

## Daily Briefing - October 21, 2025

Your Daily Tech & Programming Digest

Tuesday, October 21, 2025

1000 101559 1072 40 ARTICLES MIN READ SOURCES WORDS



## Today's Top Stories

## 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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https://pubmed.ncbi.nlm.nih.gov/38873838/?

utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=1BUB2BG5RbxObImhBbiJWEhGG43qlVrvGNHOTqBKva9wWrltM&fc=None&ff=20251021034032&v=2.18.0.post9+e462414

## 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

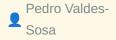
Summary: We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalitie...

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https://pubmed.ncbi.nlm.nih.gov/38956071/?

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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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https://pubmed.ncbi.nlm.nih.gov/39229492/?

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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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https://pubmed.ncbi.nlm.nih.gov/39308505/?

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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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https://pubmed.ncbi.nlm.nih.gov/39786979/?

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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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https://pubmed.ncbi.nlm.nih.gov/39870674/?

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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

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/?

utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=1BUB2BG5RbxObImhBbiJWEhGG43qlVrvGNHOTqBKva9wWrltM&fc=None&ff=20251021034032&v=2.18.0.post9+e462414

## 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, ...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40800958/?

utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=1BUB2BG5RbxOblmhBbiJWEhGG43qlVrvGNHOTqBKva9wWrltM&fc=None&ff=20251021034032&v=2.18.0.post9+e462414

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







OOSTENVELD ROBERT

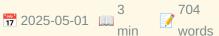
Summary: Recent technological developments have brought optically pumped magnetometers (OPMs) within reach of the larger neuroscientific community. The current state-of-the-art consists of whole-head systems that measure the magnetic field at >100 locations. OPM sensors can be constructed to measure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

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https://pubmed.ncbi.nlm.nih.gov/40800964/?

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## **Monthly Updates [May]**







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 ...

#### Read full article:

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

## **Monthly Updates [June]**



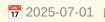
FMHY

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/june-2025

## **Monthly Updates [July]**





**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/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]**



**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 ...

**Read full article:** 

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

## **Bare Metal (The Emacs Essay)**

1 2 2 min words



HACKER NEWS

Summary: <a href="https://news.ycombinator.com/item?id=45584680">Comments</a>

Read full article:

https://waxbanks.wordpress.com/2025/08/01/bare-metal-the-emacs-essay/

## **Language Support for Marginalia Search**

1 2 2 HACKER NEWS

Summary: <a href="https://news.ycombinator.com/item?id=45653143">Comments</a>

https://www.marginalia.nu/log/a\_126\_multilingual/

## **Language Support for Marginalia Search**

● Bogdanp 1 2025-10-21 min 13 words Words

**Summary:** Article URL: <a href="https://www.marginalia.nu/log/a\_126\_multilingual/">https://www.marginalia.nu/log/a\_126\_multilingual/</a> Comments URL: <a href="https://news.ycombinator.com/item?id=45653143">https://news.ycombinator.com/item?id=45653143">https://news.ycombinator.com/item?id=45653143</a> Points: 14 # Comments: 2

https://www.marginalia.nu/log/a\_126\_multilingual/

### Type S and M errors as a "rhetorical tool"

noreply@blogger.com (Daniel

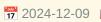
17 2025-09-28 min 3572 words

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

## **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**

1 159 min 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**

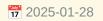




REVIEWS BIOMEDICAL ENGINEERING

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...

## **Editorial: Harnessing Reviews to Advance Biomedical Engineering's New Horizons**



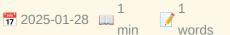


2025-01-28 min 1 REVIEWS BIOMEDICAL ENGINEERING words



http://ieeexplore.ieee.org/document/10856220

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REVIEWS BIOMEDICAL ENGINEERING

http://ieeexplore.ieee.org/document/10856214

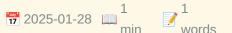
## **IEEE Engineering in Medicine and Biology Society**













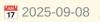


REVIEWS BIOMEDICAL ENGINEERING



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...

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## **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

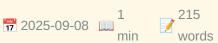
COGNITIVE NEUROSCIENCE

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

## Call for Applications: IEEE T-MRB Editor in Chief Search









**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>.

https://www.embs.org/uncategorized/call-for-applications-ieee-tmrb-editor-in-chief-search/

## Differential synaptic depression mediates the therapeutic effect of deep brain stimulation

Guohong
Cui

Guohong

1

Words

NATURE NEUROSCIENCE

Summary: Nature Neuroscience, Published online: 16 October 2025; <a href="https://"><a href="https://"></a> www.nature.com/articles/s41593-025-02088-w">doi:10.1038/s41593-025-02088-w</a></ p>The authors show that deep brain stimulation (DBS) inhibits local neural activity via differential suppression of glutamate and GABA release, ...

https://www.nature.com/articles/s41593-025-02088-w

## **Interventions to Reduce Incidence and Progression of Myopia** in Children and Adults

Chi Pui 1 76
Pang min words



LOW VISION

**Summary:** The alarming increase in childhood myopia has emerged as a significant public health concern. Due to its long-term consequences, there is also an expanding interest in adult-onset myopia. This review provides a comprehensive summary of interventions for slowing the onset and progression of myopia an...

Read full article:

https://pubmed.ncbi.nlm.nih.gov/41109517/?

## Lamina cribrosa shape in non-human primates is different from that of humans

Sigal

Summary: Non-human primates (NHPs) are a crucial model for studying glaucoma because of their similarities to humans in anatomy, physiology and pathology. Our goal in this study was to quantify in vivo NHP lamina cribrosa (LC) shapes at low, normal, and elevated intraocular pressures (IOPs), and compare them...

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## Associations of adverse childhood experiences, inflammation, and cognition in older Black adults

Indira C Turney

1 2025-10-19 min 62 words

**LOW VISION** 

Summary: CONCLUSIONS: Distinct ACEs profiles were significantly associated with episodic memory and HPA dysregulation-related inflammation. The severe adversity, parental conflict, and low adversity groups showed no reliable predictions to cognition or cognitive status. These findings highlight the need for ...

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https://pubmed.ncbi.nlm.nih.gov/41110208/?

## Visual Assessment in Elderly Inpatients Following a Fall

1 65 min words

LOW VISION

Summary: Introduction Falls are a major cause of morbidity in older adults, with visual impairment recognized as a key modifiable risk factor. National guidelines recommend vision assessment following a fall; however, adherence remains suboptimal. This quality improvement project aimed to evaluate compliance...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41111684/?

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## **Cerebral Venous Sinus Thrombosis Following Nitrous Oxide Abuse: A Clinical Reminder of a Growing Trend**



1 68 min words



LOW VISION

**Summary:** Cerebral venous sinus thrombosis (CVST) is a rare cause of stroke that may mimic other intracranial disorders. A 32-year-old male with bipolar disorder and prior venous thromboembolism presented with severe occipital headache, progressive blurred vision, and a brief sensory episode. He reported rece...

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https://pubmed.ncbi.nlm.nih.gov/41111878/?

## **Swept-Source Optical Coherence Tomography Angiography After Rhegmatogenous Retinal Detachment Treated With Different Approaches**

LOW VISION



Summary: Purpose: To present long-term changes in swept-source optical coherence tomography angiography (SS-OCTA) after different approaches in rhegmatogenous retinal detachment. Methods: This was a retrospective study of patients after segmental buckling, circumferential buckling, primary vitrectomy, or com...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41112492/?

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## Repeated low-intensity red light therapy for childhood myopia: a retrospective cohort study







LOW VISION

Summary: CONCLUSION: RLRL therapy significantly slowed myopia progression and improved visual and accommodative function in children over 12 months, with no major safety concerns. These findings support RLRL as a promising, safe intervention for pediatric myopia control.

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41113016/?

## DWMamba: a structure-aware adaptive state space network for image quality improvement

Zhixiong 1 59
Huang min words

LOW VISION

Summary: Overcoming visual degradation in challenging imaging scenarios is essential for accurate scene understanding. Although deep learning methods have integrated various perceptual capabilities and achieved remarkable progress, their high computational cost limits practical deployment under resource-cons...

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https://pubmed.ncbi.nlm.nih.gov/41113434/?

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## **Rare Presentations of Acute Angle Closure: A Case Series**

Dubev

1 22 min 222 words

LOW VISION

Summary: CONCLUSION: Angle closure should be strongly suspected in patients with pain and sudden vision blurring, even if the initial IOP is low.

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41113686/?

A Cross-sectional Study on Adherence to Topical Glaucoma Medication and its Determinants among Patients Attending Glaucoma Clinics of a Tertiary Care Institute of Ahmedabad City, Gujarat, India



**Summary:** CONCLUSION: Low adherence to medication was found among 82% of cases. Factors significantly associated with adherence were gender, education, duration of treatment, and having received prior instruction. Forgetfulness and the cost of treatment were the most common factors leading to low treatment ad...

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https://pubmed.ncbi.nlm.nih.gov/41113788/?

## 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/?

utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=1no\_pWrlHWS46ep2l9c VOQkZ1QsEMPlx7YY7aF6AfClqP-RYZd&fc=None&ff=20251021032139&v=2.18.0.post9+e462414

## **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

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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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...

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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.

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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

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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https://pubmed.ncbi.nlm.nih.gov/40964349/?

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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...

#### Read full article:

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

Diagnostic Efficacy of Olfactory Function Test Using Functional Near-Infrared Spectroscopy with Machine Learning in Healthy Adults: A Prospective Diagnostic-Accuracy (Feasibility/Validation) Study in Healthy Adults with Algorithm Development



**Summary:** Background/Objectives: The YSK olfactory function (YOF) test is a culturally adapted psychophysical tool that assesses threshold, discrimination, and identification. This study evaluated whether functional near-infrared spectroscopy (fNIRS) synchronized with routine YOF testing, combined with machin...

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https://pubmed.ncbi.nlm.nih.gov/41095653/?

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# Enhanced Activation in the Dorsolateral Prefrontal Cortex and Inferior Parietal Lobule During Recovery from Body Dissatisfaction



**Summary:** Previous studies have examined the neural mechanisms of body dissatisfaction. This study aimed to investigate the neural basis of recovery from body dissatisfaction. Sixty-seven young women participated in this study, engaging in a fat talk-a conversation known to induce body dissatisfaction-followe...

#### **⊗** Read full article:

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## Immediate modulation effects of Tongue Tri-needle on brain functional networks in infratentorial stroke patients with dysphagia: a randomized controlled trial



Yan
Chen

1
2025-10-17
min

59
words





Summary: CONCLUSION: Infratentorial stroke patients with dysphagia exhibit disrupted functional connectivity within the fronto-temporo-sensorimotor network, which is associated with clinical impairment. Tongue Tri-needle multi-stage, selective reconfiguration of brain functional networks, particularly by mod...

#### **⊗** Read full article:

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## Riemannian geometry boosts functional near-infrared spectroscopy-based brain-state classification accuracy



1 37 min words





FNIRS

Summary: CONCLUSION: To our knowledge, we are the first to demonstrate that the proposed Riemannian-geometry-based classification approach is both powerful and viable for fNIRS data, substantially increasing the accuracy in binary and multi-class classification of brain activation patterns.

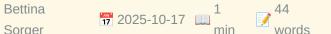
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## Sensitive and specific fNIRS-based approach for awareness detection in disorders of consciousness: proof of principle in healthy adults







Summary: CONCLUSION: This individualized diagnostic approach may have the potential to significantly enhance diagnostic accuracy for DoCs. It provides a noninvasive, efficient, and objective assessment, potentially reducing the rate of misdiagnosis rates. The practicality and minimal technical requirements o...

#### **⊗** Read full article:

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## **Neural and behavioral dynamics of dyadic rhythm** coordination across limb pairings











Summary: Interpersonal motor synchronization relies on precise neural coordination, yet its underlying brain mechanisms remain incompletely understood. Guided by mutual prediction theory, we investigated how temporal structure and effector-specific constraints shape dyadic coordination. Using functional near...

#### Read full article:

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## Motor imagery in individuals with congenital aphantasia

Magdalena Szubielska

1 71 min words

FNIRS

**Summary:** Individuals who experience aphantasia have an inability to create sensory mental images, what lead to a range of cognitive and behavioral differences compared to the general population. However, little is known about how this phenomenon affects the creation of motor imagery. Our study aims to check ...

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## **Interpersonal Neural Synchrony Across Levels of Interpersonal Closeness and Social Interactivity**



1 63 min words

FNIRS

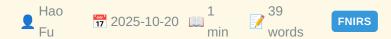
**Summary:** Interpersonal neural synchrony is a fundamental aspect of social interactions, offering insights into the neural mechanisms underlying human connection and developmental outcomes. So far, hyperscanning studies have examined synchrony across different dyads and tasks, leading to inconsistencies in ex...

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# Influence of Exercise Prescription on the Recovery of Cognitive Function In College Students With Mild-to-Moderate Depression



**Summary:** CONCLUSION: Receiving exercise prescription intervention can effectively reduce the severity of depressive symptoms, enhance the recovery of brain cognitive function, and improve the neurosecretory system function recovery and the expressions of neurotrophic factors in college students with mild-to-...

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## Street dancing enhances cognitive reserve in young females: an fNIRS study



**Summary:** CONCLUSION: The 18-week street dance intervention effectively improved working memory, inhibitory control, and cognitive flexibility, contributing to enhanced cognitive reserve. As a physical activity combining rhythm and coordination, street dance offers a promising early intervention strategy for ...

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# Paradigm's relevance in empirical research biases: Hypnotizability, resilience, and self-control, an empty systematic review.

1 193 CLINICAL NEUROSCIENCE min words

Summary: There are different perspectives on the psychological constructs of resilience and hypnotizability, and both are related to aspects of mental health. Resilience has been associated with protective variables, whereas hypnotizability has been related to psychopathological variables. This systematic re...

http://doi.org/10.1037/cns0000384

#### Mechanistic pathways of acceptance: An experimental study.

1 177 2023-08-17 min words





CLINICAL NEUROSCIENCE

Summary: Acceptance can improve psychological functioning. However, research has yielded inconsistent findings regarding the efficacy of acceptance, which may be related to instructions to accept different aspects of psychological functioning (e.g., thoughts vs. emotion). We compared the effects of self-regu...

Read full article:

http://doi.org/10.1037/cns0000371









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...

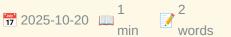


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https://fmhy.net/posts/WWH

### AWS multiple services outage in us-east-1





HACKER NEWS

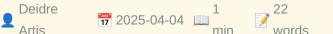
Summary: <a href="https://news.ycombinator.com/item?id=45640838">Comments</a>

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https://health.aws.amazon.com/health/status?ts=20251020

# Call for Applications Editor-in-Chief: IEEE Open Journal of **Engineering in Medicine and Biology**











**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>.



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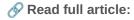








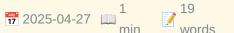
**Summary:** The post <a href="https://www.embs.org/blog-post/change-foi-for-ieeeembs/">Notice to IEEE EMBS Members: Change to Field of Interest</a> appeared first on <a href="https://www.embs.org">IEEE EMBS</a>.



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#### **Notice to IEEE EMBS Members: Change to Field of Interest**









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Summary: The post <a href="https://www.embs.org/blog-post/change-foi-for-ieeeembs/#new\_tab">Notice to IEEE EMBS Members: Change to Field of Interest</a> appeared first on <a href="https://www.embs.org">IEEE EMBS</a>.



