> engaged with this question, and the first sentence of the abstract states "Critics argue t...

http://daniellakens.blogspot.com/2025/07/are-meta-scientists-ignoring-philosophy.html

# **Advancing Cardiac Organoid Engineering Through Application of Biophysical Forces**





REVIEWS BIOMEDICAL ENGINEERING

Summary: Cardiac organoids represent an important bioengineering opportunity in the development of models to study human heart pathophysiology. By incorporating multiple cardiac cell types in three-dimensional culture and developmentally-guided biochemical signaling, cardiac organoids recapitulate numerous f...



#### **Artificial General Intelligence for Medical Imaging Analysis**

1 2024-11-07 min 159
words REVIEWS BIOMEDICAL ENGINEERING

**Summary:** Large-scale Artificial General Intelligence (AGI) models, including Large Language Models (LLMs) such as ChatGPT/GPT-4, have achieved unprecedented success in a variety of general domain tasks. Yet, when applied directly to specialized domains like medical imaging, which require in-depth expertise, ...

http://ieeexplore.ieee.org/document/10746601

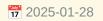
# Earable Multimodal Sensing and Stimulation: A Prospective Toward Unobtrusive Closed-Loop Biofeedback



**Summary:** The human ear has emerged as a bidirectional gateway to the brain's and body's signals. Recent advances in around-the-ear and in-ear sensors have enabled the assessment of biomarkers and physiomarkers derived from brain and cardiac activity using ear-electroencephalography (ear-EEG), photoplethysmog...

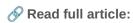
**Read full article:** 

# **Editorial: Harnessing Reviews to Advance Biomedical Engineering's New Horizons**





2025-01-28 min REVIEWS BIOMEDICAL ENGINEERING



http://ieeexplore.ieee.org/document/10856220

#### **Table of Contents**



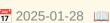




REVIEWS BIOMEDICAL ENGINEERING

http://ieeexplore.ieee.org/document/10856214

# **IEEE Engineering in Medicine and Biology Society**







1 2025-01-28 min words

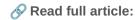
#### **Front Cover**







REVIEWS BIOMEDICAL ENGINEERING



http://ieeexplore.ieee.org/document/10856260

# **Electroencephalographic Functional Connectivity, Heartrate** Synchrony, and Eye Movements Reveal Distinct Components within Narrative Engagement and Immersion







COGNITIVE NEUROSCIENCE

Summary: Storytelling is a fundamental and universal human behavior, representing a vehicle for cultural information exchange throughout human history. In the present day, consumption of narrative audiovisual media is one of the most common recreational activities worldwide. Despite the importance and ubiqui...

#### 

# **Object Ownership Processing in Peripersonal Space: An Electroencephalographic Study**

1 251 min words

COGNITIVE NEUROSCIENCE

Summary: A fundamental aspect of interacting with objects in the environment is the ability to distinguish between objects that can be directly acted upon in the peripersonal space (PPS) and those out of immediate reach in the extrapersonal space (EPS). Performing appropriate actions also requires integratin...

http://ieeexplore.ieee.org/document/11153352

# **Neural Signatures of Recollection Are Sensitive to Memory Quality and Specific Event Features**





**COGNITIVE NEUROSCIENCE** 

Summary: Episodic memories reflect a bound representation of multimodal features that can be recollected with varying levels of precision. Recent fMRI investigations have demonstrated that the precision and content of information retrieved from memory engage a network of posterior medial-temporal and parieta...

#### Transient and Sustained Neuromagnetic Representation of **Consonance and Dissonance in Harmonic Sequences**

1 244 min words

COGNITIVE NEUROSCIENCE

Summary: The perception of musical consonance/dissonance (C/D) relies on basic properties of the auditory system, and prior investigations have shown that C/D sounds elicit strongly divergent neurophysiological activity in human auditory cortex. However, studies are missing that assess transient (P1, N1, P2)...

http://ieeexplore.ieee.org/document/11153362

# An Emergentist Account of Language in the Brain—Seeking **Neural Synergies Behind Human Uniqueness**





COGNITIVE NEUROSCIENCE

**Summary:** Cognitive neuroscience has become increasingly open to views of human cognitive faculties as emergent properties—as higher-level products of synergies between brain structures handling qualitatively different functions. This new perspective mitigates claims that cognitive abilities are tied to local...

# Impact of Transcutaneous Vagus Nerve Stimulation on Eventrelated Potentials during a Response Inhibition Task

1 157 min words

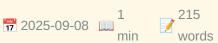
COGNITIVE NEUROSCIENCE

Summary: As an emerging neuromodulation technique, transcutaneous auricular vagus nerve stimulation (taVNS) has shown promise in enhancing cognitive abilities. The present study used a combination of the go/no-go task and the stop-signal task experimental paradigm to examine the cognitive effects of taVNS on...

http://ieeexplore.ieee.org/document/11153359

#### Confidence and Insight into Working Memory Are Shaped by **Attention and Recent Performance**





**COGNITIVE NEUROSCIENCE** 

**Summary:** Working memory is capacity-limited, and our ability to access information from working memory is variable, but selective attention to working memory contents can improve performance. People are able to make introspective judgments regarding the quality of their memories, and these judgments are link...

# Perceptual Decoupling Underlies Internal Shielding Benefit during Switches between External and Internal Attention: **Evidence from Early Sensory Event-related Potential** Components







COGNITIVE NEUROSCIENCE

Summary: People need to often switch attention between external and internal sources of information, that is, external and internal attention, respectively. There has been a recent surge of research interest in this type of attentional flexibility, which has revealed that it is characterized by an asymmetric...



http://ieeexplore.ieee.org/document/11153351

# **Lexical and Information Structure Functions of Prosody and** Their Relevance for Spoken Communication: Evidence from **Psychometric and Electroencephalographic Data**







COGNITIVE NEUROSCIENCE

Summary: Prosody not only distinguishes "lexical" meaning but also plays a key role in information packaging by highlighting the most relevant constituent of the discourse, namely, "focus" information. The present study investigated the role of lexical and focus functions of prosody in the coherent interpret...



# **Musical Structure Influences the Perception of Sound Location**

1 2025-09-08 min 209 COGNITIVE NEUROSCIENCE

**Summary:** The perception of multilayered auditory stimuli, such as music or speech, relies on the integration of progressively more complex and abstract features as they are processed along the auditory pathway. To investigate whether higher-level musical structure modulates auditory perception or merely the ...

http://ieeexplore.ieee.org/document/11153363

# Matrix metalloproteinases and tissue inhibitors of metalloproteinases as the biomarkers of Alzheimer's disease: A meta-analysis

1 19 BRAIN RESEARCH words

**Summary:** Publication date: 15 December 2025<b>Source:</b> Brain Research, Volume 1869Author(s): Kwok Kei Mak, JeeEun Karin Nam, Yi-Fang Chuang, Liang-Kung Chen

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#### Exercise-induced plasma-derived extracellular vesicles increase adult hippocampal neurogenesis

BRAIN RESEARCH

Summary: Publication date: 15 December 2025<b>Source:</b> Brain Research, Volume 1869Author(s): Meghan G. Connolly, Alexander M. Fliflet, Prithika Ravi, Dan I. Rosu, Marni D. Boppart, Justin S. Rhodes

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# Isoquercetin mitigates neuroinflammation and oxidative stress by targeting the NF-kB pathway



BRAIN RESEARCH

Summary: Publication date: 15 December 2025<b>Source:</b> Brain Research, Volume 1869Author(s): Dilpreet Kaur, Shamsher Singh

https://www.sciencedirect.com/science/article/pii/S0006899325005670?dgcid=rss\_sd\_all

# Apprehending relational events: The visual world paradigm and the interplay of event perception and language

BRAIN RESEARCH

Summary: Publication date: 15 December 2025<b>Source:</b> Brain Research, Volume 1869Author(s): Alon Hafri, John C. Trueswell

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#### This Week in The Journal









McKeon,
P. 1 2025-10-08 min words

1 JOURNAL NEUROSCIENCE THIS WEEK

http://www.jneurosci.org/cgi/content/short/45/41/etwij45412025?rss=1

#### This Week in The Journal









JOURNAL NEUROSCIENCE THIS WEEK

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# Generation of synthetic TSPO PET maps from structural MRI images

Marco L. 1 250 Loggia min words

FRONTIERS NEUROINFORMATICS

Summary: IntroductionNeuroinflammation, a pathophysiological process involved in numerous disorders, is typically imaged using [11C]PBR28 (or TSPO) PET. However, this technique is limited by high costs and ionizing radiation, restricting its widespread clinical use. MRI, a more accessible alternative, is com...

https://www.frontiersin.org/articles/10.3389/fninf.2025.1633273

# Deep brain stimulation of the anterior nucleus of the thalamus for seizures after new-onset refractory status epilepticus: a case report

1 251 min words



FRONTIERS HUMAN NEUROSCIENCE

**Summary:** ObjectivesMost patients with new-onset refractory status epilepticus (NORSE) subsequently develop drug-resistant epilepsy (DRE) with multiple seizure foci and are not the typical candidates for resective surgery. We report the first case of DRE developing after cryptogenic-NORSE (C-NORSE) that was s...

Read full article:

https://www.frontiersin.org/articles/10.3389/fnhum.2025.1663280

#### The trade-off between maximizing reconstruction and physiological interpretation of muscle synergies with autoencoders

Alessandro 1 246
Scano min words

FRONTIERS HUMAN NEUROSCIENCE

Summary: IntroductionIn neuroscience, the muscle synergy method is a widely known computational approach for studying motor control from electromyographic (EMG) recordings. Standard algorithms for synergy extraction rely on a linearity assumption for synergy combination. However, the interactions between mus...

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https://www.frontiersin.org/articles/10.3389/fnhum.2025.1699799

# **Exploring gut microbiota alterations in Parkinson's disease:** insights from a 16S amplicon sequencing Eastern European pilot study

Bogdan
Doroftei

1
275
FRONTIERS NEUROSCIENCE
words

Summary: IntroductionParkinson's disease (PD) is a neurodegenerative disorder increasingly associated with alterations in gut microbiota through the gut-brain axis (GBA). Despite growing global interest, studies examining microbiota composition in Eastern European populations remain limited. Methods We profile...