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# **Open Call for AdCom Nominations**











Summary: The post <a href="https://www.embs.org/uncategorized/call-for-adcomnominations/">Open Call for AdCom Nominations</a> appeared first on <a href="https:// www.embs.org">IEEE EMBS</a>.



https://www.embs.org/uncategorized/call-for-adcom-nominations/

# 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...</a>

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#### Prefrontal transcranial direct current stimulation enhances the analgesic effects of attention bias modification: a randomized controlled trial

1 31 BRAIN RESEARCH

**Summary:** Publication date: 1 December 2025<b>Source:</b> Brain Research, Volume 1868Author(s): Xue Jiang, Haozhi Zhao, Ruihan Wan, Chen Gong, Beibei Feng, Yafei Wang, Yangfan Xu, Wangwang Yan, Xueqiang Wang, Yixuan Ku, Yuling Wang

Read full article:

https://www.sciencedirect.com/science/article/pii/S0006899325005396?dgcid=rss\_sd\_all

# The locus coeruleus maintains core body temperature and protects against hypothermia during dexmedetomidine-induced sedation

Berta Anuncibay SotoYing MaMathieu NolletSara WongGiulia MiraccaDaniel RastinejadRaquel YustosAlexei L. VyssotskiNicholas P. FranksWilliam WisdenaDepartment of Life Sciences, Imperial

■ College London, London SW7 2AZ, United KingdombUnited Kingdom Dementia Research Institute at Imperial College London, London W12 0BZ, United KingdomcInstitute of Neuroinformatics, University of Zurich and ETH Zurich, Zurich CH8057, Switzerland



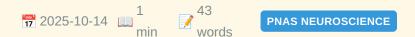
**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 41, October 2025. <br/>
SignificanceDexmedetomidine (DEX), a widely used sedative in intensive care, induces an arousable state resembling non-rapid eye movement (NREM) sleep and lowers body temperature. For some patients, even sligh...

https://www.pnas.org/doi/abs/10.1073/pnas.2422878122?af=R

# Spontaneous activity of astrocytes is a stochastic functional signal for memory consolidation

Gabriele LosiBeatrice VignoliRocco GranataAnnamaria LiaMicaela ZontaGabriele
SanseveroFrancesca PischeddaAngela ChiavegatoSpartaco SantiLorena ZentilinNicoletta BerardiGian
Michele RattoGiorgio CarmignotoMarco CanossaaInstitute of Neuroscience, National Research
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38123, ItalyeCenter for Nanotechnology Innovation (NEST- National Enterprise for nanoScience and

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 Research Council, Bologna 40100, ItalyiIRCSS- Scientific Institute for Research, Hospitalization and
 Healthcare Istituto Ortopedico Rizzoli, Bologna 40100, ItalyjInternational Centre for Genetic
 Engineering and Biotechnology, Padriciano (TS) 34149, ItalykDepartment of Neuroscience,
 Psychology, Drug Research and Child Health (NEUROFARBA), University of Florence, Florence
 50139, ItalylInstitute of Biophysics, National Research Council, Pisa 56126, Italy



**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 42, October 2025. <br/>
SignificanceLosi G., Vignoli B. et al. demonstrate that recurring, spontaneous intracellular Ca2+fluctuations in perisynaptic astrocytic processes [Ca2+microdomains (MDs)] are functional signals required for I...

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https://www.pnas.org/doi/abs/10.1073/pnas.2500511122?af=R

# Leveraging neuroinformatics to understand cognitive phenotypes in elite athletes through systems neuroscience



**Summary:** IntroductionUnderstanding the cognitive phenotypes of elite athletes offers a unique perspective on the intricate interplay between neurological traits and high-performance behaviors. This study aligns with advancing neuroinformatics by proposing a novel framework designed to capture and analyze the...

#### 

https://www.frontiersin.org/articles/10.3389/fninf.2025.1557879

# Improving EEG classification of alcoholic and control subjects using DWT-CNN-BiGRU with various noise filtering techniques



**Summary:** Electroencephalogram (EEG) signal analysis plays a vital role in diagnosing and monitoring alcoholism, where accurate classification of individuals into alcoholic and control groups is essential. However, the inherent noise and complexity of EEG signals pose significant challenges. This study invest...

#### 

#### 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

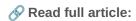






FRONTIERS NEUROINFORMATICS

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...



# Epileptic brain imaging by source localization CLARA supported by ictal-based semiology and VEEG in resource-limited settings

Aleksandra Kawala-Sterniuk 1 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...

# Software and pipelines for registration and analyses of rodent brain image data in reference atlas space

Jan G. Biaalie

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

# Effects of AC induced electric fields on neuronal firing sensitivity and activity patterns

1 218 min words



FRONTIERS COMPUTATIONAL NEUROSCIENCE

Summary: IntroductionUnderstanding how neurons respond to time-varying electric fields is essential for both basic neuroscience and the development of neuromodulation strategies. However, the mechanisms by which alternating-current induced electric fields (AC-IEF) influence neuronal sensitivity and firing re...

# Intrinsic calcium resonance and its modulation: insights from computational modeling



FRONTIERS COMPUTATIONAL NEUROSCIENCE

**Summary:** Hippocampal neurons generate membrane potential resonance due to specific voltage-gated ion channels, known as resonating conductances, which play crucial physiological roles. However, it is not known whether this phenomenon of resonance is limited to membrane voltage or whether it propagates throug...

https://www.frontiersin.org/articles/10.3389/fncom.2025.1669841

# CRISP: a correlation-filtered recursive feature elimination and integration of SMOTE pipeline for gait-based Parkinson's disease screening



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...

### A novel methodological approach to understanding the cortical and subcortical effects of aerobic exercise in Parkinson's disease







FRONTIERS HUMAN NEUROSCIENCE

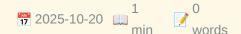
Summary: IntroductionAerobic exercise mitigates symptoms of Parkinson's disease (PD) and may slow disease progression; however, the neural mechanisms underlying these improvements are not well understood. In this study, we discuss the methodology for simultaneously recording local field potentials (LFP) from...

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https://www.frontiersin.org/articles/10.3389/fnhum.2025.1657049

#### Editorial: Cognition, neurodegeneration and immunity: from observational data to molecular mechanisms









FRONTIERS HUMAN NEUROSCIENCE

#### 

### Language and "Theory of Mind" development of bilingual and monolingual children in Bulgaria

Huseyin S.

Kyuchuk

Ty 2025-10-20 min 258

FRONTIERS HUMAN NEUROSCIENCE

Summary: Children from Bulgaria (N = 120) were tested on language and Theory of Mind (ToM) development. Sixty were ethnic bilingual Turkish children, and 60 were monolingual ethnic Bulgarian children. The age of the children varied between 3;6 to 5;0 years old. Both groups of children in the study were teste...

https://www.frontiersin.org/articles/10.3389/fnhum.2025.1522507

# Brain temporal dynamics correlate with clinical traits, spontaneous arm movements, and recovery in middle cerebral artery stroke





FRONTIERS HUMAN NEUROSCIENCE

**Summary:** ObjectiveThe purpose of this study was to look into the brain functional network changes and their possible correlations with clinical traits, spontaneous arm movements, and recovery in middle cerebral artery stroke. Methods The study included 34 patients with acute cerebral infarction (CI) at middle ...

Read full article:

# The effects of amplitude modulated transcranial alternating current stimulation on working memory of college students

Xiao 1 166
Zhang min words

FRONTIERS HUMAN NEUROSCIENCE

Summary: BackgroundRecent studies suggest that amplitude-modulated transcranial alternating current stimulation (AM-tACS) may enhance cognitive functions, but its mechanisms and optimal application remain unclear. Methods Thirty-three healthy university students were randomly assigned to Sham, tACS (40 Hz, 1 m...

https://www.frontiersin.org/articles/10.3389/fnhum.2025.1639378

# The role of the hippocampus and retrosplenial cortex in spatial memory: a double blind anodal transcranial direct current stimulation study

1 161 min words

FRONTIERS HUMAN NEUROSCIENCE

Summary: IntroductionSpatial memory supports orientation and navigation by integrating multiple spatial reference frames. Neuroimaging and lesion studies implicate the hippocampus (HIP) and retrosplenial cortex (RSC), but causal evidence from non-invasive brain stimulation is limited. Methods Eighteen particip...

Read full article:

### Tracking novel visual word learning via different methods with an original FPVS-EEG approach

Aliette 1 321 Lochy min words

FRONTIERS HUMAN NEUROSCIENCE

Summary: Reading is a crucial human skill and learning novel written word forms is a lifelong process. Here, we tracked the emergence of novel word lexical and neural representations after a training procedure, contrasting two learning methods, in 32 monolingual adults. Half of the novel words were provided...

https://www.frontiersin.org/articles/10.3389/fnhum.2025.1647925

# Enlarged perivascular spaces in the basal ganglia mediate the negative impact of HbA1c levels on mild cognitive impairment

Junyan 1 256 Liu min words

FRONTIERS HUMAN NEUROSCIENCE

Summary: BackgroundThis study aimed to investigate the mediating effect of enlarged perivascular space (EPVS) in basal ganglia (BG) on the relationship between glycated hemoglobin (HbA1c) levels and mild cognitive impairment (MCI) in patients with cerebral small vessel disease (CSVD). Methods Data on HbA1c lev...

Read full article:

# TSLNet: a hierarchical multi-head attention-enabled twostream LSTM network for accurate pedestrian tracking and behavior recognition

Xiaoting

Ma

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...

https://www.frontiersin.org/articles/10.3389/fnbot.2025.1663565

#### **Editorial: Exoskeleton gait training**

1 0 min words



FRONTIERS NEUROSCIENCE

Read full article:

### Source-free domain adaptation for SSVEP-based braincomputer interfaces

Osman Berke Guney, Deniz Kucukahmetler and Huseyin

1 2025-10-08 min

216 words

JOURNAL NEURAL ENGINEERING

**Summary:** Objective. Steady-state visually evoked potential-based Brain-computer interface (BCI) spellers assist individuals experiencing speech difficulties by enabling them to communicate at a fast rate. However, achieving a high information transfer rate (ITR) in most prominent methods requires an extensiv...

**⊗** Read full article:

http://iopscience.iop.org/article/10.1088/1741-2552/ae0c3d

# **EEG** workload estimation and classification: a systematic review

Jahid Hassan, Shamim Reza, Syed Udoy Ahmed, Nazmul Haque Anik and Md Obaydullah Khan



**Summary:** Objective. Electroencephalography (EEG) has evolved into an indispensable instrument for estimating cognitive workload in various domains. Machine Learning (ML) and deep learning (DL) techniques have been increasingly employed to develop accurate workload estimation and classification models based o...

http://iopscience.iop.org/article/10.1088/1741-2552/ad705e

# 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

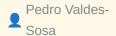
OOSTENVELD ROBERT

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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https://pubmed.ncbi.nlm.nih.gov/39229492/?

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

Krzysztof J
Gorgolewski

1 2024-09-23 min 82
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

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...

#### 

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/?

# 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:

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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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# **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...

#### Read full article:

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

# **Gradient Porous Flexible Pressure Sensors with the Relay** Effect for High-Accuracy Braille-to-Speech Recognition









Summary: The development of highly sensitive, wide linear-range flexible pressure sensors is crucial for practical applications in human-computer interaction, physiological signal detection, and motion monitoring. However, traditional flexible pressure sensors often suffer from limited compressibility in the...

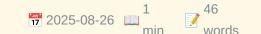
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# Individual and community level factors influencing modern contraceptive use among women of reproductive age in South Africa: a multilevel analysis











Summary: CONCLUSION: Sensory disability status influenced women's contraceptive behaviour in South Africa. Current family planning interventions should target women with sensory disabilities by prioritising accessible communication methods (e.g., braille, sign language), disability awareness training for hea...

#### Read full article:

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#### **Explosion-powered eversible tactile displays**







BRAILLE

Summary: High-resolution electronic tactile displays stand to transform haptics for remote machine operation, virtual reality, and digital information access for people who are blind or visually impaired. Yet, increasing the resolution of these displays requires increasing the number of individually addressa...

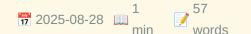
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# A Biomimetic Fiber-Entangled Permeable Electronic Skin for Strain-Insensitive and High-Resolution Tactile Sensing











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...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40874468/?

### **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**









BRAILLE

**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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https://pubmed.ncbi.nlm.nih.gov/40937808/?

# 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.

#### 

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/?

# High-intensity transcranial alternating current stimulation combined with pharmacotherapy for adolescent major depressive disorder: a prospective case report study

**Summary:** CONCLUSIONS: The combination of HI-tACS and pharmacotherapy demonstrated potential early effects in this small cohort of adolescents with MDD, particularly during the initial phase of treatment. These preliminary findings warrant further investigation through large-scale randomized controlled trials...

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# Non-invasive brain stimulation for suicidal ideation: a systematic review and metanalysis of the current literature









TDCS TACS TRNS

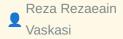
Summary: Data suggests that the available therapeutic tools are still insufficient to deal with suicidality. Non-Invasive Brain Stimulation techniques (NIBS) have entered the recognized guidelines for therapies in psychiatry due to the advantages related to safety and tolerability. The purpose of this review...

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Active and sham transcranial direct-current stimulation (tDCS) plus core stability on the knee kinematic and performance of the lower limb of the soccer players with dynamic knee valgus; two armed randomized clinical trial







TDCS TACS TRNS

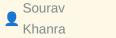
Summary: Dynamic knee valgus (DKV) is a prevalent risk factor for anterior cruciate ligament (ACL) injuries in soccer players, particularly during noncontact mechanisms. Transcranial direct-current stimulation (tDCS) and core stability exercises have shown promise in enhancing motor control and biomechanical...

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## Effect of Precision-based HD-tDCS Over Conventional HDtDCS in Young-onset Mania: Protocol for an Active **Comparison fMRI and TMS Study**







TDCS TACS TRNS

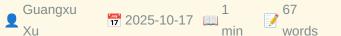
Summary: CONCLUSIONS: This study protocol aims to explore the effect of novel precision-based HD-tDCS in young-onset mania compared to conventional HD-tDCS, thereby allowing for the examination of precision neuromodulation in young-onset mania.

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## **Progress in the combined application of Brain-Computer** Interface and non-invasive brain stimulation for post-stroke motor recovery









TDCS TACS TRNS

Summary: Stroke remains one of the leading causes of disability and death among adults globally. Both Brain-Computer Interface (BCI) and Non-invasive Brain Stimulation (NIBS) have shown significant potential in facilitating motor recovery in stroke patients. The combination of BCI and NIBS enhances brain fun...

#### 

https://pubmed.ncbi.nlm.nih.gov/41106071/?

## **Development and Validation of The Agonistic Continuum** Scale (TACS)

Raymond A
Knight

TDCS TACS TRNS
words

Summary: Sexual violence includes a wide variety of behaviors, ranging from harassment to coercion, to rape, to sexual homicide. Although the criminal justice system distinguishes these forms of sexual violence, several studies have suggested that they represent different degrees of severity of an underlying...

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## Military applications of transcranial direct current stimulation (tDCS) for enhanced multitasking performance

Nathan 1 62
Ward min words

TDCS TACS TRNS

Summary: Effective multitasking in high-stakes military environments is critical yet often compromised by cognitive overload, leading to operational errors. This scoping review explores the potential of transcranial direct current stimulation (tDCS) as a cognitive enhancement tool for improving multitasking ...

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https://pubmed.ncbi.nlm.nih.gov/41110029/?

## Comparative efficacy of non-invasive brain stimulation for attention-deficit/hyperactivity disorder: a systematic review and network meta-analysis







Summary: CONCLUSION: The dual-tDCS and a-tDCS may be considered among the preferred NIBS interventions for improving cognitive function in ADHD. Specifically, anodal tDCS over the left DLPFC plus cathodal tDCS over the right supraorbital area improved cognitive flexibility; while anodal tDCS over the left DL...

### **⊗** Read full article:

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## Effect of preoperative transcranial direct current stimulation on postoperative delirium in elderly patients following laparoscopic surgery



1 31 min words



TDCS TACS TRNS

Summary: CONCLUSION: A single session of preoperative tDCS can reduce the incidence of POD in elderly patients undergoing major laparoscopic surgery and can also reduce postoperative anxiety and depression in these patients.

#### 

https://pubmed.ncbi.nlm.nih.gov/41112611/?

## Noninvasive Neurostimulation to the Inferior Frontal Sulcus or Cerebellum Improves Accuracy But Not Timing in a **Speech Motor Learning Task**







Summary: Speech motor learning depends on phonological working memory mechanisms in left posterior inferior frontal sulcus (LpIFS) and motor learning mechanisms in right cerebellum (RCbm). This study examines how transcranial direct current stimulation (tDCS), applied focally to these regions, affects speech...

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https://pubmed.ncbi.nlm.nih.gov/41113138/?

Diagnostic Efficacy of Olfactory Function Test Using Functional Near-Infrared Spectroscopy with Machine Learning in Healthy Adults: A Prospective Diagnostic-Accuracy (Feasibility/Validation) Study in Healthy Adults with Algorithm Development



**Summary:** Background/Objectives: The YSK olfactory function (YOF) test is a culturally adapted psychophysical tool that assesses threshold, discrimination, and identification. This study evaluated whether functional near-infrared spectroscopy (fNIRS) synchronized with routine YOF testing, combined with machin...

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# Enhanced Activation in the Dorsolateral Prefrontal Cortex and Inferior Parietal Lobule During Recovery from Body Dissatisfaction



**Summary:** Previous studies have examined the neural mechanisms of body dissatisfaction. This study aimed to investigate the neural basis of recovery from body dissatisfaction. Sixty-seven young women participated in this study, engaging in a fat talk-a conversation known to induce body dissatisfaction-followe...

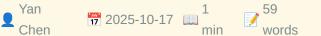
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## Immediate modulation effects of Tongue Tri-needle on brain functional networks in infratentorial stroke patients with dysphagia: a randomized controlled trial











Summary: CONCLUSION: Infratentorial stroke patients with dysphagia exhibit disrupted functional connectivity within the fronto-temporo-sensorimotor network, which is associated with clinical impairment. Tongue Tri-needle multi-stage, selective reconfiguration of brain functional networks, particularly by mod...

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## Riemannian geometry boosts functional near-infrared spectroscopy-based brain-state classification accuracy



1 37 min words





FNIRS

Summary: CONCLUSION: To our knowledge, we are the first to demonstrate that the proposed Riemannian-geometry-based classification approach is both powerful and viable for fNIRS data, substantially increasing the accuracy in binary and multi-class classification of brain activation patterns.

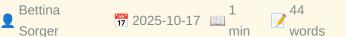
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## Sensitive and specific fNIRS-based approach for awareness detection in disorders of consciousness: proof of principle in healthy adults









Summary: CONCLUSION: This individualized diagnostic approach may have the potential to significantly enhance diagnostic accuracy for DoCs. It provides a noninvasive, efficient, and objective assessment, potentially reducing the rate of misdiagnosis rates. The practicality and minimal technical requirements o...

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## **Neural and behavioral dynamics of dyadic rhythm** coordination across limb pairings









Summary: Interpersonal motor synchronization relies on precise neural coordination, yet its underlying brain mechanisms remain incompletely understood. Guided by mutual prediction theory, we investigated how temporal structure and effector-specific constraints shape dyadic coordination. Using functional near...

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## Motor imagery in individuals with congenital aphantasia

Magdalena Szubielska

1 71 min words

FNIRS

**Summary:** Individuals who experience aphantasia have an inability to create sensory mental images, what lead to a range of cognitive and behavioral differences compared to the general population. However, little is known about how this phenomenon affects the creation of motor imagery. Our study aims to check ...

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## **Interpersonal Neural Synchrony Across Levels of Interpersonal Closeness and Social Interactivity**



1 63 min words







**Summary:** Interpersonal neural synchrony is a fundamental aspect of social interactions, offering insights into the neural mechanisms underlying human connection and developmental outcomes. So far, hyperscanning studies have examined synchrony across different dyads and tasks, leading to inconsistencies in ex...

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# Influence of Exercise Prescription on the Recovery of Cognitive Function In College Students With Mild-to-Moderate Depression



**Summary:** CONCLUSION: Receiving exercise prescription intervention can effectively reduce the severity of depressive symptoms, enhance the recovery of brain cognitive function, and improve the neurosecretory system function recovery and the expressions of neurotrophic factors in college students with mild-to-...

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## Street dancing enhances cognitive reserve in young females: an fNIRS study



**Summary:** CONCLUSION: The 18-week street dance intervention effectively improved working memory, inhibitory control, and cognitive flexibility, contributing to enhanced cognitive reserve. As a physical activity combining rhythm and coordination, street dance offers a promising early intervention strategy for ...

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## **Practical Scheme**









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https://practical-scheme.net/index.html#docs

## 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

# Resting-state functional connectivity correlates of gait and turning performance in multiple sclerosis: a multivariate pattern analysis



https://www.nature.com/articles/s41598-025-21102-6

## Sex differences in response to violence: role of salience network expansion and connectivity on depression

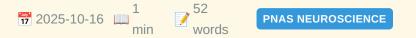


**Read full article:** 

https://www.nature.com/articles/s41398-025-03614-x

# Parkinsonism disrupts the balance between excitatory and inhibitory activity within the primary motor cortex during movement

Biswaranjan MohantyZheshan GuoLuke A. JohnsonJing WangJerrold L. VitekaDepartment of Neurology, University of Minnesota, Minneapolis, MN 55455



**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 42, October 2025. <br/>
SignificanceThe primary motor cortex (M1) is a critical component for the generation of movement via corticospinal projections. In this study, we focused on how Parkinsonism alters M1 neuronal spiking activity...

https://www.pnas.org/doi/abs/10.1073/pnas.2510287122?af=R

## DYRK1A in the physiology and pathology of the neuronastrocyte axis

Jeremiah
Zartman

1
212
words

FRONTIERS NEUROSCIENCE

Summary: Dual-specificity tyrosine phosphorylation-regulated kinase 1A (DYRK1A) is a dosage-sensitive kinase with critical roles in the neuron-astrocyte axis. During brain development, DYRK1A ensures the proper number of differentiated neurons and astrocytes. In neurons, this DYRK1A regulates neuronal morpho...

https://www.frontiersin.org/articles/10.3389/fnins.2025.1626062

## Identification of modulated whole-brain dynamical models from nonstationary electrophysiological data

Addison Schwamb, Zongxi Yu and ShiNung China

1 198 min words

JOURNAL NEURAL ENGINEERING

Summary: Objective. Understanding the mechanisms underlying brain dynamics is a longheld goal in neuroscience. However, these dynamics are both individualized and nonstationary, making modeling challenging. Here, we present a data-driven approach to modeling nonstationary dynamics based on principles of neu...

http://iopscience.iop.org/article/10.1088/1741-2552/ae0d32

## Brain-to-text decoding with context-aware neural representations and large language models

Jingyuan Li, Trung Le, Chaofei Fan, Mingfei Chen and Eli Shlizerman

1 2025-10-13 min



JOURNAL NEURAL ENGINEERING

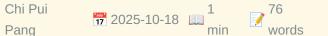
Summary: Objective. Decoding attempted speech from neural activity offers a promising avenue for restoring communication abilities in individuals with speech impairments. Previous studies have focused on mapping neural activity to text using phonemes as the intermediate target. While successful, decoding neu...

#### 

http://iopscience.iop.org/article/10.1088/1741-2552/adfab1

## Interventions to Reduce Incidence and Progression of Myopia in Children and Adults







LOW VISION

**Summary:** The alarming increase in childhood myopia has emerged as a significant public health concern. Due to its long-term consequences, there is also an expanding interest in adult-onset myopia. This review provides a comprehensive summary of interventions for slowing the onset and progression of myopia an...

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## Lamina cribrosa shape in non-human primates is different from that of humans

Sigal

Summary: Non-human primates (NHPs) are a crucial model for studying glaucoma because of their similarities to humans in anatomy, physiology and pathology. Our goal in this study was to quantify in vivo NHP lamina cribrosa (LC) shapes at low, normal, and elevated intraocular pressures (IOPs), and compare them...

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## Associations of adverse childhood experiences, inflammation, and cognition in older Black adults

Indira C Turney

1 2025-10-19 min 62 words

**LOW VISION** 

Summary: CONCLUSIONS: Distinct ACEs profiles were significantly associated with episodic memory and HPA dysregulation-related inflammation. The severe adversity, parental conflict, and low adversity groups showed no reliable predictions to cognition or cognitive status. These findings highlight the need for ...

### 

https://pubmed.ncbi.nlm.nih.gov/41110208/?

## Visual Assessment in Elderly Inpatients Following a Fall

1 65 min words

LOW VISION

Summary: Introduction Falls are a major cause of morbidity in older adults, with visual impairment recognized as a key modifiable risk factor. National guidelines recommend vision assessment following a fall; however, adherence remains suboptimal. This quality improvement project aimed to evaluate compliance...

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## **Cerebral Venous Sinus Thrombosis Following Nitrous Oxide Abuse: A Clinical Reminder of a Growing Trend**



1 68 min words

LOW VISION

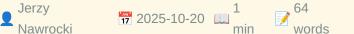
**Summary:** Cerebral venous sinus thrombosis (CVST) is a rare cause of stroke that may mimic other intracranial disorders. A 32-year-old male with bipolar disorder and prior venous thromboembolism presented with severe occipital headache, progressive blurred vision, and a brief sensory episode. He reported rece...

#### Read full article:

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## **Swept-Source Optical Coherence Tomography Angiography After Rhegmatogenous Retinal Detachment Treated With Different Approaches**







LOW VISION

Summary: Purpose: To present long-term changes in swept-source optical coherence tomography angiography (SS-OCTA) after different approaches in rhegmatogenous retinal detachment. Methods: This was a retrospective study of patients after segmental buckling, circumferential buckling, primary vitrectomy, or com...

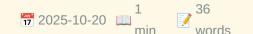
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## Repeated low-intensity red light therapy for childhood myopia: a retrospective cohort study









LOW VISION

Summary: CONCLUSION: RLRL therapy significantly slowed myopia progression and improved visual and accommodative function in children over 12 months, with no major safety concerns. These findings support RLRL as a promising, safe intervention for pediatric myopia control.

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41113016/?

## DWMamba: a structure-aware adaptive state space network for image quality improvement

Zhixiong 1 59
Huang min words

LOW VISION

Summary: Overcoming visual degradation in challenging imaging scenarios is essential for accurate scene understanding. Although deep learning methods have integrated various perceptual capabilities and achieved remarkable progress, their high computational cost limits practical deployment under resource-cons...

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## **Rare Presentations of Acute Angle Closure: A Case Series**

Dubev

1 22 min 222 words

LOW VISION

Summary: CONCLUSION: Angle closure should be strongly suspected in patients with pain and sudden vision blurring, even if the initial IOP is low.

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41113686/?

A Cross-sectional Study on Adherence to Topical Glaucoma Medication and its Determinants among Patients Attending Glaucoma Clinics of a Tertiary Care Institute of Ahmedabad City, Gujarat, India



**Summary:** CONCLUSION: Low adherence to medication was found among 82% of cases. Factors significantly associated with adherence were gender, education, duration of treatment, and having received prior instruction. Forgetfulness and the cost of treatment were the most common factors leading to low treatment ad...

#### 

https://pubmed.ncbi.nlm.nih.gov/41113788/?

## 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**



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.

### 

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

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...

#### Read full article:

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

## High-intensity transcranial alternating current stimulation combined with pharmacotherapy for adolescent major depressive disorder: a prospective case report study

**Summary:** CONCLUSIONS: The combination of HI-tACS and pharmacotherapy demonstrated potential early effects in this small cohort of adolescents with MDD, particularly during the initial phase of treatment. These preliminary findings warrant further investigation through large-scale randomized controlled trials...

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## Non-invasive brain stimulation for suicidal ideation: a systematic review and metanalysis of the current literature









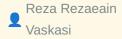
TDCS TACS TRNS

Summary: Data suggests that the available therapeutic tools are still insufficient to deal with suicidality. Non-Invasive Brain Stimulation techniques (NIBS) have entered the recognized guidelines for therapies in psychiatry due to the advantages related to safety and tolerability. The purpose of this review...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41103967/?

Active and sham transcranial direct-current stimulation (tDCS) plus core stability on the knee kinematic and performance of the lower limb of the soccer players with dynamic knee valgus; two armed randomized clinical trial







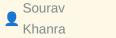
TDCS TACS TRNS

Summary: Dynamic knee valgus (DKV) is a prevalent risk factor for anterior cruciate ligament (ACL) injuries in soccer players, particularly during noncontact mechanisms. Transcranial direct-current stimulation (tDCS) and core stability exercises have shown promise in enhancing motor control and biomechanical...

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https://pubmed.ncbi.nlm.nih.gov/41103970/?

## Effect of Precision-based HD-tDCS Over Conventional HDtDCS in Young-onset Mania: Protocol for an Active **Comparison fMRI and TMS Study**



1 31 min words



TDCS TACS TRNS

Summary: CONCLUSIONS: This study protocol aims to explore the effect of novel precision-based HD-tDCS in young-onset mania compared to conventional HD-tDCS, thereby allowing for the examination of precision neuromodulation in young-onset mania.

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## **Progress in the combined application of Brain-Computer** Interface and non-invasive brain stimulation for post-stroke motor recovery









TDCS TACS TRNS

Summary: Stroke remains one of the leading causes of disability and death among adults globally. Both Brain-Computer Interface (BCI) and Non-invasive Brain Stimulation (NIBS) have shown significant potential in facilitating motor recovery in stroke patients. The combination of BCI and NIBS enhances brain fun...

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https://pubmed.ncbi.nlm.nih.gov/41106071/?

## **Development and Validation of The Agonistic Continuum** Scale (TACS)

Raymond A
Knight

TOCS TACS TRNS
words

Summary: Sexual violence includes a wide variety of behaviors, ranging from harassment to coercion, to rape, to sexual homicide. Although the criminal justice system distinguishes these forms of sexual violence, several studies have suggested that they represent different degrees of severity of an underlying...

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https://pubmed.ncbi.nlm.nih.gov/41108027/?

utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=143rKCPgMwbasrj66gQ1 r1ebioUg42SIGRyVKSoW4m6X-ecQ00&fc=None&ff=20251021023119&v=2.18.0.post9+e462414

## Military applications of transcranial direct current stimulation (tDCS) for enhanced multitasking performance

Nathan 1 62
Ward min words

TDCS TACS TRNS

Summary: Effective multitasking in high-stakes military environments is critical yet often compromised by cognitive overload, leading to operational errors. This scoping review explores the potential of transcranial direct current stimulation (tDCS) as a cognitive enhancement tool for improving multitasking ...

#### 

https://pubmed.ncbi.nlm.nih.gov/41110029/?

## Comparative efficacy of non-invasive brain stimulation for attention-deficit/hyperactivity disorder: a systematic review and network meta-analysis







Summary: CONCLUSION: The dual-tDCS and a-tDCS may be considered among the preferred NIBS interventions for improving cognitive function in ADHD. Specifically, anodal tDCS over the left DLPFC plus cathodal tDCS over the right supraorbital area improved cognitive flexibility; while anodal tDCS over the left DL...

### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41111957/?