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https://www.frontiersin.org/articles/10.3389/fnins.2025.1654995

#### **Engineered spermidine-secreting Saccharomyces boulardii** enhances olfactory memory in Drosophila melanogaster







Summary: IntroductionThe polyamines putrescine, spermidine, and spermine are ubiquitous metabolites synthesized in all cells. The intracellular levels of polyamines, especially spermidine, decrease in aging. Oral spermidine supplementation has been reported to alleviate aspects of aging-related disease in an...



https://www.frontiersin.org/articles/10.3389/fnins.2025.1628160

# **Exploring the 31P chemical shift behavior of high-energy** phosphates at 7 T in patients with glioma









FRONTIERS NEUROSCIENCE

**Summary:** IntroductionThe characterization of tumor microenvironment in vivo can be supported by 31P MRSI, a non-invasive technique that enables the determination of intracellular pH and magnesium ion concentration, among other parameters. However, it remains unclear from recent studies whether imaging biomar...

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https://www.frontiersin.org/articles/10.3389/fnins.2025.1638322

# Correction: Endovascular management of tandem embolic stroke due to cardioembolic free-floating thrombus: a case report





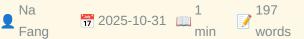




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#### Multiphoton microscopy imaging of fibrous meningiomas based on the combination of multichannel mode and lambda mode







FRONTIERS NEUROSCIENCE

Summary: Fibrous meningiomas, known for their dense and tough texture, present unique challenges in diagnosis and surgical treatment. This study explores the potential of multiphoton microscopy (MPM) for visualizing the microstructures of fibrous meningiomas by combining multichannel and lambda modes. Using ...

Read full article:

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# Transcriptomic analysis of identical twins with different onset ages of adrenoleukodystrophy

Liang 1 291
Tan min words

FRONTIERS NEUROSCIENCE

Summary: IntroductionAdrenoleukodystrophy (ALD) is a rare X-linked neurogenetic disease caused by mutations in the ATP-binding cassette subfamily D member 1 (ABCD1) gene. Currently, the molecular mechanisms underlying the onset and severity of ALD remain unclear. Therefore, the aim of this study is to identi...

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# The impact of CSF-filled cavities on scalp EEG and its implications

Maria Carla Piastra

1 64 min words

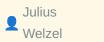
OOSTENVELD ROBERT

Summary: Previous studies have found electroencephalogram (EEG) amplitude and scalp topography differences between neurotypical and neurological/neurosurgical groups, being interpreted at the cognitive level. However, these comparisons are invariably accompanied by anatomical changes. Critical to EEG are the...

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#### Motion-BIDS: an extension to the brain imaging data structure to organize motion data for reproducible research



1 72 2024-07-02 min words OOSTENVELD ROBERT

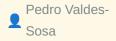
Summary: We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalitie...

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#### One hundred years of EEG for brain and behaviour research









OOSTENVELD ROBERT

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# Freezing of gait in Parkinson's disease is related to imbalanced stopping-related cortical activity

Richard J A van

1 65 min words

OOSTENVELD ROBERT

Summary: Freezing of gait, characterized by involuntary interruptions of walking, is a debilitating motor symptom of Parkinson's disease that restricts people's autonomy. Previous brain imaging studies investigating the mechanisms underlying freezing were restricted to scan people in supine positions and yie...

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# The past, present, and future of the brain imaging data structure (BIDS)

Krzysztof J Gorgolewski

1 82 min words

**OOSTENVELD ROBERT** 

Summary: The Brain Imaging Data Structure (BIDS) is a community-driven standard for the organization of data and metadata from a growing range of neuroscience modalities. This paper is meant as a history of how the standard has developed and grown over time. We outline the principles behind the project, the ...

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#### Human cortical high-gamma power scales with movement rate in healthy participants and stroke survivors

Fanny Quandt

1 65 min words

OOSTENVELD ROBERT

Summary: Motor cortical high-gamma oscillations (60-90 Hz) occur at movement onset and are spatially focused over the contralateral primary motor cortex. Although high-gamma oscillations are widely recognized for their significance in human motor control, their precise function on a cortical level remains el...

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# NIRS-BIDS: Brain Imaging Data Structure Extended to Near-**Infrared Spectroscopy**



1 70 min words

OOSTENVELD ROBERT

Summary: Functional near-infrared spectroscopy (fNIRS) is an increasingly popular neuroimaging technique that measures cortical hemodynamic activity in a non-invasive and portable fashion. Although the fNIRS community has been successful in disseminating open-source processing tools and a standard file forma...

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# Pseudonymisation of neuroimages and data protection: <em>Increasing access to data while retaining scientific utility</em>

Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld robert

Oostenveld robert

Summary: For a number of years, facial features removal techniques such as 'defacing', 'skull stripping' and 'face masking/blurring', were considered adequate privacy preserving tools to openly share brain images. Scientifically, these measures were already a compromise between data protection requirements a...

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#### Cycling on the Freeway: The perilous state of open-source neuroscience software

1 74 min words

OOSTENVELD ROBERT

Summary: Most scientists need software to perform their research (Barker et al., 2020; Carver et al., 2022; Hettrick, 2014; Hettrick et al., 2014; Switters & Osimo, 2019), and neuroscientists are no exception. Whether we work with reaction times, electrophysiological signals, or magnetic resonance imaging data, ...

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#### Optimal configuration of on-scalp OPMs with fixed channel counts

Robert 1 69
Oostenveld min words

OOSTENVELD ROBERT

Summary: Recent technological developments have brought optically pumped magnetometers (OPMs) within reach of the larger neuroscientific community. The current state-of-the-art consists of whole-head systems that measure the magnetic field at >100 locations. OPM sensors can be constructed to measure the fiel...

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# Six-Month Interim Analyses of the Efficacy of Repeated Low-**Level Red-Light Therapy Combined with Orthokeratology for Myopia Control in Spanish Children**

Fernando J Fernández-Velázquez

28 min words

LOW VISION

Summary: CONCLUSIONS: The six-month interim analysis indicates that combining RLRL therapy with OK effectively controls myopia progression in Spanish children, with no severe adverse effects. Long-term follow-up is ongoing.

#### 

https://pubmed.ncbi.nlm.nih.gov/41165747/?

# Predictors of posttraumatic stress disorder among displaced families in Lebanon: A cross-sectional study

Rola Bou

1 72 2025-10-30 min words Low VISION

Summary: This study aimed to assess the prevalence of posttraumatic stress disorder (PTSD) among Lebanese individuals internally displaced by the recent conflict and to identify key predictors of PTSD. The findings are intended to guide targeted policy and advocacy strategies aimed at improving mental health...

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# Incidental ocular surface squamous neoplasia in pterygia: a systematic review and meta-analysis

1 47 min words

LOW VISION

Summary: CONCLUSIONS: This meta-analysis, based on low- to very low-certainty evidence, identified a 1.32% pooled prevalence of incidental OSSN in clinically diagnosed pterygia, highlighting the potential influence of UV exposure and equatorial proximity. The overlap in demographic and lesion characteristics...

#### 

https://pubmed.ncbi.nlm.nih.gov/41167795/?

#### The Hidden Benefits of Noise: Low-Frequency tRNS and **Dynamic Visual Noise Enhance Visual Processing**

Hulusi Kafaligonul 1 70 min words

Summary: Sensory and perceptual processing is inherently shaped by both internal and external noise sources. While noise is typically seen as disruptive, it can, under certain conditions, enhance the detection of weak sensory signals-a phenomenon known as stochastic resonance (SR). Research on SR has primari...

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#### **Headaches due to Low and High Intracranial Pressure**

1 63 min words

LOW VISION

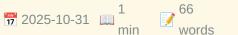
Summary: This article provides a comprehensive overview of high-pressure and lowpressure headaches, focusing on their pathophysiology, clinical presentation, diagnosis, and management. High-pressure headaches, often linked to idiopathic intracranial hypertension, primarily affect young women and can lead to...

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# **Synergistic Charge Generation and Collection Enabled by Incorporation of Crystalline Polymer for Ultrafast-Response Dual-Band Perovskite/Organic Photodetectors**







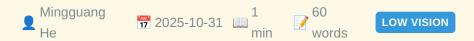
LOW VISION

Summary: Dual-band photodetectors (PDs) capable of selectively responding to both visible and near-infrared (NIR) light are essential for applications in optical communication, medical diagnostics, and artificial vision systems. In this work, we report a highperformance visible/NIR dual-band PD based on a v...

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https://pubmed.ncbi.nlm.nih.gov/41169105/?

# Diabetic retinopathy screening in Australian general practice: persistently low uptake despite national guidelines and equity initiatives

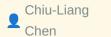


**Summary:** CONCLUSION: Despite national guidelines, GP-led DR screening uptake remains low, with substantial geographic, demographic and temporal disparities in Australian general practice settings. Addressing systemic barriers, strengthening GP-led screening, and implementing targeted interventions are crucia...

#### **⊗** Read full article:

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# **Rare Ocular Complication After Prone Position Surgery: Bilateral Subconjunctival Hemorrhage Following Endoscopic Lumbar Discectomy**









Summary: Subconjunctival hemorrhage (SCH) is a rare complication in spinal surgery and is even more uncommon in endoscopic procedures, which are typically of short duration. We report the case of a 32-year-old male who developed bilateral SCH after an uneventful L4-L5 lumbar endoscopic discectomy performed u...

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https://pubmed.ncbi.nlm.nih.gov/41170305/?

# A Rare Co-Occurrence of Gastric Heterotopia and Autonomic **Nervous System Dysfunction: An Attempt to Explain If There** Is a Need to Explore Possible Syndromic Link

Mohamed H
Ahmed

1 62 Low VISION min words



Summary: Gastric heterotopia (GHT) is the presence of gastric mucosa outside the stomach, including in the rectum. A 59-year-old man presented with rectal bleeding and altered bowel habits, along with long-standing low blood pressure and erectile dysfunction. Investigations confirmed rectal GHT, initially ma...

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#### Ocular Syphilis in an Immunocompetent Patient: Through the Lens



1 72 Low VISION min words





Summary: Ocular manifestations of syphilis can occur at any stage of the disease and present with a wide range of clinical features. If left untreated, they carry a high risk of permanent vision loss. Although syphilis mainly affects individuals with human immunodeficiency virus (HIV) positive and other immu...

#### Read full article:

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# The taste of trigeminal sensations: relation between taste, lingual tactile acuity, and spicy perception in patients with taste dysfunction

Thomas
Hummel

Thomas

Tactile Acuity

Thomas

Summary: In the oral cavity, oral stereognosis and chemesthesis refer to the abilities to recognize shapes and detect noxious substances, respectively, through various receptors distributed on the tongue. The absence of standardized methods to assess oral somatosensory perception has led to a lack of consens...

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# **Measuring the Distribution of Tactile Acuity at the Index Finger and Thumb Fingertips**

Hiroyuki

75 TACTILE ACUITY

Summary: In our day-to-day activities, we utilize not only the pads of our fingers but also the sides and hemispherical tips when manipulating objects. For teleoperation systems to replicate these real-life interactions, tactile sensation must be presented and distributed across the entire fingertip. Thus, u...

#### Read full article:

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# Optimizing Vibrotactile Feedback for Sensory Substitution in the Thigh: Spatial Acuity and Frequency Characteristics

Leah R

Bent

1
69
words

TACTILE ACUITY

**Summary:** Amputation of a lower limb not only affects mobility but also interferes with sensory feedback, leading to an elevated risk of falls among individuals living with amputation. Sensory substitution, achieved through tactile displays embedded in transfemoral prosthetic sockets, presents a promising non...

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# Directional vibro-tactile hazard warnings for drivers with vision impairments





TACTILE ACUITY

Summary: Vision impairment may delay responses to hazards when driving. In a proof-ofconcept driving simulator study, we evaluated a hazard warning device designed for vision impaired drivers. Three groups participated: 11 persons with central vision loss (CVL; median age 60 years), 12 with homonymous field...

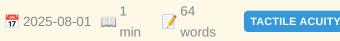
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https://pubmed.ncbi.nlm.nih.gov/40601880/?

#### Sensitivity and vagal reactivity to C-tactile-mediated affective touch in mild cognitive impairment due to Alzheimer's disease







Summary: BackgroundC-tactile (CT) afferents preferentially activate in response to slow caress-like touch, evoking a diffuse pleasant sensation and promoting autonomic regulation. According to Braak's classic model, the neurodegenerative process in Alzheimer's disease (AD) only affects somatosensory cortices...

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# Differences in tactile grid localization accuracy between people with back pain compared to individuals without pain









**Summary:** OBJECTIVES: The study aimed to investigate the grid localization test (GLT) between patients with lower back pain and those without back pain.

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#### **Eye Drop Instillation Success and Hand Function in Adults** with Glaucoma: A Pilot Study

Paula Anne Newman-Casev

1 74 TACTILE ACUITY words

Summary: CONCLUSIONS: Despite hand function deficits, in this exploratory pilot study, adults with glaucoma demonstrated eye drop instillation success comparable to those without glaucoma, though with higher rates of bottle tip contact with the eye, skin, or eyelashes, suggesting an increased risk of potenti...

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# Functional evidence for early origin of tactile acuity in the vertebrate somatosensory system

Sviatoslav N Bagriantsev

1 2025-09-13 min 58 words

TACTILE ACUITY

Summary: Mammals and reptiles possess a sophisticated somatosensory system for precise tactile discrimination via mechanosensory end-organs, such as Meissner and Pacinian corpuscles and others. These structures detect sustained pressure, velocity, and vibrations, thereby facilitating nuanced environmental in...

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#### The coarse mental map of the breast is anchored on the nipple

Charles M

Greenspon

1

86

words

TACTILE ACUITY

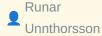
Summary: Touch plays a key role in our perception of our body and shapes our interactions with the world, from the objects we manipulate to the people we touch. While the tactile sensibility of the hand has been extensively characterized, much less is known about touch on other parts of the body. Despite the...

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# **Haptic Feedback Systems for Lower-Limb Prosthetic** Applications: A Review of System Design, User Experience, and Clinical Insights









TACTILE ACUITY

Summary: Systems presenting haptic information have emerged as an important technological advance in assisting individuals with sensory impairments or amputations, where the aim is to enhance sensory perception or provide sensory substitution through tactile feedback. These systems provide information on lim...

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# A Biomimetic Fiber-Entangled Permeable Electronic Skin for Strain-Insensitive and High-Resolution Tactile Sensing









Summary: Electronic skins (e-skins) incorporating island architectures represent a promising platform for strain-insensitive tactile sensing by mechanically decoupling sensing units from deformations. However, conventional island designs encounter stress concentration issues caused by inherent modulus mismat...

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# **High-Density Tactile Sensor Array for Sub-Millimeter Texture** Recognition











Summary: High-density tactile sensor arrays that replicate human touch could restore texture perception in paralyzed individuals. However, conventional tactile sensor arrays face inherent trade-offs between spatial resolution, sensitivity, and crosstalk suppression due to microstructure size limitations and ...

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## A Diachronic Investigation of the Change in Form and Formational-Semantic Systematicity of the Chinese Sign Language Lexicon



**Summary:** It has been argued in previous research that several competing pressures guide the directions of language evolution (economy vs. redundancy; arbitrariness vs. systematicity). For sign languages, however, the effects of competing pressures on their change of lexical systems remain largely unclear. In...

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## Wireless Electrotactile System with Hydrogel-Based Electrodes for Conformal Tactile Interaction



**Summary:** A wireless epidermal electrotactile interface is demonstrated through integration of skin-conformal electrodes and flexible circuitry, addressing existing limitations in haptic technology caused by mechanical mismatch and system-level integration challenges. This electrotactile system achieves low s...

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## Beyond access: rethinking assistive technology for individuals with visual impairments in Türkiye





Summary: CONCLUSION: Despite demonstrating adaptability, individuals with VI in Türkiye face significant structural barriers to equitable AT access. Informal learning limited public support, and a lack of locally adapted tools contribute to digital exclusion. A rightsbased approach-emphasizing inclusive fun...

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## High prevalence of bacterial STI, anal HPV, cytological abnormalities and anal lesions among MSM in Togo, 2021: a baseline analysis of the ANRS I MIE 12,400/DepIST-H cohort









Summary: CONCLUSIONS: These findings emphasize the high prevalence of STIs among MSM and confirm the unusual distribution of HPV types in West Africa, with HPV35 being highly prevalent. A national strategy regarding STI screening and HPV vaccination in this key population is needed.

#### Read full article:

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## Development and Assessment of a Novel Audiosensory Performance Method for Improving the Oral Health of Visually Impaired Children



**Summary:** This study evaluated the effectiveness of an audiosensory performance method in enhancing oral health knowledge and status among visually impaired children aged 6-12 years in the National Capital Region (NCR), Delhi. An interventional study design was used, involving 251 participants equally divided...

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## **Examining the ability of the interRAI communication** collaborative action plan to identify individuals with sensory challenges: A retrospective cohort study











Summary: CONCLUSIONS: The communication CAP was robust in flagging individuals with sensory impairments as these individuals are more likely to fall into the triggered to facilitate improvement group. The three case studies highlight the importance of assessing all aspects of communication (e.g., cognitive, ...

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## **Analysis of Stability and Functionality of Coil and** Piezoelectric Braille Modules Under Varying Temperature Conditions







Summary: In this study, the performance and reliability of two different types of Braille modules, i.e., coil and piezoelectric, under varying temperature conditions were compared. The coil module works on the principle of electromagnetic forces generated by coils, while the piezoelectric module is based on ...

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## Challenges faced by visually impaired individuals from the perspective of faculty members: a phenomenological study









Summary: Visually impaired students in higher education face significant academic, social, and psychological barriers that are often overlooked by faculty. This phenomenological study explored these challenges at Hail University, Saudi Arabia, by purposively sampling six faculty members from the Colleges of ...

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## Non-invasive brain stimulation combined with three rehabilitation approaches for cognitive and emotional well-being in Parkinson's patients



**Summary:** CONCLUSION: This study demonstrates that non-invasive brain stimulation combined with cognitive rehabilitation (CR) is the most effective approach for improving cognitive function in Parkinson's patients, while combined motor-cognitive rehabilitation (MCR) shows particular efficacy for emotional wel...

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https://pubmed.ncbi.nlm.nih.gov/41164398/?

## Precision Neuromodulation for Diabetes-Associated **Cognitive Decline: a Transcranial Electrical Stimulation Approach**







Summary: CONCLUSION: These findings indicate that tDCS presents a promising, noninvasive therapeutic approach. It demonstrates potential for enhancing cognitive function in patients with DACD and for facilitating improved long-term glycemic control. This highlights the role of brain neuromodulation as a com...

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## The Hidden Benefits of Noise: Low-Frequency tRNS and **Dynamic Visual Noise Enhance Visual Processing**







TDCS TACS TRNS

Summary: Sensory and perceptual processing is inherently shaped by both internal and external noise sources. While noise is typically seen as disruptive, it can, under certain conditions, enhance the detection of weak sensory signals-a phenomenon known as stochastic resonance (SR). Research on SR has primari...

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## A Comprehensive Review of Trigeminal Autonomic Cephalalgias







TDCS TACS TRNS

**Summary:** Trigeminal autonomic cephalalgias (TACs) are a distinct group of primary headache disorders characterized by unilateral pain and autonomic symptoms such as tearing, nasal congestion, and ptosis. This article provides an in-depth review of the different TAC subtypes, including cluster headache, short...