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## **Effect of preoperative transcranial direct current stimulation** on postoperative delirium in elderly patients following laparoscopic surgery



1 31 min words



TDCS TACS TRNS

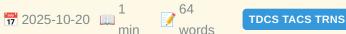
Summary: CONCLUSION: A single session of preoperative tDCS can reduce the incidence of POD in elderly patients undergoing major laparoscopic surgery and can also reduce postoperative anxiety and depression in these patients.

#### 

https://pubmed.ncbi.nlm.nih.gov/41112611/?

## Noninvasive Neurostimulation to the Inferior Frontal Sulcus or Cerebellum Improves Accuracy But Not Timing in a **Speech Motor Learning Task**







**Summary:** Speech motor learning depends on phonological working memory mechanisms in left posterior inferior frontal sulcus (LpIFS) and motor learning mechanisms in right cerebellum (RCbm). This study examines how transcranial direct current stimulation (tDCS), applied focally to these regions, affects speech...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41113138/?

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## Simple Prostatectomy is an Effective Option for BPH Patients With Hypocontractile Bladders









BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: This is one of the first studies assessing outcomes of SP in patients with hypocontractile bladders. SP is an effective surgical option for patients with impaired detrusor function including those who are catheter dependent.

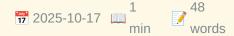
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## Electromagnetic Stimulation to Reduce Disability After Ischemic Stroke: The EMAGINE Randomized Clinical Trial





BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSION AND RELEVANCE: This trial found that ENTF therapy is safe. Although the difference between groups was not statistically significant, ENTF therapy may reduce global disability in patients with severe baseline disability after ischemic stroke. These results warrant confirmation in a higher ...

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https://pubmed.ncbi.nlm.nih.gov/41105410/?
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+e462414

## A different bimodal: case series of patients with a cochlear implant and a contralateral bone conduction implant







BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSION: The synergy of electrical and vibratory auditory stimulation observed in this case series provided subjective functional benefits and measurable speech perception benefits for some patients, while others experienced minimal or no measurable benefit and ceased usage.

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# Progress in the combined application of Brain-Computer Interface and non-invasive brain stimulation for post-stroke motor recovery



**Summary:** Stroke remains one of the leading causes of disability and death among adults globally. Both Brain-Computer Interface (BCI) and Non-invasive Brain Stimulation (NIBS) have shown significant potential in facilitating motor recovery in stroke patients. The combination of BCI and NIBS enhances brain fun...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41106071/?
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+e462414

## Modulation of brain oscillations by continuous theta burst stimulation in patients with insomnia









BRAIN COMPUTER INTERFACE

Summary: Continuous theta burst stimulation (cTBS) induces long-lasting depression of cortical excitability in motor cortex. In the present study, we explored the modulation of cTBS on resting state electroencephalogram (rsEEG) during wakefulness and subsequent sleep in patients with insomnia disorder. Forty...

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## Establishing a comprehensive national auditory implant registry in Japan: Trends and demographics from the first two years (2023-2024)







BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: This is the first comprehensive report from the national registry in Japan that includes not only CIs but also AMEIs and BCIs. The registry demonstrated reliable data capture and highlighted important trends in patient demographics and surgical practices. Continued data collection will e...

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# Emoface: Al-assisted diagnostic model for differentiating major depressive disorder and bipolar disorder via facial biomarkers



**Summary:** Affective disorders, including Major Depressive Disorder (MDD) and Bipolar Disorder (BD), exhibit significant mood abnormalities, making rapid diagnosis essential for social stability and healthcare efficiency. Traditional diagnostic solutions, including medical history collection and psychological ...

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+e462414

# An Explainable 3D-Deep Learning Model for EEG Decoding in **Brain-Computer Interface Applications**

Nadia Mammone

1 2025-10-19 min 68 words

BRAIN COMPUTER INTERFACE

Summary: Decoding electroencephalographic (EEG) signals is of key importance in the development of brain-computer interface (BCI) systems. However, high inter-subject variability in EEG signals requires user-specific calibration, which can be time-consuming and limit the application of deep learning approach...

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# Detection and rehabilitation of age-related motor skills impairment: neurophysiological biomarkers and perspectives







BRAIN COMPUTER INTERFACE

Summary: Age-related decline in motor control, manifesting as impaired posture, gait, and slowed movement execution, significantly diminishes the quality of life in older adults. These functional deficits are associated with alterations in neurophysiological data, which are analyzed using advanced techniques...

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# **Neuroanatomy-Informed Brain-Machine Hybrid Intelligence** for Robust Acoustic Target Detection

Luzheng 1 63
Bi 2025-10-20 min words

BRAIN COMPUTER INTERFACE

Summary: Sound target detection (STD) plays a critical role in modern acoustic sensing systems. However, existing automated STD methods show poor robustness and limited generalization, especially under low signal-to-noise ratio (SNR) conditions or when processing previously unencountered sound categories. To...

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# **Examining the associations between nonbelieved memories** and memory distrust, self-esteem, and rumination.

1 2022-11-10 min 175 words



CLINICAL NEUROSCIENCE

Summary: When beliefs in autobiographical memories are reduced while recollections remain relatively intact, a phenomenon termed nonbelieved memories (NBMs) unfolds. The current preregistered study (<em>N</em> = 104) used a 3-week longitudinal design to investigate the relationships between the frequency of ...

**Read full article:** 

http://doi.org/10.1037/cns0000344

# Relationship between thought suppression and dissociation and the mediating effect of rumination and unusual sleep experiences.

1 198 min words

CLINICAL NEUROSCIENCE

Summary: Dissociation is a phenomenon present in a wide variety of psychiatric disorders as well as in the general population. The objective of this study was to examine the relation between trait thought suppression (TS) and development of dissociative phenomena in the nonclinical population, with emphasis ...

**№** Read full article:

http://doi.org/10.1037/cns0000366

## Mental pain, boredom, and diffuse nociception.

1 237 min words





CLINICAL NEUROSCIENCE

**Summary:** In this article, I propose a novel theory to explain the possible physiological origins of the relatively mild mental pain that is often labeled as boredom and possibly loneliness or a negative mood, depending on one's situation. My admittedly speculative hypothesis is that most people in modern soc...

Read full article:

http://doi.org/10.1037/cns0000405

# Monolinguals outperform bilinguals in language but not executive function in aging and cognitive impairment.

1 2025-07-03 min 267 NEUROPSYCHOLOGY

**Summary:** Objective: People with subjective cognitive decline (SCD) self-report declining cognitive function, although objective cognitive performance remains normal. SCD is a risk factor for mild cognitive impairment (MCI) and dementia. Previous research has found differences in cognitive performance in bili...

http://doi.org/10.1037/neu0001028

# End-stage kidney disease patients exhibited slower responses to rapidly presented visual stimuli when compared with healthy controls.



**Summary:** Objective: Using a go/no-go test, we showed that end-stage kidney disease (ESKD) patients have a slower average reaction time (RT) compared with their respective controls. This study aimed to investigate whether the RT of ESKD patients worsened throughout the test and whether RTs were influenced by ...

Read full article:

http://doi.org/10.1037/neu0001016

# NGXSMK GameNet Optimizer: A Python-Powered, Privacy-First System and Network Optimization

| 1 | 353 | REDDIT PYTHON | 1 | 353 | Words | 1 | Word

**Summary:** <!-- SC\_OFF --><div class="md">I'm excited to share <strong>NGXSMK GameNet Optimizer</strong>, a comprehensive, open-source tool written primarily in <strong>Python</strong> designed to enhance system and network performance for gamers.

https://www.reddit.com/r/Python/comments/1oc4122/ngxsmk\_gamenet\_optimizer\_a\_pythonpowered/

## Show HN: I'm making a detective game built on Wikipedia

1 2025-10-17 min 2 HACKER NEWS

Summary: <a href="https://news.ycombinator.com/item?id=45617948">Comments</a>

https://detective.wiki/

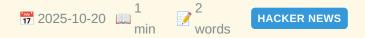
# **When Compiler Optimizations Hurt Performance**



Summary: <a href="https://news.ycombinator.com/item?id=45578080">Comments</a>

https://nemanjatrifunovic.substack.com/p/when-compiler-optimizations-hurt

## **Claude Code on the web**



Summary: <a href="https://news.ycombinator.com/item?id=45647166">Comments</a>

https://www.anthropic.com/news/claude-code-on-the-web

# x86-64 Playground – An online assembly editor and GDB-like debugger

modinfo 2025-10-20 min 13 HACKER NEWS

**Summary:** Article URL: <a href="https://x64.halb.it/">https://x64.halb.it/</a> Comments URL: <a href="https://news.ycombinator.com/item?id=45646958">https://news.ycombinator.com/item?id=45646958</a> Points: 133 # Comments: 11

https://x64.halb.it/

### **Claude Code on the web**

adocomplete 7 2025-10-20 min 13 HACKER NEWS

 $\label{lem:summary: p-Article URL: a href="https://www.anthropic.com/news/claude-code-on-the-web">https://www.anthropic.com/news/claude-code-on-the-web</a> Comments URL: <a href="https://news.ycombinator.com/item?id=45647166">https://news.ycombinator.com/item?id=45647166</a> Points: 436 # Comment...$ 

https://www.anthropic.com/news/claude-code-on-the-web

# **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?





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/">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...

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

http://daniellakens.blogspot.com/2025/07/are-meta-scientists-ignoring-philosophy.html

# Easily download files from the Open Science Framework with **Papercheck**

noreply@blogger.com (Daniel

3 765 min words

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 ...

Read full article:

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



1 108 min words



ERP BOOT CAMP

**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 Imwj6bu0"><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**



2 568 min words



**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**







BRAIN

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**









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/

## An AI methodology to reduce training intensity, error rates, and size of neural networks

1 243 min words 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...

Read full article:

https://www.frontiersin.org/articles/10.3389/fncom.2025.1628115

# Deep learning for inner speech recognition: a pilot comparative study of EEGNet and a spectro-temporal Transformer on bimodal EEG-fMRI data







FRONTIERS HUMAN NEUROSCIENCE

Summary: BackgroundInner speech—the covert articulation of words in one's mind—is a fundamental phenomenon in human cognition with growing interest across BCI. This pilot study evaluates and compares deep learning models for inner-speech classification using non-invasive EEG derived from a bimodal EEG-fMRI d...

https://www.frontiersin.org/articles/10.3389/fnhum.2025.1668935

# Postural sway in multiple sclerosis patients: interaction of vision, surface, and fatigue effects

Gregor Brecl 1 282

Jakob min words

FRONTIERS HUMAN NEUROSCIENCE

Summary: IntroductionPostural control impairments are common in patients with multiple sclerosis (MS), resulting in postural instability and increased fall risk. Sensory inputs are crucial to maintain balance adequately. Additionally, fatigue is one of the common and most disabling symptoms of MS, possibly c...

https://www.frontiersin.org/articles/10.3389/fnhum.2025.1624969

# Chronic pain and cognitive dysfunction: clinical manifestations, underlying mechanisms, and emerging therapeutic strategies

Zhaoqiong

1 164 min words

FRONTIERS NEUROSCIENCE

Summary: Chronic pain affects up to 60% of the population and not only impairs physical function but also leads to multidimensional neurocognitive deficits, including diminished attention, working memory impairment, and executive dysfunction. Clinical studies indicate that chronic pain induces gray matter at...

Read full article:

https://www.frontiersin.org/articles/10.3389/fnins.2025.1641903

# Multimodal neurobehavioral integration in binocular color rivalry: cortical-eye movement analysis under color, location, and combined stimuli

Zaiqing
Chen

Taiqing

Summary: ObjectiveColor and spatial location are key cues influencing visual selection in binocular color rivalry, jointly modulating attentional resource allocation and prefrontal cortex (PFC) activity. However, how these cues—individually and in combination—regulate ocular behavior and PFC activation remai...

**⊗** Read full article:

https://www.frontiersin.org/articles/10.3389/fnins.2025.1664583

# Functional activity changes after vergence and accommodative rehabilitation of concussion-related convergence insufficiency: CONCUSS clinical trial fMRI results



Tara L. 1 255

Alvarez min words



FRONTIERS NEUROSCIENCE

Summary: IntroductionThe CONCUSS clinical trial examined the neural changes associated with office-based vergence/accommodative therapy with movement (OBVAM) in concussion-related convergence insufficiency (CONC-CI). Methods The following assessments were collected at baseline and post-OBVAM therapy: activity ...

https://www.frontiersin.org/articles/10.3389/fnins.2025.1703781

# Reversible cerebral vasoconstriction syndrome-related headache and delayed cerebral infarction: a mini review



Jin 1 219
Yang min words

FRONTIERS NEUROSCIENCE

**Summary:** Reversible cerebral vasoconstriction syndrome is a major cause of thunderclap headache and a preventable source of delayed ischaemic stroke. Despite expanding recognition, diagnosis is often delayed because early neuroimaging may be normal and vasoconstriction peaks in weeks two to three, and manage...

### 

https://www.frontiersin.org/articles/10.3389/fnins.2025.1698056

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



Thomas 1 70
Hummel min words



TACTILE ACUITY

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
Kajimoto

75 TACTILE ACUITY words

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









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

2025-07-02

min

80

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...

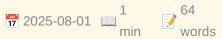
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# Sensitivity and vagal reactivity to C-tactile-mediated affective touch in mild cognitive impairment due to Alzheimer's disease







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:

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

Eric 1 2025-08-24 min 22 TACTILE ACUITY

**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/?

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



**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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https://pubmed.ncbi.nlm.nih.gov/40924900/?

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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 TACTILE ACUITY words

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

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

Runar
Unnthorsson

1
2025-09-27
min

65
TACTILE ACUITY

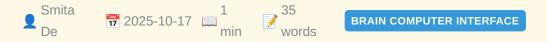
**Summary:** Systems presenting haptic information have emerged as an important technological advance in assisting individuals with sensory impairments or amputations, where the aim is to enhance sensory perception or provide sensory substitution through tactile feedback. These systems provide information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

### **⊗** Read full article:

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

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# Simple Prostatectomy is an Effective Option for BPH Patients With Hypocontractile Bladders



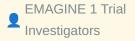
**Summary:** CONCLUSIONS: This is one of the first studies assessing outcomes of SP in patients with hypocontractile bladders. SP is an effective surgical option for patients with impaired detrusor function including those who are catheter dependent.

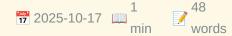
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+e462414

# Electromagnetic Stimulation to Reduce Disability After Ischemic Stroke: The EMAGINE Randomized Clinical Trial





BRAIN COMPUTER INTERFACE

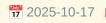
**Summary:** CONCLUSION AND RELEVANCE: This trial found that ENTF therapy is safe. Although the difference between groups was not statistically significant, ENTF therapy may reduce global disability in patients with severe baseline disability after ischemic stroke. These results warrant confirmation in a higher ...

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+e462414

# A different bimodal: case series of patients with a cochlear implant and a contralateral bone conduction implant









BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: The synergy of electrical and vibratory auditory stimulation observed in this case series provided subjective functional benefits and measurable speech perception benefits for some patients, while others experienced minimal or no measurable benefit and ceased usage.

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# Progress in the combined application of Brain-Computer Interface and non-invasive brain stimulation for post-stroke motor recovery



**Summary:** Stroke remains one of the leading causes of disability and death among adults globally. Both Brain-Computer Interface (BCI) and Non-invasive Brain Stimulation (NIBS) have shown significant potential in facilitating motor recovery in stroke patients. The combination of BCI and NIBS enhances brain fun...