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## Effects on nonverbal numerical acuity performance after a single-session transient random noise stimulation over the intraparietal sulcus or dorsolateral prefrontal cortex







### Read full article:

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## Post-discharge use of opioids, psychostimulants, and treatment medications following residential opioid discontinuation with NET Device™ monotherapy







TDCS TACS TRNS

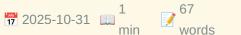
Summary: CONCLUSIONS: The randomized groups did not differ on outcomes. However, participants who self-administered active NET Device stimulation >24 hours reported significantly fewer post-discharge days of opioid or psychostimulant use than those who self-administered active <24 hours or sham, but these fi...

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https://pubmed.ncbi.nlm.nih.gov/41169495/?

## Anodal transcranial direct current stimulation does not alter GABA concentration or functional connectivity in the normal visual cortex







TDCS TACS TRNS

Summary: INTRODUCTION: Anodal direct current stimulation (a-tDCS) of the visual cortex is a potential rehabilitation tool for vision disorders such as amblyopia and macular degeneration. However, the underlying neural mechanisms are currently unknown. When applied to the human motor cortex, a-tDCS reduces th...

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https://pubmed.ncbi.nlm.nih.gov/41169746/?

Can exercise therapy combined with transcranial direct current stimulation further improve balance ability in individuals with chronic ankle instability? A systematic review and meta-analysis









TDCS TACS TRNS

Summary: CONCLUSION: tDCS provides therapeutic benefits for dynamic balance only when combined with non-balance exercises. Current evidence is insufficient to demonstrate improvements in static balance with tDCS adjunctive therapy.

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## **Physical Therapy for Addiction**



Junzhi 1 61 Wu min words





TDCS TACS TRNS

Summary: Physical therapy has the evidence-based scientific knowledge to address a wide range of physical and psychological problems of addiction. Neuromodulation techniques, including transcranial electrical stimulation (tES) methods like transcranial direct current stimulation (tDCS), transcranial alternat...

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https://pubmed.ncbi.nlm.nih.gov/41171569/?

The Effects of Transcranial Direct Current Stimulation Over the Prefrontal Cortex on Reactive Aggressive Behavior in Healthy Volunteers: A Systematic Review and Meta-analysis of Randomized Controlled Trials







TDCS TACS TRNS

Summary: CONCLUSION: While the overall analysis did not show a significant effect of anodal on reactive aggressive behavior in healthy volunteers, the results suggest that online tDCS and unilateral tDCS may have a potential impact. Given the heterogeneity of the studies and outcome measures, further researc...

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## A Study on Hemodynamic and Brain Network Characteristics During Upper Limb Movement in Children with Cerebral Hemiplegia Based on fNIRS



**Summary:** Background: Hemiplegic cerebral palsy (HCP) is a motor dysfunction disorder resulting from perinatal developmental brain injury, predominantly impairing upper limb function in children. Nonetheless, there has been insufficient research on the brain activation patterns and inter-brain coordination me...

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## Task-Dependent Neural Activity in the Posterior Parietal **Cortex Is Associated with Better Balance in Adults with Acquired Brain Injury**









Summary: Background/Objectives: There is scarce evidence on the neural underpinnings of balance in people with chronic acquired brain injury (ABI). Thus, the objective was to measure this in adults with ABI during four balance tasks and to examine the relationship between neural activity and balance performa...

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# Medication vs. Movement in ADHD: Interaction Between Medication and Physical Activity on Neurocognitive Functioning



**Summary:** Background/Objectives: Movement during attention-demanding tasks may help compensate for cortical under-arousal in pediatric ADHD patients. However, the influence of medication during movement is unknown. This study assessed the impact of concurrent movement during executive functioning tasks on dor...

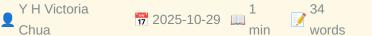
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## A Systematic Review of Inter-Brain Synchrony and Psychological Conditions: Stress, Anxiety, Depression, **Autism and Other Disorders**









Summary: CONCLUSIONS: Collectively, the findings support IBS as a potentially dynamic, condition-sensitive, and contextually modulated neurophysiological indicator of interpersonal functioning, with implications for diagnostics, intervention design, and the advancement of social neuroscience in clinical sett...

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## **DrSVision: A Machine Learning Tool for Cortical Region-**Specific fNIRS Calibration Based on Cadaveric Head MRI











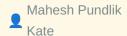
Summary: Functional Near-Infrared Spectroscopy is (fNIRS) a non-invasive neuroimaging technique that monitors cerebral hemodynamic responses by measuring near-infrared (NIR) light absorption caused by changes in oxygenated and deoxygenated hemoglobin concentrations. While fNIRS has been widely used in cognit...

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## Early Motor Cortex Connectivity and Neuronal Reactivity in **Intracerebral Hemorrhage: A Continuous-Wave Functional Near-Infrared Spectroscopy Study**







Summary: Insights into motor cortex remodeling may enable the development of more effective rehabilitation strategies during the acute phase. We aim to assess the affected and unaffected motor/premotor/somatosensory cortex resting state functional connectivity (RSFC) and reactivity with continuous wave funct...

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## Individual abilities to estimate levels of movement synchrony predict action observation network activation











Summary: Observers' ability to estimate levels of movement synchrony, such as in Olympic diving or rowing, is highly variable and, in part, constrained by personality traits and enjoyment of the movements. Embodiment also appears to play a crucial role, whereby stronger beliefs that one's body can complete p...

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The effects of combining anodal transcranial direct current stimulation with robot-assisted gait training on lower limb motor function and the motor cortex regulation of stroke patients



**Summary:** CONCLUSIONS: The combination of anodal tDCS and RAGT can enhance lower limb motor function in stroke patients, while also modulating the connectivity within the motor network. Additionally, the elevation of functional connectivity between the bilateral cerebral hemispheres, quantifiable through fNIR...

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https://pubmed.ncbi.nlm.nih.gov/41163056/?

utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=1JKSd2KF3MGnV7oFV D2g6PNu7rHRFDsLyCNjKkkf4KHBUA3c8P&fc=None&ff=20251031231208&v=2.18.0.post22+67771e2

## The Impact of Sports Experience on Map Symbol **Representation in Orienteering Athletes and Its Neural Correlates: Evidence from Eye-Tracking and fNIRS**











Summary: CONCLUSION: High-level orienteering athletes exhibit domain-specific cognitive advantages in map symbol representation tasks. Long-term orienteering map reading training facilitates synergistic interactions between visual and neural information processing.

#### 

https://pubmed.ncbi.nlm.nih.gov/41167342/?

utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=1JKSd2KF3MGnV7oFV D2g6PNu7rHRFDsLyCNjKkkf4KHBUA3c8P&fc=None&ff=20251031231208&v=2.18.0.post22+67771e2

# The Impact of Teachers' Autonomy Support on Students' Academic Performance from the Perspective of Hyperscanning: the Mediating Role of Autonomy Need Satisfaction



**Summary:** Previous research on self-determination theory has primarily focused on analyzing experiences and behaviors, without fully elucidating the neural basis of how teacher autonomy support influences students' academic performance. In this study, four individuals were selected to act as teachers, while 4...

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https://pubmed.ncbi.nlm.nih.gov/41169190/?

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## **Fatal Isolated Right Ventricular Rupture Without External Chest Injury in a Young Driver: Forensic Autopsy Findings** After a One-Sided Vehicle Collision







BRAIN COMPUTER INTERFACE

**Summary:** Traumatic deaths are common, with cardiac trauma affecting 7–12% of patients with thoracic injuries. Blunt cardiac injury (BCI), although rare, is associated with a high mortality rate. This report presents a case of blunt cardiac rupture (BCR) observed at autopsy despite the absence of external che...

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https://pubmed.ncbi.nlm.nih.gov/41159356/?

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## Comparative analysis across diverse plant species reveals superior antibiofilm efficacy and dose-dependency of root extracts compared to leaf extracts







BRAIN COMPUTER INTERFACE

Summary: Although both root- and leaf-derived plant extracts hold potential as antibiofilm agents, research has predominantly focused on leaf tissues. In this study, we systematically compared the antibiofilm efficacy of 158 root and 248 leaf extracts from 360 plant species across five concentrations (0.1, 0...

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https://pubmed.ncbi.nlm.nih.gov/41160441/?

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## An Active, Multimodal Neural Interface for Real-Time Monitoring of Cortical Electrical, Thermal, and Optical **Dynamics**







BRAIN COMPUTER INTERFACE

Summary: Chronic neurophysiological monitoring devices facilitate the timely diagnosis and treatment of episodic or recurrent neurological disorders. Compared with passive electrodes, silicon-based active transistors provide intrinsic signal amplification and, when combined with capacitive-coupling measureme...

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https://pubmed.ncbi.nlm.nih.gov/41160812/?

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## Feasibility of decoding cerebellar movement-related potentials for brain-computer interface applications









BRAIN COMPUTER INTERFACE

Summary: 
In Brain-Computer Interface (BCI) applications, signals are conventionally acquired from the cerebrum, and only a subset of the complex interactions that occur in several areas of the brain are collected. One area that has not been investigated for BCI application is the cerebellum, despite its...

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https://pubmed.ncbi.nlm.nih.gov/41160913/?

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## Acute Effects of Portable Dry-EEG Neurofeedback on **Classical Chinese Learning: A Three-Arm Repeated-Measures** Study







BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: Portable dry-electrode EEG systems can reliably support realtime neurofeedback to enhance attention and cognitive control in complex language learning contexts. This study provides empirical validation for deploying dry-EEG sensors in adaptive educational technologies and contributes t...

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https://pubmed.ncbi.nlm.nih.gov/41163348/?

utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=1rSUu-tbw4049Wgf RdKXdtNCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251031231205&v=2.18.0.post2 2+67771e2

## The effect of perceived auditory feedback on speech Brain-**Computer Interface decoding performance**







BRAIN COMPUTER INTERFACE

Summary: OBJECTIVE: Brain-Computer Interfaces (BCI) provide alternative means of communication for individuals with severe motor impairment. Implantable speech BCIs have shown great potential, particularly in individuals who could still produce some speechrelated movements and/or sounds. As perception of au...