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+e462414

# Modulation of brain oscillations by continuous theta burst stimulation in patients with insomnia









BRAIN COMPUTER INTERFACE

Summary: Continuous theta burst stimulation (cTBS) induces long-lasting depression of cortical excitability in motor cortex. In the present study, we explored the modulation of cTBS on resting state electroencephalogram (rsEEG) during wakefulness and subsequent sleep in patients with insomnia disorder. Forty...

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# Establishing a comprehensive national auditory implant registry in Japan: Trends and demographics from the first two years (2023-2024)









BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: This is the first comprehensive report from the national registry in Japan that includes not only CIs but also AMEIs and BCIs. The registry demonstrated reliable data capture and highlighted important trends in patient demographics and surgical practices. Continued data collection will e...

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# Emoface: Al-assisted diagnostic model for differentiating major depressive disorder and bipolar disorder via facial biomarkers



**Summary:** Affective disorders, including Major Depressive Disorder (MDD) and Bipolar Disorder (BD), exhibit significant mood abnormalities, making rapid diagnosis essential for social stability and healthcare efficiency. Traditional diagnostic solutions, including medical history collection and psychological ...

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+e462414

# An Explainable 3D-Deep Learning Model for EEG Decoding in **Brain-Computer Interface Applications**



1 2025-10-19 min 68 words

BRAIN COMPUTER INTERFACE

Summary: Decoding electroencephalographic (EEG) signals is of key importance in the development of brain-computer interface (BCI) systems. However, high inter-subject variability in EEG signals requires user-specific calibration, which can be time-consuming and limit the application of deep learning approach...

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# Detection and rehabilitation of age-related motor skills impairment: neurophysiological biomarkers and perspectives







BRAIN COMPUTER INTERFACE

Summary: Age-related decline in motor control, manifesting as impaired posture, gait, and slowed movement execution, significantly diminishes the quality of life in older adults. These functional deficits are associated with alterations in neurophysiological data, which are analyzed using advanced techniques...

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# **Neuroanatomy-Informed Brain-Machine Hybrid Intelligence** for Robust Acoustic Target Detection

Luzheng 1 63
Bi 2025-10-20 min words

BRAIN COMPUTER INTERFACE

Summary: Sound target detection (STD) plays a critical role in modern acoustic sensing systems. However, existing automated STD methods show poor robustness and limited generalization, especially under low signal-to-noise ratio (SNR) conditions or when processing previously unencountered sound categories. To...

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# Validation of immersive virtual reality line and baguette bisection tasks for the assessment of unilateral spatial neglect.

1 258 min words



NEUROPSYCHOLOGY

Summary: Objective: Unilateral spatial neglect (USN) assessment is commonly based on paper-and-pencil tests, including the line bisection task. However, this task lacks sensitivity and does not reflect the symptomatic heterogeneity of USN patients, such as difficulties in extrapersonal space or encountered i...

**⊗** Read full article:

http://doi.org/10.1037/neu0001024

# The Reading the Mind in the Eyes Test for adults: A refined version in Spanish.

1 193 NEUROPSYCHOLOGY words

**Summary:** Objective: The Reading of the Mind in the Eyes Test (RMET) is widely used to assess theory of mind, but its validity has recently been questioned. This study aimed to present a refined Spanish version of the test and examine its psychometric properties. Method: A total of 1,185 participants from Col...

http://doi.org/10.1037/neu0001033

Updating the Mattis Dementia Rating Scale to <em>DSM-5</em>-TR/<em>ICD-11</em>: A new item-division based on the current neurocognitive domains.



**Summary:** Objective: The Mattis Dementia Rating Scale (DRS), a widely used cognitive assessment tool, has been revised to align with contemporary diagnostic criteria and cognitive domain classifications such as those outlined in <em>Diagnostic Statistical Manual for Mental Disorders</em>, fifth edition—text r...

http://doi.org/10.1037/neu0001029

# Inhibitory control underpins the relationship between cognitive and psychological inflexibility after a moderate to severe traumatic brain injury.



**Summary:** Objective: Cognitive flexibility is proposed as being one "building block" of psychological inflexibility/flexibility, yet empirical studies examining these associations are scarce. This study aims to examine the relationship between these constructs in those with a moderate to severe traumatic brai...

**⊗** Read full article:

http://doi.org/10.1037/neu0001018

# Access computed Excel values made easy using calcworkbook library



**Summary:** <!-- SC\_OFF --><div class="md"><code>calc-workbook</code> is an easy-to-use Python library that lets you access <em>computed Excel values</em> directly from Python. It loads Excel files, evaluates all formulas using the <code>formulas</code> engine, and provides a clean, minimal API to read the c...

Read full article:

https://www.reddit.com/r/Python/comments/1obi9f6/access\_computed\_excel\_values\_made\_easy\_using/

### TernFS – an exabyte scale, multi-region distributed filesystem

**Summary:** Article URL: <a href="https://www.xtxmarkets.com/tech/2025-ternfs/#posix-shaped">https://www.xtxmarkets.com/tech/2025-ternfs/#posix-shaped</a> Comments URL: <a href="https://news.ycombinator.com/item?id=45646691">https://news.ycombinator.com/item?id=45646691">https://news.ycombinator.com/item?id=45646691</a> Points: 105 #...

https://www.xtxmarkets.com/tech/2025-ternfs/#posix-shaped

# Perineuronal nets in the rodent suprachiasmatic nucleus

1 22 NEUROSCIENCE JOURNAL words

**Summary:** Publication date: 19 November 2025<b>Source:</b><br/>Neuroscience, Volume 588Author(s): Patricia R. Blakely, Naila F. Jamani, Katelyn<br/>G. Horsley, Kiana Hampton, Michael C. Antle

https://www.sciencedirect.com/science/article/pii/S030645222501019X?dgcid=rss sd all

# Understanding the relationship between rosemary odor and mental workload through deep learning

NEUROSCIENCE JOURNAL

Summary: Publication date: 19 November 2025<b>Source:</b> Neuroscience, Volume 588Author(s): Evin Şahin Sadık, Hamdi Melih Saraoğlu, Sibel Canbaz Kabay, Cahit Keskinkılıç

Read full article:

https://www.sciencedirect.com/science/article/pii/S0306452225009686?dgcid=rss\_sd\_all

# Choroid plexus enlargement correlates with cognitive impairment and brain atrophy in patients with temporal lobe epilepsy



NEUROSCIENCE JOURNAL

**Summary:** Publication date: 19 November 2025<b>Source:</b> Neuroscience, Volume 588Author(s): Ran Li, Kehong Zeng, Jinshuai Liu, Zifan Yang, Yu Wang

https://www.sciencedirect.com/science/article/pii/S0306452225009765?dgcid=rss sd all

# Investigating the role of rumination on reward and punishment processing in an operant conditioning task using event-related potentials

NEUROSCIENCE JOURNAL

Summary: Publication date: 19 November 2025<b>Source:</b> Neuroscience, Volume 588Author(s): Carolina Ceruti, Dennis Boye Larsen, Giulia Erica Aliotta, Elia Valentini, Kristian Hennings, Carina Graversen, Carsten Dahl Mørch, Laura Petrini

#### **⊗** Read full article:

https://www.sciencedirect.com/science/article/pii/S0306452225010103?dgcid=rss sd all

# Diurnal variations and intermittent arousals modulate jawopening and -closing muscle activity level during sleep in rats



NEUROSCIENCE JOURNAL

**Summary:** Publication date: 19 November 2025<b>Source:</b> Neuroscience, Volume 588Author(s): Yiwen Zhu, Masaharu Yamada, Noriko Minota, Ayano Katagiri, Takafumi Kato

#### 

https://www.sciencedirect.com/science/article/pii/S0306452225009881?dgcid=rss\_sd\_all

### Effects of olfactory training on patients with parosmia

1 min

**NEUROSCIENCE JOURNAL** 

**Summary:** Publication date: 19 November 2025<b>Source:</b><br/>Neuroscience, Volume 588Author(s): Zetian Li, Luisa Richter, Tanja Krueger, Antje<br/>Haehner, Thomas Hummel

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# Cortical dynamics underlying motor skill acquisition: Insights from sequential and random practice using transcranial magnetic stimulation-electroencephalography

1 min



**NEUROSCIENCE JOURNAL** 

**Summary:** Publication date: 19 November 2025<b>Source:</b><br/>Neuroscience, Volume 588Author(s): Tomoya Kokue, Ryoki Sasaki, Yuma<br/>Takenaka, Kenichi Sugawara

https://www.sciencedirect.com/science/article/pii/S0306452225010152?dgcid=rss\_sd\_all

# Emoface: Al-assisted diagnostic model for differentiating major depressive disorder and bipolar disorder via facial biomarkers





https://www.nature.com/articles/s44184-025-00164-4

## Engineered 3D immuno-glial-neurovascular human miBrain model

Alice E. StantonAdele BubnysEmre AgbasBenjamin JamesDong Shin ParkAlan JiangRebecca L.

PinalsLiwang LiuNhat TruongAnjanet LoonColin StaabOyku CeritHsin-Lan WenDavid MankusMargaret E. BisherAbigail K. R. Lytton-JeanManolis KellisJoel W. BlanchardRobert LangerLi-Huei TsaiaKoch Institute, Massachusetts Institute of Technology, Cambridge, MA 02139bPicower Institute for Learning and Memory, Massachusetts Institute of Technology, Cambridge, MA 02139cDepartment of Brain and Cognitive Sciences, Massachusetts Institute of Technology, Cambridge, MA 02139dDepartment of Electrical Engineering and Computer Science, Massachusetts Institute of Technology, Cambridge, MA 02139eBroad Institute of Harvard and Massachusetts Institute of Technology, Cambridge, MA 02139fDepartment of Anesthesiology, Boston Children's Hospital, Boston, MA 02139gDepartment of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, MA 02139hDivision of Health Science and Technology, Massachusetts Institute of Technology, Cambridge, MA 02139iInstitute for Medical Engineering and Science, Massachusetts Institute of Technology, Cambridge, MA 02139





Summary: Proceedings of the National Academy of Sciences, Volume 122, Issue 42, October 2025. <br/>
<br/>
SignificanceTo address the lack of human cell-based models incorporating all six of the major brain cell types together, which are critically needed to mimic features of brain pathobiology and accelerate mecha...



https://www.pnas.org/doi/abs/10.1073/pnas.2511596122?af=R

# Reconfiguration of brain-wide neural activity after early life adversity

Taylor W. UselmanRussell E. JacobsElaine L. BeareraDepartment of Pathology, University of New Mexico Health Sciences Center, Albuquerque, NM 87131bZilkha Neurogenetic Institute, Keck School

■ of Medicine of University of Southern California, Los Angeles, CA 90033cBeckman Institute, California
Institute of Technology, Pasadena, CA 91125dDivision of Biology and Biological Engineering, California
Institute of Technology, Pasadena, CA 91125



**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 42, October 2025. <br/>
SignificanceEarly life adversity (ELA) is a crucial determinant of adult health. Yet the neurobiological basis for this remains elusive. Localized brain regions display atypical neural activity in rodents who ...

https://www.pnas.org/doi/abs/10.1073/pnas.2506140122?af=R

# Hierarchical dynamic coding coordinates speech comprehension in the human brain

Laura GwilliamsAlec MarantzDavid PoeppelJean-Rémi KingaDepartment of Psychology, Stanford University, Stanford, CA 94305bWu Tsai Neurosciences Institute, Stanford University, Stanford, CA 94305cStanford Data Science, Stanford University, Stanford, CA 94305dDepartment of Psychology, New York University, New York, NY 10003eDepartment of Linguistics, New York University, New York, NY 10003fEcole Normale Superieure, Paris Sciences et Lettres (PSL), CNRS, Paris 75005, FrancegMeta AI, Paris 75002, France



**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 42, October 2025. <br/>
SignificanceTo understand speech, the brain generates a hierarchy of neural representations, which map from sound to meaning. We recorded whole-brain activity while participants listened to audiobooks and mode...

#### 

https://www.pnas.org/doi/abs/10.1073/pnas.2422097122?af=R

# 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

# 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

### Interventions to Reduce Incidence and Progression of Myopia in Children and Adults

Chi Pui
Pang
Pang
To 2025-10-18
Pang
To 76
Words
Low Vision

Summary: The alarming increase in childhood myopia has emerged as a significant public health concern. Due to its long-term consequences, there is also an expanding interest in adult-onset myopia. This review provides a comprehensive summary of interventions for slowing the onset and progression of myopia an...

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### Lamina cribrosa shape in non-human primates is different from that of humans

Ian A

1 77 min words

LOW VISION

Summary: Non-human primates (NHPs) are a crucial model for studying glaucoma because of their similarities to humans in anatomy, physiology and pathology. Our goal in this study was to quantify in vivo NHP lamina cribrosa (LC) shapes at low, normal, and elevated intraocular pressures (IOPs), and compare them...

#### 

https://pubmed.ncbi.nlm.nih.gov/41109592/?

# Associations of adverse childhood experiences, inflammation, and cognition in older Black adults

Indira C
Turney

1 62 min words

LOW VISION

Summary: CONCLUSIONS: Distinct ACEs profiles were significantly associated with episodic memory and HPA dysregulation-related inflammation. The severe adversity, parental conflict, and low adversity groups showed no reliable predictions to cognition or cognitive status. These findings highlight the need for ...

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## Visual Assessment in Elderly Inpatients Following a Fall

1 65 min words

LOW VISION

Summary: Introduction Falls are a major cause of morbidity in older adults, with visual impairment recognized as a key modifiable risk factor. National guidelines recommend vision assessment following a fall; however, adherence remains suboptimal. This quality improvement project aimed to evaluate compliance...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41111684/?

# **Cerebral Venous Sinus Thrombosis Following Nitrous Oxide Abuse: A Clinical Reminder of a Growing Trend**







Summary: Cerebral venous sinus thrombosis (CVST) is a rare cause of stroke that may mimic other intracranial disorders. A 32-year-old male with bipolar disorder and prior venous thromboembolism presented with severe occipital headache, progressive blurred vision, and a brief sensory episode. He reported rece...

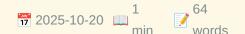
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# **Swept-Source Optical Coherence Tomography Angiography After Rhegmatogenous Retinal Detachment Treated With Different Approaches**











Summary: Purpose: To present long-term changes in swept-source optical coherence tomography angiography (SS-OCTA) after different approaches in rhegmatogenous retinal detachment. Methods: This was a retrospective study of patients after segmental buckling, circumferential buckling, primary vitrectomy, or com...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41112492/?

# Repeated low-intensity red light therapy for childhood myopia: a retrospective cohort study

Fengling 1 36
Xu min words

LOW VISION

Summary: CONCLUSION: RLRL therapy significantly slowed myopia progression and improved visual and accommodative function in children over 12 months, with no major safety concerns. These findings support RLRL as a promising, safe intervention for pediatric myopia control.

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# DWMamba: a structure-aware adaptive state space network for image quality improvement

Zhixiong

1 59 min words

**LOW VISION** 

Summary: Overcoming visual degradation in challenging imaging scenarios is essential for accurate scene understanding. Although deep learning methods have integrated various perceptual capabilities and achieved remarkable progress, their high computational cost limits practical deployment under resource-cons...

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https://pubmed.ncbi.nlm.nih.gov/41113434/?

### Rare Presentations of Acute Angle Closure: A Case Series

Suneeta 1 22

Dubey min words

LOW VISION

Summary: CONCLUSION: Angle closure should be strongly suspected in patients with pain and sudden vision blurring, even if the initial IOP is low.

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https://pubmed.ncbi.nlm.nih.gov/41113686/?

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# A Cross-sectional Study on Adherence to Topical Glaucoma **Medication and its Determinants among Patients Attending Glaucoma Clinics of a Tertiary Care Institute of Ahmedabad** City, Gujarat, India







Summary: CONCLUSION: Low adherence to medication was found among 82% of cases. Factors significantly associated with adherence were gender, education, duration of treatment, and having received prior instruction. Forgetfulness and the cost of treatment were the most common factors leading to low treatment ad...

#### 

https://pubmed.ncbi.nlm.nih.gov/41113788/?

# High-intensity transcranial alternating current stimulation combined with pharmacotherapy for adolescent major depressive disorder: a prospective case report study

**Summary:** CONCLUSIONS: The combination of HI-tACS and pharmacotherapy demonstrated potential early effects in this small cohort of adolescents with MDD, particularly during the initial phase of treatment. These preliminary findings warrant further investigation through large-scale randomized controlled trials...

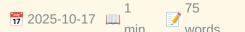
#### **⊗** Read full article:

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# Non-invasive brain stimulation for suicidal ideation: a systematic review and metanalysis of the current literature









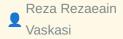
TDCS TACS TRNS

Summary: Data suggests that the available therapeutic tools are still insufficient to deal with suicidality. Non-Invasive Brain Stimulation techniques (NIBS) have entered the recognized guidelines for therapies in psychiatry due to the advantages related to safety and tolerability. The purpose of this review...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41103967/?

Active and sham transcranial direct-current stimulation (tDCS) plus core stability on the knee kinematic and performance of the lower limb of the soccer players with dynamic knee valgus; two armed randomized clinical trial







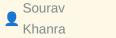
TDCS TACS TRNS

Summary: Dynamic knee valgus (DKV) is a prevalent risk factor for anterior cruciate ligament (ACL) injuries in soccer players, particularly during noncontact mechanisms. Transcranial direct-current stimulation (tDCS) and core stability exercises have shown promise in enhancing motor control and biomechanical...

#### 

https://pubmed.ncbi.nlm.nih.gov/41103970/?

# Effect of Precision-based HD-tDCS Over Conventional HDtDCS in Young-onset Mania: Protocol for an Active **Comparison fMRI and TMS Study**



1 31 min words



TDCS TACS TRNS

Summary: CONCLUSIONS: This study protocol aims to explore the effect of novel precision-based HD-tDCS in young-onset mania compared to conventional HD-tDCS, thereby allowing for the examination of precision neuromodulation in young-onset mania.

#### 

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r1ebioUg42SIGRyVKSoW4m6X-ecQ00&fc=None&ff=20251021012032&v=2.18.0.post9+e462414

# **Progress in the combined application of Brain-Computer** Interface and non-invasive brain stimulation for post-stroke motor recovery









TDCS TACS TRNS

Summary: Stroke remains one of the leading causes of disability and death among adults globally. Both Brain-Computer Interface (BCI) and Non-invasive Brain Stimulation (NIBS) have shown significant potential in facilitating motor recovery in stroke patients. The combination of BCI and NIBS enhances brain fun...

#### 

https://pubmed.ncbi.nlm.nih.gov/41106071/?

# **Development and Validation of The Agonistic Continuum** Scale (TACS)

Raymond A
Knight

TOCS TACS TRNS
words

Summary: Sexual violence includes a wide variety of behaviors, ranging from harassment to coercion, to rape, to sexual homicide. Although the criminal justice system distinguishes these forms of sexual violence, several studies have suggested that they represent different degrees of severity of an underlying...

#### 

https://pubmed.ncbi.nlm.nih.gov/41108027/?

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# Military applications of transcranial direct current stimulation (tDCS) for enhanced multitasking performance

Nathan 1 62
Ward min words

TDCS TACS TRNS

Summary: Effective multitasking in high-stakes military environments is critical yet often compromised by cognitive overload, leading to operational errors. This scoping review explores the potential of transcranial direct current stimulation (tDCS) as a cognitive enhancement tool for improving multitasking ...

#### 

https://pubmed.ncbi.nlm.nih.gov/41110029/?

# Comparative efficacy of non-invasive brain stimulation for attention-deficit/hyperactivity disorder: a systematic review and network meta-analysis



Rui
Liu

1
2025-10-20
min

69
words

TDCS TACS TRNS



Summary: CONCLUSION: The dual-tDCS and a-tDCS may be considered among the preferred NIBS interventions for improving cognitive function in ADHD. Specifically, anodal tDCS over the left DLPFC plus cathodal tDCS over the right supraorbital area improved cognitive flexibility; while anodal tDCS over the left DL...

#### **⊗** Read full article:

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# Effect of preoperative transcranial direct current stimulation on postoperative delirium in elderly patients following laparoscopic surgery



1 31 min words

TDCS TACS TRNS

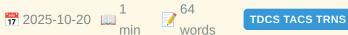
Summary: CONCLUSION: A single session of preoperative tDCS can reduce the incidence of POD in elderly patients undergoing major laparoscopic surgery and can also reduce postoperative anxiety and depression in these patients.

#### 

https://pubmed.ncbi.nlm.nih.gov/41112611/?

# Noninvasive Neurostimulation to the Inferior Frontal Sulcus or Cerebellum Improves Accuracy But Not Timing in a **Speech Motor Learning Task**







Summary: Speech motor learning depends on phonological working memory mechanisms in left posterior inferior frontal sulcus (LpIFS) and motor learning mechanisms in right cerebellum (RCbm). This study examines how transcranial direct current stimulation (tDCS), applied focally to these regions, affects speech...

#### 

https://pubmed.ncbi.nlm.nih.gov/41113138/?

Diagnostic Efficacy of Olfactory Function Test Using Functional Near-Infrared Spectroscopy with Machine Learning in Healthy Adults: A Prospective Diagnostic-Accuracy (Feasibility/Validation) Study in Healthy Adults with Algorithm Development



**Summary:** Background/Objectives: The YSK olfactory function (YOF) test is a culturally adapted psychophysical tool that assesses threshold, discrimination, and identification. This study evaluated whether functional near-infrared spectroscopy (fNIRS) synchronized with routine YOF testing, combined with machin...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41095653/?

# Enhanced Activation in the Dorsolateral Prefrontal Cortex and Inferior Parietal Lobule During Recovery from Body Dissatisfaction



**Summary:** Previous studies have examined the neural mechanisms of body dissatisfaction. This study aimed to investigate the neural basis of recovery from body dissatisfaction. Sixty-seven young women participated in this study, engaging in a fat talk-a conversation known to induce body dissatisfaction-followe...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41099370/?

# Immediate modulation effects of Tongue Tri-needle on brain functional networks in infratentorial stroke patients with dysphagia: a randomized controlled trial



**Summary:** CONCLUSION: Infratentorial stroke patients with dysphagia exhibit disrupted functional connectivity within the fronto-temporo-sensorimotor network, which is associated with clinical impairment. Tongue Tri-needle multi-stage, selective reconfiguration of brain functional networks, particularly by mod...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41103520/?

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# Riemannian geometry boosts functional near-infrared spectroscopy-based brain-state classification accuracy



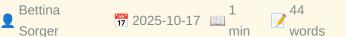
**Summary:** CONCLUSION: To our knowledge, we are the first to demonstrate that the proposed Riemannian-geometry-based classification approach is both powerful and viable for fNIRS data, substantially increasing the accuracy in binary and multi-class classification of brain activation patterns.

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41104354/?

# Sensitive and specific fNIRS-based approach for awareness detection in disorders of consciousness: proof of principle in healthy adults







Summary: CONCLUSION: This individualized diagnostic approach may have the potential to significantly enhance diagnostic accuracy for DoCs. It provides a noninvasive, efficient, and objective assessment, potentially reducing the rate of misdiagnosis rates. The practicality and minimal technical requirements o...

#### **⊗** Read full article:

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# **Neural and behavioral dynamics of dyadic rhythm** coordination across limb pairings











Summary: Interpersonal motor synchronization relies on precise neural coordination, yet its underlying brain mechanisms remain incompletely understood. Guided by mutual prediction theory, we investigated how temporal structure and effector-specific constraints shape dyadic coordination. Using functional near...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41106782/?

### Motor imagery in individuals with congenital aphantasia

Magdalena Szubielska

1 71 min words

FNIRS

**Summary:** Individuals who experience aphantasia have an inability to create sensory mental images, what lead to a range of cognitive and behavioral differences compared to the general population. However, little is known about how this phenomenon affects the creation of motor imagery. Our study aims to check ...

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# **Interpersonal Neural Synchrony Across Levels of Interpersonal Closeness and Social Interactivity**



1 63 min words





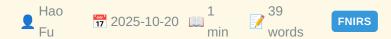


**Summary:** Interpersonal neural synchrony is a fundamental aspect of social interactions, offering insights into the neural mechanisms underlying human connection and developmental outcomes. So far, hyperscanning studies have examined synchrony across different dyads and tasks, leading to inconsistencies in ex...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41110650/?

# Influence of Exercise Prescription on the Recovery of Cognitive Function In College Students With Mild-to-Moderate Depression



**Summary:** CONCLUSION: Receiving exercise prescription intervention can effectively reduce the severity of depressive symptoms, enhance the recovery of brain cognitive function, and improve the neurosecretory system function recovery and the expressions of neurotrophic factors in college students with mild-to-...

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# Street dancing enhances cognitive reserve in young females: an fNIRS study



**Summary:** CONCLUSION: The 18-week street dance intervention effectively improved working memory, inhibitory control, and cognitive flexibility, contributing to enhanced cognitive reserve. As a physical activity combining rhythm and coordination, street dance offers a promising early intervention strategy for ...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41113441/?

# Simple Prostatectomy is an Effective Option for BPH Patients With Hypocontractile Bladders









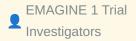
BRAIN COMPUTER INTERFACE

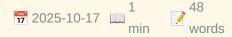
Summary: CONCLUSIONS: This is one of the first studies assessing outcomes of SP in patients with hypocontractile bladders. SP is an effective surgical option for patients with impaired detrusor function including those who are catheter dependent.

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# Electromagnetic Stimulation to Reduce Disability After Ischemic Stroke: The EMAGINE Randomized Clinical Trial





BRAIN COMPUTER INTERFACE

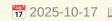
**Summary:** CONCLUSION AND RELEVANCE: This trial found that ENTF therapy is safe. Although the difference between groups was not statistically significant, ENTF therapy may reduce global disability in patients with severe baseline disability after ischemic stroke. These results warrant confirmation in a higher ...

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+e462414

# A different bimodal: case series of patients with a cochlear implant and a contralateral bone conduction implant







BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSION: The synergy of electrical and vibratory auditory stimulation observed in this case series provided subjective functional benefits and measurable speech perception benefits for some patients, while others experienced minimal or no measurable benefit and ceased usage.

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# Progress in the combined application of Brain-Computer Interface and non-invasive brain stimulation for post-stroke motor recovery



**Summary:** Stroke remains one of the leading causes of disability and death among adults globally. Both Brain-Computer Interface (BCI) and Non-invasive Brain Stimulation (NIBS) have shown significant potential in facilitating motor recovery in stroke patients. The combination of BCI and NIBS enhances brain fun...

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+e462414

## Modulation of brain oscillations by continuous theta burst stimulation in patients with insomnia









BRAIN COMPUTER INTERFACE

Summary: Continuous theta burst stimulation (cTBS) induces long-lasting depression of cortical excitability in motor cortex. In the present study, we explored the modulation of cTBS on resting state electroencephalogram (rsEEG) during wakefulness and subsequent sleep in patients with insomnia disorder. Forty...

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# Establishing a comprehensive national auditory implant registry in Japan: Trends and demographics from the first two years (2023-2024)







BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: This is the first comprehensive report from the national registry in Japan that includes not only CIs but also AMEIs and BCIs. The registry demonstrated reliable data capture and highlighted important trends in patient demographics and surgical practices. Continued data collection will e...

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# Emoface: Al-assisted diagnostic model for differentiating major depressive disorder and bipolar disorder via facial biomarkers



**Summary:** Affective disorders, including Major Depressive Disorder (MDD) and Bipolar Disorder (BD), exhibit significant mood abnormalities, making rapid diagnosis essential for social stability and healthcare efficiency. Traditional diagnostic solutions, including medical history collection and psychological ...

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+e462414

## An Explainable 3D-Deep Learning Model for EEG Decoding in **Brain-Computer Interface Applications**



1 2025-10-19 min 68 words



BRAIN COMPUTER INTERFACE

Summary: Decoding electroencephalographic (EEG) signals is of key importance in the development of brain-computer interface (BCI) systems. However, high inter-subject variability in EEG signals requires user-specific calibration, which can be time-consuming and limit the application of deep learning approach...

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# Detection and rehabilitation of age-related motor skills impairment: neurophysiological biomarkers and perspectives







BRAIN COMPUTER INTERFACE

Summary: Age-related decline in motor control, manifesting as impaired posture, gait, and slowed movement execution, significantly diminishes the quality of life in older adults. These functional deficits are associated with alterations in neurophysiological data, which are analyzed using advanced techniques...

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# Neuroanatomy-Informed Brain-Machine Hybrid Intelligence for Robust Acoustic Target Detection

Luzheng 1 63
Bi 2025-10-20 min words

BRAIN COMPUTER INTERFACE

Summary: Sound target detection (STD) plays a critical role in modern acoustic sensing systems. However, existing automated STD methods show poor robustness and limited generalization, especially under low signal-to-noise ratio (SNR) conditions or when processing previously unencountered sound categories. To...

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# Assembly-to-Minecraft-Command-Block-Compiler (Python) updated — testers & contributors wanted

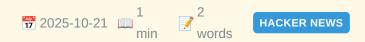
REDDIT PYTHON

Summary: <!-- SC\_OFF --><div class="md"> I updated a small Python compiler that converts an assembly-like language into Minecraft command-block command sequences. Looking for testers, feedback, and contributors. Repo: <a href="https://github.com/">https://github.com/</a> Bowser04/Assembly-to-Minecraft-Command-Block-Compiler">https...

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

https://www.reddit.com/r/Python/comments/1obrz11/assemblytominecraftcommandblockcompiler\_python/

# 60k kids have avoided peanut allergies due to 2015 advice, study finds



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https://www.cbsnews.com/news/peanut-allergies-60000-kids-avoided-2015-advice/

# 60k kids have avoided peanut allergies due to 2015 advice, study finds



**Summary:** Article URL: <a href="https://www.cbsnews.com/news/peanut-allergies-60000-kids-avoided-2015-advice/">https://www.cbsnews.com/news/peanut-allergies-60000-kids-avoided-2015-advice/</a> Comments URL: <a href="https://news.ycombinator.com/item?id=45652307">https://news.ycombinator.com/item?id=...

https://www.cbsnews.com/news/peanut-allergies-60000-kids-avoided-2015-advice/







# 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

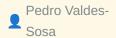
OOSTENVELD ROBERT

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

#### 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...

#### 

https://pubmed.ncbi.nlm.nih.gov/39229492/?

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

Krzysztof J
Gorgolewski

1 2024-09-23 min 82
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



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...

#### 

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...

#### 

https://pubmed.ncbi.nlm.nih.gov/40800964/?

#### Interventions to Reduce Incidence and Progression of Myopia in Children and Adults

Chi Pui
Pang
Pang
To 2025-10-18
Pang
To 76
Words
Low Vision

Summary: The alarming increase in childhood myopia has emerged as a significant public health concern. Due to its long-term consequences, there is also an expanding interest in adult-onset myopia. This review provides a comprehensive summary of interventions for slowing the onset and progression of myopia an...

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#### Lamina cribrosa shape in non-human primates is different from that of humans

Ian A

1 77 min words

LOW VISION

Summary: Non-human primates (NHPs) are a crucial model for studying glaucoma because of their similarities to humans in anatomy, physiology and pathology. Our goal in this study was to quantify in vivo NHP lamina cribrosa (LC) shapes at low, normal, and elevated intraocular pressures (IOPs), and compare them...