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https://pubmed.ncbi.nlm.nih.gov/41167038/?

utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=1rSUu- $tbw4049Wgf\_RdKXdtNCvGW0IVBZFpHe7zaN4k4DwoD5\&fc=None\&ff=20251031231205\&v=2.18.0.post2.$ 2+67771e2

## The influence of different visual eccentricity on SSVEPs elicited by ultra-low frequency visual stimulation in the lower peripheral visual field

Xiaogang 1 70
Chen min words

BRAIN COMPUTER INTERFACE

Summary: Steady-state visual evoked potential (SSVEP)-based brain-computer interfaces (BCIs) have been widely explored due to their high information transfer rate (ITR) and minimal training requirements. Traditional SSVEP-based BCIs typically use low- and medium-frequency visual stimuli from the central visu...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41169537/?

utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=1rSUu-tbw4049Wgf RdKXdtNCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251031231205&v=2.18.0.post2 2+67771e2

## Towards neuroadaptive chatbots: a feasibility study



1 73 min words





BRAIN COMPUTER INTERFACE

Summary: INTRODUCTION: Large-language models (LLMs) are transforming most industries today and are set to become a cornerstone of the human digital experience. While integrating explicit human feedback into the training and development of LLM-based chatbots has been integral to the progress we see nowadays, ...

#### 

https://pubmed.ncbi.nlm.nih.gov/41170533/?

utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=1rSUu-tbw4049Wgf RdKXdtNCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251031231205&v=2.18.0.post2 2+67771e2

## A Novel Binocular-Encoded SSVEP Framework for Efficient **VR-Based Brain-Computer Interface**







BRAIN COMPUTER INTERFACE

Summary: This paper presents a novel binocular-encoded SSVEP (beSSVEP) method, leveraging binocular vision in virtual reality (VR) to enhance brain-computer interface (BCI) applications. We introduce the Binocular Periodically Repeated Component Analysis (bPRCA) algorithm, designed to address the unique char...

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https://pubmed.ncbi.nlm.nih.gov/41171651/?

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## A novel channel reduction concept to enhance the classification of motor imagery tasks in brain-computer interface systems



Hua
Wang

Wang

Wang

Wang

Words

Words

Summary: Electroencephalogram (EEG) signals play a critical role in advancing braincomputer interface (BCI) systems, particularly for detecting motor imagery (MI) movements. However, analysing large volume of EEG datasets faces some challenges due to redundant information, and performance degradation. Irrel...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41171945/? utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=1rSUu-tbw4049Wgf RdKXdtNCvGW0lVBZFpHe7zaN4k4DwoD5&fc=None&ff=20251031231205&v=2.18.0.post2 2+67771e2

## The Internet Archive needs your help.



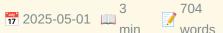
**FMHY** 

**Summary:** A coalition of major record labels has filed a lawsuit against the Internet Archive—demanding <strong>\$700 million</strong> for our work preserving and providing access to historical 78rpm records. These fragile, obsolete discs hold some of the earliest recordings of a vanishing American culture....

#### 

https://fmhy.net/posts/support-ia

## **Monthly Updates [May]**





FMHY

Summary: <div class="info custom-block">INFO These update threads only contains major updates. If you're interested in seeing all minor changes you can follow our <a href="https://github.com/fmhy/FMHYedit/commits/">https://github.com/fmhy/FMHYedit/commits/</a> main" rel="noreferrer" target=" blank">Commits Page</a> on ...



https://fmhy.net/posts/may-2025

## **Monthly Updates [June]**









Summary: <div class="info custom-block">INFO These update threads only contains major updates. If you're interested in seeing all minor changes you can follow our <a href="https://github.com/fmhy/FMHYedit/commits/">https://github.com/fmhy/FMHYedit/commits/</a> main" rel="noreferrer" target=" blank">Commits Page</a> on ...



https://fmhy.net/posts/june-2025

## grasp-agents: a minimalist framework for working with LLMs.



REDDIT PYTHON

Summary: <!-- SC OFF --><div class="md"><h2>What Our Project Does</h2> <a href="https://github.com/grasp-technologies/grasp-agents">grasp-agents</a> is a modular Python framework for building agentic AI pipelines and applications. It is meant to be minimalistic but functional, allowing for rapid experimen...

https://www.reddit.com/r/Python/comments/1okumdi/graspagents\_a\_minimalist\_framework\_for\_working/

## **Active listening: the Swiss Army Knife of communication**

1 2 2 min words



HACKER NEWS

Summary: <a href="https://news.ycombinator.com/item?id=45719829">Comments</a>

https://togetherlondon.com/insights/active-listening-swiss-army-knife

## **Fungus: The Befunge CPU(2015)**



Summary: <a href="https://news.ycombinator.com/item?id=45778566">Comments</a>

https://www.bedroomlan.org/hardware/fungus/

## "Our research is greatly sped up by AI but AI still needs us"



**Summary:** <a href="https://xcancel.com/wtgowers/status/1984340182351634571" rel="nofollow">https://xcancel.com/wtgowers/status/1984340182351634571</a>"I crossed an interesting threshold yesterday, which I think many other mathematicians have been crossing recently as well. In the middle of trying to pro...

**⊗** Read full article:

https://twitter.com/wtgowers/status/1984340182351634571

## **Fungus: The Befunge CPU(2015)**

nonestay42 7 2025-11-01 min 13 words

**Summary:** Article URL: <a href="https://www.bedroomlan.org/hardware/fungus/">https://www.bedroomlan.org/hardware/fungus/</a> Comments URL: <a href="https://news.ycombinator.com/item?id=45778566">https://news.ycombinator.com/item?id=45778566</a> Points: 6 # Comments: 1

**⊗** Read full article:

https://www.bedroomlan.org/hardware/fungus/

## Easily download files from the Open Science Framework with Papercheck





TWENTY PERCENT STATISTICIAN

**Summary:** Researchers increasingly use the <a href="https://osf.io/">Open Science Framework</a> (OSF) to share files, such as data and code underlying scientific publications, or presentations and materials for scientific workshops. The OSF is an amazing service that has contributed immensely to a changed ...

http://daniellakens.blogspot.com/2025/07/easily-download-files-from-open-science.html

## Applications now being accepted for UC-Davis/SDSU ERP Boot Camp, July 31 – August 9, 2023



Steve 1 108
Luck 1 words



**Summary:** The next 10-day ERP Boot Camp will be held July 31 – August 9, 2023 in San Diego, California. We are now taking applications, which will be due by April 1, 2023. <a href="https://erpinfo.org/summer-boot-camp">Click here</a> for more information.We are currently planning t...

#### 

https://erpinfo.org/blog/2021/12/22/applications-2023

## **ERP Decoding for Everyone: Software and Webinar**



2 420 min words



ERP BOOT CAMP

Summary: <strong>You can access the recording </strong><a href="https://" video.ucdavis.edu/media/

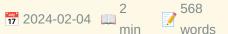
Virtual+ERP+Boot+CampA+Decoding+for+Everyone%2C+July+25+2023/1\_lmwj6bu0"><strong>l strong></a><strong>.<br/>br />You can access the final PDF of the slides </strong><a href="https://ucdavis.box.com/s/f...



https://erpinfo.org/blog/2023/6/23/decoding-webinar

## **New Papers: Optimal Filter Settings for ERP Research**

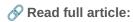






ERP BOOT CAMP

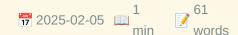
Summary: Zhang, G., Garrett, D. R., & D. R., & Luck, S. J. (in press). Optimal filters for ERP research I: A general approach for selecting filter settings. <em>Psychophysiology</em>. <a href="https://doi.org/10.1111/psyp.14531"><span>https:// doi.org/10.1111/psyp.14531</span></a> [<a href="https://www...



https://erpinfo.org/blog/2024/2/4/optimal-filters

## **Education: Legal Issues**











Summary: The safety concerns and standards shared in other sections provide an initial foundation for legal protections. However, calls for stricter consumer protection laws must accompany the proliferation of neurotech devices. Special privacy laws must be promulgated to ensure "cognitive privacy" (Nita Far...

#### 

https://brain.ieee.org/publications/neuroethics-framework/education/education-legal-issues/educationlegal-issues/

#### **Education: Social and Cultural Issues**

Adriel
Carridice

1 61 min words

BRAIN

Summary: Devices that therapeutically aid users with cognitive and learning disabilities/ differences should not be equally applied to a general population seeking learning advantages. It must not be assumed that therapies able to improve cognition for mental and cognitive disorders (such as executive control...

#### 

https://brain.ieee.org/publications/neuroethics-framework/education/education-social-and-cultural-issues/ education-social-and-cultural-issues/

## **Inverse Problem Approach to Aberration Correction for In Vivo Transcranial Imaging Based on a Sparse Representation** of Contrast-Enhanced Ultrasound Data

1 225 min words

TRANSACTIONS BIOMEDICAL ENGINEERING

**Summary:** Objective: Transcranial ultrasound imaging is currently limited by attenuation and aberration induced by the skull. First used in contrast-enhanced ultrasound (CEUS), highly echoic microbubbles allowed for the development of novel imaging modalities such as ultrasound localization microscopy (ULM). ...

http://ieeexplore.ieee.org/document/10976660

# **CLal: Collaborative Learning and Inference for Low-Resolution Physiological Signals: Validation in Clinical Event Detection and Prediction**

1 179 min words

TRANSACTIONS BIOMEDICAL ENGINEERING

Summary: While machine learning (ML) techniques have been applied to detection and prediction tasks in clinical data, most methods rely on high-resolution data, which is not routinely available in most Intensive Care Units (ICUs), and perform poorly when faced with class imbalance. Here, we introduce and val...

http://ieeexplore.ieee.org/document/10974669

# Call for Applications: IEEE T-MRB Editor in Chief Search



1 18 min words



EMBS

Summary: The post <a href="https://www.embs.org/uncategorized/call-for-applicationsieee-tmrb-editor-in-chief-search/">Call for Applications: IEEE T-MRB Editor in Chief Search</a> appeared first on <a href="https://www.embs.org">IEEE EMBS</a>.