#### 

https://pubmed.ncbi.nlm.nih.gov/41109592/?

## Associations of adverse childhood experiences, inflammation, and cognition in older Black adults

Indira C
Turney

1 62 min words

LOW VISION

Summary: CONCLUSIONS: Distinct ACEs profiles were significantly associated with episodic memory and HPA dysregulation-related inflammation. The severe adversity, parental conflict, and low adversity groups showed no reliable predictions to cognition or cognitive status. These findings highlight the need for ...

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#### Visual Assessment in Elderly Inpatients Following a Fall

1 65 min words

LOW VISION

Summary: Introduction Falls are a major cause of morbidity in older adults, with visual impairment recognized as a key modifiable risk factor. National guidelines recommend vision assessment following a fall; however, adherence remains suboptimal. This quality improvement project aimed to evaluate compliance...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41111684/?

## **Cerebral Venous Sinus Thrombosis Following Nitrous Oxide Abuse: A Clinical Reminder of a Growing Trend**







Summary: Cerebral venous sinus thrombosis (CVST) is a rare cause of stroke that may mimic other intracranial disorders. A 32-year-old male with bipolar disorder and prior venous thromboembolism presented with severe occipital headache, progressive blurred vision, and a brief sensory episode. He reported rece...

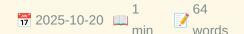
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## **Swept-Source Optical Coherence Tomography Angiography After Rhegmatogenous Retinal Detachment Treated With Different Approaches**









LOW VISION

Summary: Purpose: To present long-term changes in swept-source optical coherence tomography angiography (SS-OCTA) after different approaches in rhegmatogenous retinal detachment. Methods: This was a retrospective study of patients after segmental buckling, circumferential buckling, primary vitrectomy, or com...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41112492/?

## Repeated low-intensity red light therapy for childhood myopia: a retrospective cohort study

Fengling 1 36
Xu min words

LOW VISION

Summary: CONCLUSION: RLRL therapy significantly slowed myopia progression and improved visual and accommodative function in children over 12 months, with no major safety concerns. These findings support RLRL as a promising, safe intervention for pediatric myopia control.

#### 

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## DWMamba: a structure-aware adaptive state space network for image quality improvement

Zhixiong

1 59 min words

**LOW VISION** 

Summary: Overcoming visual degradation in challenging imaging scenarios is essential for accurate scene understanding. Although deep learning methods have integrated various perceptual capabilities and achieved remarkable progress, their high computational cost limits practical deployment under resource-cons...

#### 

https://pubmed.ncbi.nlm.nih.gov/41113434/?

#### Rare Presentations of Acute Angle Closure: A Case Series

Suneeta 1 22

Dubey min words

LOW VISION

Summary: CONCLUSION: Angle closure should be strongly suspected in patients with pain and sudden vision blurring, even if the initial IOP is low.

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## A Cross-sectional Study on Adherence to Topical Glaucoma **Medication and its Determinants among Patients Attending Glaucoma Clinics of a Tertiary Care Institute of Ahmedabad** City, Gujarat, India









Summary: CONCLUSION: Low adherence to medication was found among 82% of cases. Factors significantly associated with adherence were gender, education, duration of treatment, and having received prior instruction. Forgetfulness and the cost of treatment were the most common factors leading to low treatment ad...

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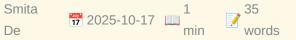
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## Simple Prostatectomy is an Effective Option for BPH Patients With Hypocontractile Bladders









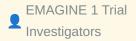
BRAIN COMPUTER INTERFACE

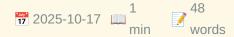
Summary: CONCLUSIONS: This is one of the first studies assessing outcomes of SP in patients with hypocontractile bladders. SP is an effective surgical option for patients with impaired detrusor function including those who are catheter dependent.

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## Electromagnetic Stimulation to Reduce Disability After Ischemic Stroke: The EMAGINE Randomized Clinical Trial





BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSION AND RELEVANCE: This trial found that ENTF therapy is safe. Although the difference between groups was not statistically significant, ENTF therapy may reduce global disability in patients with severe baseline disability after ischemic stroke. These results warrant confirmation in a higher ...

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+e462414

## A different bimodal: case series of patients with a cochlear implant and a contralateral bone conduction implant







BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSION: The synergy of electrical and vibratory auditory stimulation observed in this case series provided subjective functional benefits and measurable speech perception benefits for some patients, while others experienced minimal or no measurable benefit and ceased usage.

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# Progress in the combined application of Brain-Computer Interface and non-invasive brain stimulation for post-stroke motor recovery



**Summary:** Stroke remains one of the leading causes of disability and death among adults globally. Both Brain-Computer Interface (BCI) and Non-invasive Brain Stimulation (NIBS) have shown significant potential in facilitating motor recovery in stroke patients. The combination of BCI and NIBS enhances brain fun...

#### **⊗** Read full article:

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+e462414

## Modulation of brain oscillations by continuous theta burst stimulation in patients with insomnia









BRAIN COMPUTER INTERFACE

Summary: Continuous theta burst stimulation (cTBS) induces long-lasting depression of cortical excitability in motor cortex. In the present study, we explored the modulation of cTBS on resting state electroencephalogram (rsEEG) during wakefulness and subsequent sleep in patients with insomnia disorder. Forty...

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## Establishing a comprehensive national auditory implant registry in Japan: Trends and demographics from the first two years (2023-2024)









BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: This is the first comprehensive report from the national registry in Japan that includes not only CIs but also AMEIs and BCIs. The registry demonstrated reliable data capture and highlighted important trends in patient demographics and surgical practices. Continued data collection will e...

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# Emoface: Al-assisted diagnostic model for differentiating major depressive disorder and bipolar disorder via facial biomarkers



**Summary:** Affective disorders, including Major Depressive Disorder (MDD) and Bipolar Disorder (BD), exhibit significant mood abnormalities, making rapid diagnosis essential for social stability and healthcare efficiency. Traditional diagnostic solutions, including medical history collection and psychological ...

#### **⊗** Read full article:

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+e462414

### An Explainable 3D-Deep Learning Model for EEG Decoding in **Brain-Computer Interface Applications**

Nadia Mammone

1 2025-10-19 min 68 words

BRAIN COMPUTER INTERFACE

Summary: Decoding electroencephalographic (EEG) signals is of key importance in the development of brain-computer interface (BCI) systems. However, high inter-subject variability in EEG signals requires user-specific calibration, which can be time-consuming and limit the application of deep learning approach...

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## Detection and rehabilitation of age-related motor skills impairment: neurophysiological biomarkers and perspectives







BRAIN COMPUTER INTERFACE

Summary: Age-related decline in motor control, manifesting as impaired posture, gait, and slowed movement execution, significantly diminishes the quality of life in older adults. These functional deficits are associated with alterations in neurophysiological data, which are analyzed using advanced techniques...

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## Neuroanatomy-Informed Brain-Machine Hybrid Intelligence for Robust Acoustic Target Detection

Luzheng 1 63
Bi 2025-10-20 min words

BRAIN COMPUTER INTERFACE

Summary: Sound target detection (STD) plays a critical role in modern acoustic sensing systems. However, existing automated STD methods show poor robustness and limited generalization, especially under low signal-to-noise ratio (SNR) conditions or when processing previously unencountered sound categories. To...

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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...

**Read full article:** 

http://doi.org/10.1037/neu0001032

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

1 2025-09-15 min 261 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>.

1 146 NEUROPSYCHOLOGY words

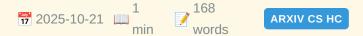
**Summary:** The journal continues to be a leading journal in the field but cannot rest on its laurels; concrete actions will be needed to increase the quantity and quality of submissions. To accomplish this, <em>Neuropsychology</em> needs to build on specific areas of strength. Accordingly, a revised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

**Read full article:** 

http://doi.org/10.1037/neu0001044

## Case Study of GAI for Generating Novel Images for Real-World Embroidery

Kate Glazko, Anika Arugunta, Janelle Chan, Nancy Jimenez-Garcia, Tashfia Sharmin, Jennifer Mankoff



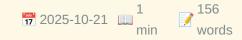
**Summary:** arXiv:2510.16223v1 Announce Type: new Abstract: In this paper, we present a case study exploring the potential use of Generative Artificial Intelligence (GAI) to address the real-world need of making the design of embroiderable art patterns more accessible. Through an auto-ethnographic case study b...



https://arxiv.org/abs/2510.16223

## VoiceMorph: How Al Voice Morphing Reveals the Boundaries of Auditory Self-Recognition

Kye Shimizu, Minghan Gao, Ananya Ganesh, Pattie Maes

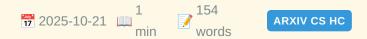


ARXIV CS HC

**Summary:** arXiv:2510.16192v1 Announce Type: new Abstract: This study investigated auditory self-recognition boundaries using AI voice morphing technology, examining when individuals cease recognizing their own voice. Through controlled morphing between participants' voices and demographically matched targets...

## "She's Like a Person but Better": Characterizing Companion-Assistant Dynamics in Human-Al Relationships

Aikaterina Manoli, Janet V. T. Pauketat, Ali Ladak, Hayoun Noh, Angel Hsing-Chi Hwang, Jay Reese Anthis



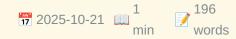
**Summary:** arXiv:2510.15905v1 Announce Type: new Abstract: Large language models are increasingly used for both task-based assistance and social companionship, yet research has typically focused on one or the other. Drawing on a survey (N = 204) and 30 interviews with high-engagement ChatGPT and Replika users...



https://arxiv.org/abs/2510.15905

## HealthDial: A No-Code LLM-Assisted Dialogue Authoring Tool for Healthcare Virtual Agents





ARXIV CS HC

**Summary:** arXiv:2510.15898v1 Announce Type: new Abstract: We introduce HealthDial, a dialogue authoring tool that helps healthcare providers and educators create virtual agents that deliver health education and counseling to patients over multiple conversations. HealthDial leverages large language models (LL...



## From Coordination to Personalization: A Trust-Aware Simulation Framework for Emergency Department Decision Support

Zoi Lygizou, Dimitris

1 247 min words

ARXIV CS HC

Summary: arXiv:2510.15896v1 Announce Type: new Abstract: Background/Objectives: Efficient task allocation in hospital emergency departments (EDs) is critical for operational efficiency and patient care quality, yet the complexity of staff coordination poses significant challenges. This study proposes a simu...

**⊗** Read full article:

https://arxiv.org/abs/2510.15896

#### BREATH: A Bio-Radar Embodied Agent for Tonal and Human-**Aware Diffusion Music Generation**

Yunzhe Wang, Xinyu Tang, Zhixun Huang, Xiaolong Yue, Yuxin Zeng

1 2025-10-21 min

171 words

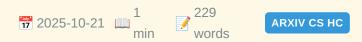
ARXIV CS HC

Summary: arXiv:2510.15895v1 Announce Type: new Abstract: We present a multimodal system for personalized music generation that integrates physiological sensing, LLM-based reasoning, and controllable audio synthesis. A millimeter-wave radar sensor non-invasively captures heart rate and respiration rate. Thes...

Read full article:

#### **Virtual Social Immersive Multi-Sensory E-Commerce**

Alpana Dubey, Suma Mani Kuriakose, Sumukha Anand, Nitish Bhardwaj, Shubhashis Sengupta



**Summary:** arXiv:2510.15894v1 Announce Type: new Abstract: In this paper, we present a virtual immersive multi sensorial experience, Aromaverse. Aromaverse is an immersive 3D multiplayer environment augmented with olfactive experience where users can experience and customize perfumes. Being multi player, user...



https://arxiv.org/abs/2510.15894

## Detecting and Preventing Harmful Behaviors in AI Companions: Development and Evaluation of the SHIELD Supervisory System

Ziv Ben-Zion, Paul Raffelh\"uschen, Max Zettl, Antonia L\"u\"ond, Achim Burrer, Philipp Homan, Tobias R Spiller



**Summary:** arXiv:2510.15891v1 Announce Type: new Abstract: Al companions powered by large language models (LLMs) are increasingly integrated into users' daily lives, offering emotional support and companionship. While existing safety systems focus on overt harms, they rarely address early-stage problematic be...

#### Read full article:

## A Real-Time BCI for Stroke Hand Rehabilitation Using Latent **EEG Features from Healthy Subjects**

F. M. Omar, A. M. Omar, K. H. Eyada, M. Rabie, M. A. Kamel, A. M. Azab

1 2025-10-21 min

170 words

ARXIV CS HC

Summary: arXiv:2510.15890v1 Announce Type: new Abstract: This study presents a realtime, portable brain-computer interface (BCI) system designed to support hand rehabilitation for stroke patients. The system combines a low cost 3D-printed robotic exoskeleton with an embedded controller that converts brain ...

https://arxiv.org/abs/2510.15890

## Mitigating Harmful Erraticism in LLMs Through Dialectical **Behavior Therapy Based De-Escalation Strategies**







**ARXIV CS HC** 

Summary: arXiv:2510.15889v1 Announce Type: new Abstract: The escalating demand for personalized AI chatbot interactions, capable of dynamically adapting to user emotional states and real-time requests, has highlighted critical limitations in current development paradigms. Existing methodologies, which rely ...

Read full article:

#### Absolute abstraction: a renormalisation group approach

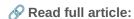
Carlo Orientale Caputo, Elias Seiffert, Enrico Frausin, Matteo Marsili

1 2025-10-21 min

175 words

ARXIV QBIO NC

Summary: arXiv:2407.01656v4 Announce Type: replace-cross Abstract: Abstraction is the process of extracting the essential features from raw data while ignoring irrelevant details. It is well known that abstraction emerges with depth in neural networks, where deep layers capture abstract characteristics of d...



https://arxiv.org/abs/2407.01656

#### Normative Modelling in Neuroimaging: A Practical Guide for Researchers

Nida Alyas, Jonathan Horsley, Bethany Little, Peter N. Taylor, Yujiang Wang, Karoline Leibera





ARXIV QBIO NC

Summary: arXiv:2509.07237v2 Announce Type: replace Abstract: Normative modelling is an increasingly common statistical technique in neuroimaging that estimates populationlevel benchmarks in brain structure. It enables the quantification of individual deviations from expected distributions whilst accounting...

#### The global communication pathways of the human brain transcend the cortical-subcortical-cerebellar division

Julian Schulte, Mario Senden, Gustavo Deco, Xenia Kobeleva, Gorka Zamora-L\'opez

2025-10-21

1 153 min words

ARXIV QBIO NC

Summary: arXiv:2505.22893v3 Announce Type: replace Abstract: Understanding how cortex, subcortex and cerebellum integrate is a major challenge for neuroscience, however, studies of the brain's structural connectivity have mostly focused on cortico-cortical links. Here, we used diffusion imaging to construct...

https://arxiv.org/abs/2505.22893

### Quantifying the compressibility of the human brain

Nicholas J. Weaver, Joshua I. Faskowitz, Richard F. Betzel, Christopher W.

2025-10-21



ARXIV QBIO NC

Summary: arXiv:2510.16327v1 Announce Type: cross Abstract: In the human brain, the allowed patterns of activity are constrained by the correlations between brain regions. Yet it remains unclear which correlations -- and how many -- are needed to predict large-scale neural activity. Here, we present an infor...