**Read full article:** 

https://www.embs.org/uncategorized/call-for-applications-ieee-tmrb-editor-in-chief-search/

# Call for Applications Editor-in-Chief: IEEE Open Journal of **Engineering in Medicine and Biology**



1 22 1 2025-04-04 min words

**Summary:** The post <a href="https://www.embs.org/ojemb/search-for-editor-in-chief/">https://www.embs.org/ojemb/search-for-editor-in-chief/ #new\_tab">Call for Applications Editor-in-Chief: IEEE Open Journal of Engineering in Medicine and Biology</a> appeared first on <a href="https://www.embs.org">IEEE EMBS</ a>.



https://www.embs.org/ojemb/search-for-editor-in-chief/#new\_tab

# Multimodal integration of plasma biomarkers, MRI, and genetic risk to predict cerebral amyloid burden in Alzheimer's disease





NEUROIMAGE

**Summary:** Publication date: 15 November 2025Source:</b> NeuroImage, Volume 322Author(s): Yichen Wang, Hao-Jie Chen, Yuxin Cheng, YaoXin Xie, Yuyan Cheng, Shiyun Zhao, Yidong Jiang, Tianyu Bai, Yanxi Huo, Kexin Wang, Mingkai Zhang, Weijie Huang, Guozheng Feng, Ying Han, Ni Shu



https://www.sciencedirect.com/science/article/pii/S1053811925005531?dgcid=rss\_sd\_all

# Linking brain entropy to molecular and cellular architecture in psychosis

1 min 15 words

NEUROIMAGE

**Summary:** Publication date: 15 November 2025<b>Source:</b> NeuroImage, Volume 322Author(s): Qiang Li, Jingyu Liu, Vince D. Calhoun

**⊗** Read full article:

https://www.sciencedirect.com/science/article/pii/S1053811925005403?dgcid=rss\_sd\_all

# Inherent coupling of perceptual judgments to actions in the mouse cortex

Sokoletsky, M., Nikitina, A. A., Waychal, K., Katz, Y., Lampl,

1 150 words

**BIORXIV NEUROSCIENCE** 

**Summary:** Neural activity during perceptual tasks is distributed across many cortical regions, but it remains unclear where perceptual judgments are made and whether they are encoded independently of the resulting actions. To address these questions, we designed a vibrotactile detection task in which mice fle...

**⊗** Read full article:

https://www.biorxiv.org/content/10.1101/2025.10.30.685660v1?rss=1

#### Paediatric MRI: High-Resolution in vivo 3T Methods

Wright, B. R., Schira, M. M., Paxinos, G., Kassem, M.
S.

1
2025-10-31 min

**BIORXIV NEUROSCIENCE** 

**Summary:** Magnetic Resonance Imaging (MRI) is a powerful tool for investigating the brain in vivo but is limited by image resolution and scan artefact. In paediatric research, these limitations are compounded by reduced participant compliance, which in turn necessitates shorter scan times to minimise motion a...

https://www.biorxiv.org/content/10.1101/2025.10.30.685686v1?rss=1

# HaloTrace: A spatiotemporally precise fluorescent readout of blood-brain barrier permeability in mice



**BIORXIV NEUROSCIENCE** 

**Summary:** The blood-brain barrier (BBB) is an indispensable, selectively permeable interface that controls the entry and exit of nutrients, ions and waste products into the brain. Despite its biological importance, most measurements of BBB permeability rely on dyes that suffer from nonspecific signals, lack o...

https://www.biorxiv.org/content/10.1101/2025.10.30.685531v1?rss=1

# Exploring the Restoration of Memory Post-NeuronalRegeneration from Induced ALS-FTD in Dugesia tigrina

Jha, A., Ramkumar, J., Jugdar, A., Du, 77 2025-10-31 min 244 words

**BIORXIV NEUROSCIENCE** 

**Summary:** Amyotrophic lateral sclerosis-frontotemporal dementia (ALS-FTD) is a neurodegenerative disease characterized by progressive neuronal loss and motor decline. Recovery remains beyond therapeutic reach, and even complete neurogenesis does not ensure preservation of memory capacity (defined as the stren...

Read full article:

https://www.biorxiv.org/content/10.1101/2025.10.30.685683v1?rss=1

# Interaural time and level differences contribute differently to source segregation and spatial selection

Richardson, B. N., Luthra, S., Kainerstorfer, J. M., Shinn-Cunningham, B. G., Brown, C.

1 2025-10-31 min 233 words BIORXIV NEUROSCIENCE

**Summary:** Interaural time and level differences are crucial in sound localization, yet their contributions to sound source segregation and spatial selection remain underspecified. Here, participants completed a spatial auditory selective attention task while we measured hemodynamic activity in the prefrontal ...

https://www.biorxiv.org/content/10.1101/2025.10.30.685652v1?rss=1

# **Author Correction: A single-vector intersectional AAV** strategy for interrogating cellular diversity and brain function

Lindsay A.
Schwarz

Lindsay A.

Schwarz

1
22
NATURE NEUROSCIENCE

Summary: Nature Neuroscience, Published online: 27 October 2025; <a href="https://"><a href="https://"></a> www.nature.com/articles/s41593-025-02129-4">doi:10.1038/s41593-025-02129-4</a></ p>Author Correction: A single-vector intersectional AAV strategy for interrogating cellular diversity and brain function

https://www.nature.com/articles/s41593-025-02129-4

# Shared cognitive biases influence numerical judgments in macagues and crows

Lena L. JannaschJulia GrübAndreas NiederaAnimal Physiology Unit, Institute of Neurobiology, Department of Biology, University of Tübingen, Tübingen 72076, Germany

1 2025-10-27 min 45 PNAS NEUROSCIENCE





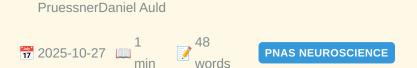
Summary: Proceedings of the National Academy of Sciences, Volume 122, Issue 44, November 2025. <br/> SignificanceCognitive biases, often seen as uniquely human flaws, may instead reflect fundamental decision-making strategies shared across species. By demonstrating that macaque monkeys and carrion crows exhi...

Read full article:

https://www.pnas.org/doi/abs/10.1073/pnas.2512219122?af=R

# Quantitative MRI of the hippocampus reveals microstructural trajectories of aging and Alzheimer's disease pathology

Alfie WearnChristine L. Tardifllana R. LeppertGiulia BaracchiniColleen HughesJennifer Tremblay-MercierJohn BreitnerJudes PoirierSylvia VilleneuveBoris C. BernhardtGary R. TurnerR. Nathan SprengaMontreal Neurological Institute, Department of Neurology and Neurosurgery, McGill University, Montreal, QC H3A 2B4, CanadabMcConnell Brain Imaging Centre, McGill University, Montreal, QC H3A 2B4, CanadacDouglas Mental Health University Institute, Verdun, QC H4H 1R3, CanadadDepartments of Psychiatry, McGill University, Montreal, QC H3A 1A1, CanadaeDepartment of Psychology, York University, Toronto, ON M3J 1P3, CanadafDepartment of Psychology, McGill University, Montreal, QC H3A 3E8, CanadaSylvia VilleneuveJudes PoirierJohn C.S. BreitnerSylvain BailletAndrée-Ann BarilPierre BellecVéronique BohbotDanilo BzdokMallar ChakravartyD. Louis CollinsMahsa DadarSimon DucharmeAlan EvansClaudine GauthierMaiya R. GeddesRick HogeYasser Ituria-MedinaGerhard MulthaupLisa-Marie MünterAlexa Pichet BinetteNatasha RajahPedro Rosa-NetoTaylor SchmitzJean-Paul SoucyNathan SprengChristine TardifEtienne Vachon-PresseauChristian



**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 44, November 2025. <br/>
SignificanceHippocampal atrophy, typically measured using volumetry, is a hallmark feature of both normal aging and Alzheimer's disease (AD). However, the earliest stages of atrophy manifest as microstructura...

BoctiMaxime DescoteauxRobert LaforcePierre EtienneSerge GauthierVasavan NairJens



https://www.pnas.org/doi/abs/10.1073/pnas.2502674122?af=R

# Precise temporal dynamics of ripple events support order memory in human hippocampal-cortical circuits

Sarah SegerErdogan ErgitSruja AryaBrad LegaaDepartment of Neurological Surgery, University of Texas Southwestern Medical Center, Dallas, TX 75380



**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 44, November 2025. <br/>
SignificanceSerial recall is a key behavior in episodic memory, utilizing processes such as item context binding and sequence generation. Sharp-wave ripples play a crucial role in episodic memory by facilitat...

#### **⊗** Read full article:

https://www.pnas.org/doi/abs/10.1073/pnas.2422266122?af=R

# Speech pattern disorders in verbally fluent individuals with autism spectrum disorder: a machine learning analysis



**Summary:** IntroductionDiagnosing Autism Spectrum Disorder (ASD) in verbally fluent individuals based on speech patterns in examiner-patient dialogues is challenging because speech-related symptoms are often subtle and heterogeneous. This study aimed to identify distinctive speech characteristics associated wi...

#### Read full article:

https://www.frontiersin.org/articles/10.3389/fninf.2025.1647194

# Approaches for retraining sEMG classifiers for upper-limb prostheses

Benjamin

Metcalfe

178

min

178

words

FRONTIERS NEUROROBOTICS

**Summary:** IntroductionAbandonment rates for myoelectric upper limb prostheses can reach 44%, negatively affecting quality of life and increasing the risk of injury due to compensatory movements. Traditional myoelectric prostheses rely on conventional signal processing for the detection and classification of m...

https://www.frontiersin.org/articles/10.3389/fnbot.2025.1627872

# The impact of CSF-filled cavities on scalp EEG and its implications

Maria Carla
Piastra

1
2024-06-14
min

64
words





OOSTENVELD ROBERT

Summary: Previous studies have found electroencephalogram (EEG) amplitude and scalp topography differences between neurotypical and neurological/neurosurgical groups, being interpreted at the cognitive level. However, these comparisons are invariably accompanied by anatomical changes. Critical to EEG are the...

Read full article:

https://pubmed.ncbi.nlm.nih.gov/38873838/?

utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=1BUB2BG5RbxOblmhBbiJWEhGG43qlVrvGNHOTqBKva9wWrltM&fc=None&ff=20251031214201&v=2.18.0.post22+67771e2.0.po

# Motion-BIDS: an extension to the brain imaging data structure to organize motion data for reproducible research

Julius .

1 72 2024-07-02 min words OOSTENVELD ROBERT

Summary: We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalitie...

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### One hundred years of EEG for brain and behaviour research









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# Freezing of gait in Parkinson's disease is related to imbalanced stopping-related cortical activity

Richard J A van

1 65 min words

OOSTENVELD ROBERT

Summary: Freezing of gait, characterized by involuntary interruptions of walking, is a debilitating motor symptom of Parkinson's disease that restricts people's autonomy. Previous brain imaging studies investigating the mechanisms underlying freezing were restricted to scan people in supine positions and yie...

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# The past, present, and future of the brain imaging data structure (BIDS)

Krzysztof J Gorgolewski 1 82 min words

**OOSTENVELD ROBERT** 

Summary: The Brain Imaging Data Structure (BIDS) is a community-driven standard for the organization of data and metadata from a growing range of neuroscience modalities. This paper is meant as a history of how the standard has developed and grown over time. We outline the principles behind the project, the ...

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## Human cortical high-gamma power scales with movement rate in healthy participants and stroke survivors

Fanny Quandt

1 65 min words

OOSTENVELD ROBERT

Summary: Motor cortical high-gamma oscillations (60-90 Hz) occur at movement onset and are spatially focused over the contralateral primary motor cortex. Although high-gamma oscillations are widely recognized for their significance in human motor control, their precise function on a cortical level remains el...

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# NIRS-BIDS: Brain Imaging Data Structure Extended to Near-**Infrared Spectroscopy**



1 70 min words

OOSTENVELD ROBERT

Summary: Functional near-infrared spectroscopy (fNIRS) is an increasingly popular neuroimaging technique that measures cortical hemodynamic activity in a non-invasive and portable fashion. Although the fNIRS community has been successful in disseminating open-source processing tools and a standard file forma...

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# Pseudonymisation of neuroimages and data protection: <em>Increasing access to data while retaining scientific utility</em>



Lyuba
Zehl

Zehl

Zo25-06-26 min

Zostenveld robert

Oostenveld robert



Summary: For a number of years, facial features removal techniques such as 'defacing', 'skull stripping' and 'face masking/blurring', were considered adequate privacy preserving tools to openly share brain images. Scientifically, these measures were already a compromise between data protection requirements a...

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### Cycling on the Freeway: The perilous state of open-source neuroscience software



1 74 min words





OOSTENVELD ROBERT

Summary: Most scientists need software to perform their research (Barker et al., 2020; Carver et al., 2022; Hettrick, 2014; Hettrick et al., 2014; Switters & Osimo, 2019), and neuroscientists are no exception. Whether we work with reaction times, electrophysiological signals, or magnetic resonance imaging data, ...

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#### Optimal configuration of on-scalp OPMs with fixed channel counts

Robert 1 69
Oostenveld min words

OOSTENVELD ROBERT

Summary: Recent technological developments have brought optically pumped magnetometers (OPMs) within reach of the larger neuroscientific community. The current state-of-the-art consists of whole-head systems that measure the magnetic field at >100 locations. OPM sensors can be constructed to measure the fiel...

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# Six-Month Interim Analyses of the Efficacy of Repeated Low-**Level Red-Light Therapy Combined with Orthokeratology for Myopia Control in Spanish Children**

Fernando J Fernández-Velázquez

28 min words

LOW VISION

Summary: CONCLUSIONS: The six-month interim analysis indicates that combining RLRL therapy with OK effectively controls myopia progression in Spanish children, with no severe adverse effects. Long-term follow-up is ongoing.

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https://pubmed.ncbi.nlm.nih.gov/41165747/?

# Predictors of posttraumatic stress disorder among displaced families in Lebanon: A cross-sectional study

Rola Bou

1 72 2025-10-30 min words Low VISION

Summary: This study aimed to assess the prevalence of posttraumatic stress disorder (PTSD) among Lebanese individuals internally displaced by the recent conflict and to identify key predictors of PTSD. The findings are intended to guide targeted policy and advocacy strategies aimed at improving mental health...

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# Incidental ocular surface squamous neoplasia in pterygia: a systematic review and meta-analysis

1 47 min words

LOW VISION

Summary: CONCLUSIONS: This meta-analysis, based on low- to very low-certainty evidence, identified a 1.32% pooled prevalence of incidental OSSN in clinically diagnosed pterygia, highlighting the potential influence of UV exposure and equatorial proximity. The overlap in demographic and lesion characteristics...

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https://pubmed.ncbi.nlm.nih.gov/41167795/?

# The Hidden Benefits of Noise: Low-Frequency tRNS and **Dynamic Visual Noise Enhance Visual Processing**

Hulusi Kafaligonul 1 70 min words

Summary: Sensory and perceptual processing is inherently shaped by both internal and external noise sources. While noise is typically seen as disruptive, it can, under certain conditions, enhance the detection of weak sensory signals-a phenomenon known as stochastic resonance (SR). Research on SR has primari...

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## **Headaches due to Low and High Intracranial Pressure**

1 63 min words

LOW VISION

Summary: This article provides a comprehensive overview of high-pressure and lowpressure headaches, focusing on their pathophysiology, clinical presentation, diagnosis, and management. High-pressure headaches, often linked to idiopathic intracranial hypertension, primarily affect young women and can lead to...

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# **Synergistic Charge Generation and Collection Enabled by Incorporation of Crystalline Polymer for Ultrafast-Response Dual-Band Perovskite/Organic Photodetectors**







LOW VISION

Summary: Dual-band photodetectors (PDs) capable of selectively responding to both visible and near-infrared (NIR) light are essential for applications in optical communication, medical diagnostics, and artificial vision systems. In this work, we report a highperformance visible/NIR dual-band PD based on a v...

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https://pubmed.ncbi.nlm.nih.gov/41169105/?

# Diabetic retinopathy screening in Australian general practice: persistently low uptake despite national guidelines and equity initiatives



**Summary:** CONCLUSION: Despite national guidelines, GP-led DR screening uptake remains low, with substantial geographic, demographic and temporal disparities in Australian general practice settings. Addressing systemic barriers, strengthening GP-led screening, and implementing targeted interventions are crucia...

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https://pubmed.ncbi.nlm.nih.gov/41169341/?

# **Rare Ocular Complication After Prone Position Surgery: Bilateral Subconjunctival Hemorrhage Following Endoscopic Lumbar Discectomy**









Summary: Subconjunctival hemorrhage (SCH) is a rare complication in spinal surgery and is even more uncommon in endoscopic procedures, which are typically of short duration. We report the case of a 32-year-old male who developed bilateral SCH after an uneventful L4-L5 lumbar endoscopic discectomy performed u...

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https://pubmed.ncbi.nlm.nih.gov/41170305/?

# A Rare Co-Occurrence of Gastric Heterotopia and Autonomic **Nervous System Dysfunction: An Attempt to Explain If There** Is a Need to Explore Possible Syndromic Link

Mohamed H
Ahmed

1 62 Low Vision min words

Summary: Gastric heterotopia (GHT) is the presence of gastric mucosa outside the stomach, including in the rectum. A 59-year-old man presented with rectal bleeding and altered bowel habits, along with long-standing low blood pressure and erectile dysfunction. Investigations confirmed rectal GHT, initially ma...

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### Ocular Syphilis in an Immunocompetent Patient: Through the Lens

1 72 Low VISION min words

Summary: Ocular manifestations of syphilis can occur at any stage of the disease and present with a wide range of clinical features. If left untreated, they carry a high risk of permanent vision loss. Although syphilis mainly affects individuals with human immunodeficiency virus (HIV) positive and other immu...

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# The taste of trigeminal sensations: relation between taste, lingual tactile acuity, and spicy perception in patients with taste dysfunction

Thomas
Hummel

Thomas

Tactile Acuity

Thomas

Summary: In the oral cavity, oral stereognosis and chemesthesis refer to the abilities to recognize shapes and detect noxious substances, respectively, through various receptors distributed on the tongue. The absence of standardized methods to assess oral somatosensory perception has led to a lack of consens...

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# **Measuring the Distribution of Tactile Acuity at the Index Finger and Thumb Fingertips**

Hiroyuki

1 75
min words

TACTILE ACUITY

Summary: In our day-to-day activities, we utilize not only the pads of our fingers but also the sides and hemispherical tips when manipulating objects. For teleoperation systems to replicate these real-life interactions, tactile sensation must be presented and distributed across the entire fingertip. Thus, u...

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# Optimizing Vibrotactile Feedback for Sensory Substitution in the Thigh: Spatial Acuity and Frequency Characteristics

Leah R

Bent

1

2025-06-27

min

69

words

TACTILE ACUITY

**Summary:** Amputation of a lower limb not only affects mobility but also interferes with sensory feedback, leading to an elevated risk of falls among individuals living with amputation. Sensory substitution, achieved through tactile displays embedded in transfemoral prosthetic sockets, presents a promising non...

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# Directional vibro-tactile hazard warnings for drivers with vision impairments

Alex R

Bowers

1

80

min

words

TACTILE ACUITY

Summary: Vision impairment may delay responses to hazards when driving. In a proof-ofconcept driving simulator study, we evaluated a hazard warning device designed for vision impaired drivers. Three groups participated: 11 persons with central vision loss (CVL; median age 60 years), 12 with homonymous field...

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https://pubmed.ncbi.nlm.nih.gov/40601880/?

## Sensitivity and vagal reactivity to C-tactile-mediated affective touch in mild cognitive impairment due to Alzheimer's disease







Summary: BackgroundC-tactile (CT) afferents preferentially activate in response to slow caress-like touch, evoking a diffuse pleasant sensation and promoting autonomic regulation. According to Braak's classic model, the neurodegenerative process in Alzheimer's disease (AD) only affects somatosensory cortices...

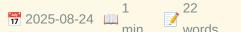
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# Differences in tactile grid localization accuracy between people with back pain compared to individuals without pain









**Summary:** OBJECTIVES: The study aimed to investigate the grid localization test (GLT) between patients with lower back pain and those without back pain.

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# **Eye Drop Instillation Success and Hand Function in Adults** with Glaucoma: A Pilot Study

Paula Anne Newman-Casev

1 74 TACTILE ACUITY words

Summary: CONCLUSIONS: Despite hand function deficits, in this exploratory pilot study, adults with glaucoma demonstrated eye drop instillation success comparable to those without glaucoma, though with higher rates of bottle tip contact with the eye, skin, or eyelashes, suggesting an increased risk of potenti...

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# Functional evidence for early origin of tactile acuity in the vertebrate somatosensory system

Sviatoslav N Bagriantsev

1 2025-09-13 min 58 words

TACTILE ACUITY

Summary: Mammals and reptiles possess a sophisticated somatosensory system for precise tactile discrimination via mechanosensory end-organs, such as Meissner and Pacinian corpuscles and others. These structures detect sustained pressure, velocity, and vibrations, thereby facilitating nuanced environmental in...

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https://pubmed.ncbi.nlm.nih.gov/40945511/?

# The coarse mental map of the breast is anchored on the nipple

Charles M

Greenspon

1

86

words

TACTILE ACUITY

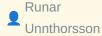
Summary: Touch plays a key role in our perception of our body and shapes our interactions with the world, from the objects we manipulate to the people we touch. While the tactile sensibility of the hand has been extensively characterized, much less is known about touch on other parts of the body. Despite the...

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# **Haptic Feedback Systems for Lower-Limb Prosthetic** Applications: A Review of System Design, User Experience, and Clinical Insights









TACTILE ACUITY

Summary: Systems presenting haptic information have emerged as an important technological advance in assisting individuals with sensory impairments or amputations, where the aim is to enhance sensory perception or provide sensory substitution through tactile feedback. These systems provide information on lim...

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https://pubmed.ncbi.nlm.nih.gov/41007234/?

# A Biomimetic Fiber-Entangled Permeable Electronic Skin for Strain-Insensitive and High-Resolution Tactile Sensing



1 57 min words

Summary: Electronic skins (e-skins) incorporating island architectures represent a promising platform for strain-insensitive tactile sensing by mechanically decoupling sensing units from deformations. However, conventional island designs encounter stress concentration issues caused by inherent modulus mismat...

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# **High-Density Tactile Sensor Array for Sub-Millimeter Texture** Recognition



Min 1 64
Zhang min words

BRAILLE

Summary: High-density tactile sensor arrays that replicate human touch could restore texture perception in paralyzed individuals. However, conventional tactile sensor arrays face inherent trade-offs between spatial resolution, sensitivity, and crosstalk suppression due to microstructure size limitations and ...

#### 

https://pubmed.ncbi.nlm.nih.gov/40871941/?

# A Diachronic Investigation of the Change in Form and Formational-Semantic Systematicity of the Chinese Sign Language Lexicon



**Summary:** It has been argued in previous research that several competing pressures guide the directions of language evolution (economy vs. redundancy; arbitrariness vs. systematicity). For sign languages, however, the effects of competing pressures on their change of lexical systems remain largely unclear. In...

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# Wireless Electrotactile System with Hydrogel-Based Electrodes for Conformal Tactile Interaction



**Summary:** A wireless epidermal electrotactile interface is demonstrated through integration of skin-conformal electrodes and flexible circuitry, addressing existing limitations in haptic technology caused by mechanical mismatch and system-level integration challenges. This electrotactile system achieves low s...

#### Read full article:

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# Beyond access: rethinking assistive technology for individuals with visual impairments in Türkiye

Önder

1 55 min words



Summary: CONCLUSION: Despite demonstrating adaptability, individuals with VI in Türkiye face significant structural barriers to equitable AT access. Informal learning limited public support, and a lack of locally adapted tools contribute to digital exclusion. A rightsbased approach-emphasizing inclusive fun...

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# High prevalence of bacterial STI, anal HPV, cytological abnormalities and anal lesions among MSM in Togo, 2021: a baseline analysis of the ANRS I MIE 12,400/DepIST-H cohort



1 42 words





Summary: CONCLUSIONS: These findings emphasize the high prevalence of STIs among MSM and confirm the unusual distribution of HPV types in West Africa, with HPV35 being highly prevalent. A national strategy regarding STI screening and HPV vaccination in this key population is needed.

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41013315/?

# Development and Assessment of a Novel Audiosensory Performance Method for Improving the Oral Health of Visually Impaired Children



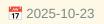
**Summary:** This study evaluated the effectiveness of an audiosensory performance method in enhancing oral health knowledge and status among visually impaired children aged 6-12 years in the National Capital Region (NCR), Delhi. An interventional study design was used, involving 251 participants equally divided...

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https://pubmed.ncbi.nlm.nih.gov/41041413/?

# **Examining the ability of the interRAI communication** collaborative action plan to identify individuals with sensory challenges: A retrospective cohort study









Summary: CONCLUSIONS: The communication CAP was robust in flagging individuals with sensory impairments as these individuals are more likely to fall into the triggered to facilitate improvement group. The three case studies highlight the importance of assessing all aspects of communication (e.g., cognitive, ...

#### 

https://pubmed.ncbi.nlm.nih.gov/41127342/?

# **Analysis of Stability and Functionality of Coil and** Piezoelectric Braille Modules Under Varying Temperature Conditions



Robert P 1 2025-10-29 min 73 BRAILLE

Summary: In this study, the performance and reliability of two different types of Braille modules, i.e., coil and piezoelectric, under varying temperature conditions were compared. The coil module works on the principle of electromagnetic forces generated by coils, while the piezoelectric module is based on ...

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# Challenges faced by visually impaired individuals from the perspective of faculty members: a phenomenological study









Summary: Visually impaired students in higher education face significant academic, social, and psychological barriers that are often overlooked by faculty. This phenomenological study explored these challenges at Hail University, Saudi Arabia, by purposively sampling six faculty members from the Colleges of ...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41169919/?

# Non-invasive brain stimulation combined with three rehabilitation approaches for cognitive and emotional well-being in Parkinson's patients



**Summary:** CONCLUSION: This study demonstrates that non-invasive brain stimulation combined with cognitive rehabilitation (CR) is the most effective approach for improving cognitive function in Parkinson's patients, while combined motor-cognitive rehabilitation (MCR) shows particular efficacy for emotional wel...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41164398/?

# Precision Neuromodulation for Diabetes-Associated **Cognitive Decline: a Transcranial Electrical Stimulation Approach**







Summary: CONCLUSION: These findings indicate that tDCS presents a promising, noninvasive therapeutic approach. It demonstrates potential for enhancing cognitive function in patients with DACD and for facilitating improved long-term glycemic control. This highlights the role of brain neuromodulation as a com...

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# The Hidden Benefits of Noise: Low-Frequency tRNS and **Dynamic Visual Noise Enhance Visual Processing**









TDCS TACS TRNS

Summary: Sensory and perceptual processing is inherently shaped by both internal and external noise sources. While noise is typically seen as disruptive, it can, under certain conditions, enhance the detection of weak sensory signals-a phenomenon known as stochastic resonance (SR). Research on SR has primari...

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# A Comprehensive Review of Trigeminal Autonomic Cephalalgias







TDCS TACS TRNS

**Summary:** Trigeminal autonomic cephalalgias (TACs) are a distinct group of primary headache disorders characterized by unilateral pain and autonomic symptoms such as tearing, nasal congestion, and ptosis. This article provides an in-depth review of the different TAC subtypes, including cluster headache, short...

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# Effects on nonverbal numerical acuity performance after a single-session transient random noise stimulation over the intraparietal sulcus or dorsolateral prefrontal cortex







#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41168231/?

# Post-discharge use of opioids, psychostimulants, and treatment medications following residential opioid discontinuation with NET Device™ monotherapy







TDCS TACS TRNS

Summary: CONCLUSIONS: The randomized groups did not differ on outcomes. However, participants who self-administered active NET Device stimulation >24 hours reported significantly fewer post-discharge days of opioid or psychostimulant use than those who self-administered active <24 hours or sham, but these fi...

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https://pubmed.ncbi.nlm.nih.gov/41169495/?

# Anodal transcranial direct current stimulation does not alter GABA concentration or functional connectivity in the normal visual cortex







TDCS TACS TRNS

Summary: INTRODUCTION: Anodal direct current stimulation (a-tDCS) of the visual cortex is a potential rehabilitation tool for vision disorders such as amblyopia and macular degeneration. However, the underlying neural mechanisms are currently unknown. When applied to the human motor cortex, a-tDCS reduces th...

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https://pubmed.ncbi.nlm.nih.gov/41169746/?

Can exercise therapy combined with transcranial direct current stimulation further improve balance ability in individuals with chronic ankle instability? A systematic review and meta-analysis









TDCS TACS TRNS

Summary: CONCLUSION: tDCS provides therapeutic benefits for dynamic balance only when combined with non-balance exercises. Current evidence is insufficient to demonstrate improvements in static balance with tDCS adjunctive therapy.

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### **Physical Therapy for Addiction**



Junzhi 1 61 Wu min words





TDCS TACS TRNS

Summary: Physical therapy has the evidence-based scientific knowledge to address a wide range of physical and psychological problems of addiction. Neuromodulation techniques, including transcranial electrical stimulation (tES) methods like transcranial direct current stimulation (tDCS), transcranial alternat...

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