#### **WaveNet's Precision in EEG Classification**

Casper van Laar, Khubaib Ahmed

1 188 min words

ARXIV QBIO NC

Summary: arXiv:2510.15947v1 Announce Type: cross Abstract: This study introduces a WaveNet-based deep learning model designed to automate the classification of EEG signals into physiological, pathological, artifact, and noise categories. Traditional methods for EEG signal classification, which rely on exper...

https://arxiv.org/abs/2510.15947

## **Attention for Causal Relationship Discovery from Biological Neural Dynamics**

Ziyu Lu, Anika Tabassum, Shruti Kulkarni, Lu Mi, J. Nathan Kutz, Eric Shea-Brown, Seung-Hwan

1 134 min words



ARXIV QBIO NC

Summary: arXiv:2311.06928v3 Announce Type: cross Abstract: This paper explores the potential of the transformer models for learning Granger causality in networks with complex nonlinear dynamics at every node, as in neurobiological and biophysical networks. Our study primarily focuses on a proof-of-concept i...

#### Paradoxical increase of capacity due to spurious overlaps in attractor networks

Marco Benedetti, Nicolas Brunel, Enzo Marinari, Ulises Pereira Obilinovic

1 2025-10-21 min

143 words

ARXIV QBIO NC

Summary: arXiv:2510.17593v1 Announce Type: new Abstract: In Hopfield-type associative memory models, memories are stored in the connectivity matrix and can be retrieved subsequently thanks to the collective dynamics of the network. In these models, the retrieval of a particular memory can be hampered by ove...

https://arxiv.org/abs/2510.17593

## A theory for self-sustained balanced states in absence of strong external currents

David Angulo-Garcia, Alessandro





ARXIV QBIO NC

Summary: arXiv:2510.17492v1 Announce Type: new Abstract: Recurrent neural networks with balanced excitation and inhibition exhibit irregular asynchronous dynamics, which is fundamental for cortical computations. Classical balance mechanisms require strong external inputs to sustain finite firing rates, rais...

Read full article:

## A Minimal Quantitative Model of Perceptual Suppression and **Breakthrough in Visual Rivalry**

Christopher J. Whyte, Hugh R. Wilson, Shay Tobin, Brandon R. Munn, Shervin Safavi, Eli J. Muller, Jayson Jeganathan, Matt Davidson, James M. Shine, David Alais





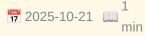
Summary: arXiv:2510.17154v1 Announce Type: new Abstract: When conflicting images are presented to either eye, binocular fusion is disrupted. Rather than experiencing a blend of both percepts, often only one eye's image is experienced, whilst the other is suppressed from awareness. Importantly, suppression i...



https://arxiv.org/abs/2510.17154

## Topological decoding of grid cell activity via path lifting to covering spaces

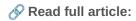






ARXIV QBIO NC

Summary: arXiv:2510.16216v1 Announce Type: new Abstract: High-dimensional neural activity often reside in a low-dimensional subspace, referred to as neural manifolds. Grid cells in the medial entorhinal cortex provide a periodic spatial code that are organized near a toroidal manifold, independent of the sp...



## 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

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## LCN2 promotes HEI-OC1 cells senescence via activating NFкВ signal pathway in presbycusis



**NEUROSCIENCE JOURNAL** 

**Summary:** Publication date: 19 November 2025<b>Source:</b> Neuroscience, Volume 588Author(s): Jingjing Wu, Xiaowen Liu, Daxue Zhu, Baicheng Xu, Yufen Guo

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## Decreased DNA methyltransferase 1 level in blood cells in Parkinson's disease

1 min

NEUROSCIENCE JOURNAL

**Summary:** Publication date: 19 November 2025<b>Source:</b><br/>Neuroscience, Volume 588Author(s): A.O. Lavrinova, E.M. Litusova, P.A.<br/>Gagarina, A.A. Dmitriev, N.V. Melnikova, E.A. Demidova, A.S. Zhuravlev, D.G.<br/>Kulabukhova, I.V. Miliukhina, A.A. Timofeeva, O.A. Berkovich, S.N. Pchelina, A.K. Emel...</br>

**⊗** Read full article:

https://www.sciencedirect.com/science/article/pii/S0306452225010176?dgcid=rss\_sd\_all

# A deep learning approach to artifact removal in Transcranial Electrical Stimulation: <em>From shallow methods to deep neural networks and state space models</em>

1 min



**NEUROSCIENCE JOURNAL** 

**Summary:** Publication date: 19 November 2025<b>Source:</b><br/>Neuroscience, Volume 588Author(s): Miguel Fernandez-de-Retana, Pablo<br/>Matanzas-de-Luis, Javier Peña, Aitor Almeida

https://www.sciencedirect.com/science/article/pii/S030645222500990X?dgcid=rss\_sd\_all

#### 4D trajectory prediction for inbound flights



1 177 2025-09-17 min words



FRONTIERS NEUROROBOTICS

Summary: IntroductionTo address the challenges of cumulative errors, insufficient modeling of complex spatiotemporal features, and limitations in computational efficiency and generalization ability in 4D trajectory prediction, this paper proposes a high-precision, robust prediction method. Methods A hybrid mod...

https://www.frontiersin.org/articles/10.3389/fnbot.2025.1625074

## **Correction: Pre-training, personalization, and self-calibration:** all a neural network-based myoelectric decoder needs







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...

https://www.frontiersin.org/articles/10.3389/fnbot.2025.1646336

## E-Sort: empowering end-to-end neural network for multichannel spike sorting with transfer learning and fast postprocessing

Yuntao Han and Shiwei Wang

1 272 min words

JOURNAL NEURAL ENGINEERING

Summary: Objective. Spike sorting, which involves detecting and attributing spikes to their putative neurons from extracellular recordings, is a common process in electrophysiology and brain-computer interface systems. Recent advances in large-scale neural recording technologies are challenging the conventio...

http://iopscience.iop.org/article/10.1088/1741-2552/ae0d33

## 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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https://pubmed.ncbi.nlm.nih.gov/38873838/?

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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

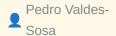
OOSTENVELD ROBERT

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...

#### 

https://pubmed.ncbi.nlm.nih.gov/38956071/?

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







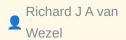
OOSTENVELD ROBERT

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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...

#### 

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

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...

#### 

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



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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https://pubmed.ncbi.nlm.nih.gov/40800964/?

#### Interventions to Reduce Incidence and Progression of Myopia in Children and Adults

Chi Pui
Pang
Pang
To 2025-10-18
Pang
To 76
Words
Low Vision

Summary: The alarming increase in childhood myopia has emerged as a significant public health concern. Due to its long-term consequences, there is also an expanding interest in adult-onset myopia. This review provides a comprehensive summary of interventions for slowing the onset and progression of myopia an...

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#### Lamina cribrosa shape in non-human primates is different from that of humans

Ian A

1 77 min words

LOW VISION

Summary: Non-human primates (NHPs) are a crucial model for studying glaucoma because of their similarities to humans in anatomy, physiology and pathology. Our goal in this study was to quantify in vivo NHP lamina cribrosa (LC) shapes at low, normal, and elevated intraocular pressures (IOPs), and compare them...

#### 

https://pubmed.ncbi.nlm.nih.gov/41109592/?

## Associations of adverse childhood experiences, inflammation, and cognition in older Black adults

Indira C
Turney

1 62 min words

LOW VISION

Summary: CONCLUSIONS: Distinct ACEs profiles were significantly associated with episodic memory and HPA dysregulation-related inflammation. The severe adversity, parental conflict, and low adversity groups showed no reliable predictions to cognition or cognitive status. These findings highlight the need for ...

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## Visual Assessment in Elderly Inpatients Following a Fall

1 65 min words



LOW VISION

Summary: Introduction Falls are a major cause of morbidity in older adults, with visual impairment recognized as a key modifiable risk factor. National guidelines recommend vision assessment following a fall; however, adherence remains suboptimal. This quality improvement project aimed to evaluate compliance...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41111684/?

## **Cerebral Venous Sinus Thrombosis Following Nitrous Oxide Abuse: A Clinical Reminder of a Growing Trend**







Summary: Cerebral venous sinus thrombosis (CVST) is a rare cause of stroke that may mimic other intracranial disorders. A 32-year-old male with bipolar disorder and prior venous thromboembolism presented with severe occipital headache, progressive blurred vision, and a brief sensory episode. He reported rece...

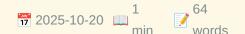
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# **Swept-Source Optical Coherence Tomography Angiography After Rhegmatogenous Retinal Detachment Treated With Different Approaches**











Summary: Purpose: To present long-term changes in swept-source optical coherence tomography angiography (SS-OCTA) after different approaches in rhegmatogenous retinal detachment. Methods: This was a retrospective study of patients after segmental buckling, circumferential buckling, primary vitrectomy, or com...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41112492/?

## Repeated low-intensity red light therapy for childhood myopia: a retrospective cohort study

Fengling 1 36
Xu min words

LOW VISION

Summary: CONCLUSION: RLRL therapy significantly slowed myopia progression and improved visual and accommodative function in children over 12 months, with no major safety concerns. These findings support RLRL as a promising, safe intervention for pediatric myopia control.

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## DWMamba: a structure-aware adaptive state space network for image quality improvement

Zhixiong

1 59 min words

**LOW VISION** 

Summary: Overcoming visual degradation in challenging imaging scenarios is essential for accurate scene understanding. Although deep learning methods have integrated various perceptual capabilities and achieved remarkable progress, their high computational cost limits practical deployment under resource-cons...

#### 

https://pubmed.ncbi.nlm.nih.gov/41113434/?

## Rare Presentations of Acute Angle Closure: A Case Series

Suneeta 1 22

Dubey min words

LOW VISION

Summary: CONCLUSION: Angle closure should be strongly suspected in patients with pain and sudden vision blurring, even if the initial IOP is low.

#### 

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# A Cross-sectional Study on Adherence to Topical Glaucoma **Medication and its Determinants among Patients Attending Glaucoma Clinics of a Tertiary Care Institute of Ahmedabad** City, Gujarat, India









Summary: CONCLUSION: Low adherence to medication was found among 82% of cases. Factors significantly associated with adherence were gender, education, duration of treatment, and having received prior instruction. Forgetfulness and the cost of treatment were the most common factors leading to low treatment ad...

#### 

https://pubmed.ncbi.nlm.nih.gov/41113788/?

## 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...

#### 

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

words

TACTILE ACUITY

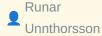
Summary: Touch plays a key role in our perception of our body and shapes our interactions with the world, from the objects we manipulate to the people we touch. While the tactile sensibility of the hand has been extensively characterized, much less is known about touch on other parts of the body. Despite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

#### Read full article:

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

## **Gradient Porous Flexible Pressure Sensors with the Relay** Effect for High-Accuracy Braille-to-Speech Recognition

Jianming 1 62
Xu min words

Summary: The development of highly sensitive, wide linear-range flexible pressure sensors is crucial for practical applications in human-computer interaction, physiological signal detection, and motion monitoring. However, traditional flexible pressure sensors often suffer from limited compressibility in the...

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# Individual and community level factors influencing modern contraceptive use among women of reproductive age in South Africa: a multilevel analysis







BRAILLE

Summary: CONCLUSION: Sensory disability status influenced women's contraceptive behaviour in South Africa. Current family planning interventions should target women with sensory disabilities by prioritising accessible communication methods (e.g., braille, sign language), disability awareness training for hea...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40855574/?

## **Explosion-powered eversible tactile displays**







BRAILLE

Summary: High-resolution electronic tactile displays stand to transform haptics for remote machine operation, virtual reality, and digital information access for people who are blind or visually impaired. Yet, increasing the resolution of these displays requires increasing the number of individually addressa...

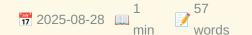
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# A Biomimetic Fiber-Entangled Permeable Electronic Skin for Strain-Insensitive and High-Resolution Tactile Sensing









BRAILLE

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...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40874468/?

## **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...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40889233/?

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









BRAILLE

**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



1 55 min words





BRAILLE

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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https://pubmed.ncbi.nlm.nih.gov/40937808/?

# 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.

#### 

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/?

# High-intensity transcranial alternating current stimulation combined with pharmacotherapy for adolescent major depressive disorder: a prospective case report study

**Summary:** CONCLUSIONS: The combination of HI-tACS and pharmacotherapy demonstrated potential early effects in this small cohort of adolescents with MDD, particularly during the initial phase of treatment. These preliminary findings warrant further investigation through large-scale randomized controlled trials...

#### **⊗** Read full article:

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## Non-invasive brain stimulation for suicidal ideation: a systematic review and metanalysis of the current literature









TDCS TACS TRNS

Summary: Data suggests that the available therapeutic tools are still insufficient to deal with suicidality. Non-Invasive Brain Stimulation techniques (NIBS) have entered the recognized guidelines for therapies in psychiatry due to the advantages related to safety and tolerability. The purpose of this review...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41103967/?

Active and sham transcranial direct-current stimulation (tDCS) plus core stability on the knee kinematic and performance of the lower limb of the soccer players with dynamic knee valgus; two armed randomized clinical trial







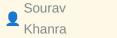
TDCS TACS TRNS

Summary: Dynamic knee valgus (DKV) is a prevalent risk factor for anterior cruciate ligament (ACL) injuries in soccer players, particularly during noncontact mechanisms. Transcranial direct-current stimulation (tDCS) and core stability exercises have shown promise in enhancing motor control and biomechanical...

#### 

https://pubmed.ncbi.nlm.nih.gov/41103970/?

# Effect of Precision-based HD-tDCS Over Conventional HDtDCS in Young-onset Mania: Protocol for an Active **Comparison fMRI and TMS Study**







TDCS TACS TRNS

Summary: CONCLUSIONS: This study protocol aims to explore the effect of novel precision-based HD-tDCS in young-onset mania compared to conventional HD-tDCS, thereby allowing for the examination of precision neuromodulation in young-onset mania.

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# **Progress in the combined application of Brain-Computer** Interface and non-invasive brain stimulation for post-stroke motor recovery









TDCS TACS TRNS

Summary: Stroke remains one of the leading causes of disability and death among adults globally. Both Brain-Computer Interface (BCI) and Non-invasive Brain Stimulation (NIBS) have shown significant potential in facilitating motor recovery in stroke patients. The combination of BCI and NIBS enhances brain fun...

#### 

https://pubmed.ncbi.nlm.nih.gov/41106071/?

## **Development and Validation of The Agonistic Continuum** Scale (TACS)

Raymond A
Knight

TDCS TACS TRNS
words

Summary: Sexual violence includes a wide variety of behaviors, ranging from harassment to coercion, to rape, to sexual homicide. Although the criminal justice system distinguishes these forms of sexual violence, several studies have suggested that they represent different degrees of severity of an underlying...

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# Military applications of transcranial direct current stimulation (tDCS) for enhanced multitasking performance

Nathan 1 62
Ward min words

TDCS TACS TRNS

Summary: Effective multitasking in high-stakes military environments is critical yet often compromised by cognitive overload, leading to operational errors. This scoping review explores the potential of transcranial direct current stimulation (tDCS) as a cognitive enhancement tool for improving multitasking ...

#### 

https://pubmed.ncbi.nlm.nih.gov/41110029/?

# Comparative efficacy of non-invasive brain stimulation for attention-deficit/hyperactivity disorder: a systematic review and network meta-analysis



Rui
Liu

1
2025-10-20
min

69
words

TDCS TACS TRNS



Summary: CONCLUSION: The dual-tDCS and a-tDCS may be considered among the preferred NIBS interventions for improving cognitive function in ADHD. Specifically, anodal tDCS over the left DLPFC plus cathodal tDCS over the right supraorbital area improved cognitive flexibility; while anodal tDCS over the left DL...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41111957/?

utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=143rKCPgMwbasrj66gQ1 r1ebioUg42SIGRyVKSoW4m6X-ecQ00&fc=None&ff=20251021002451&v=2.18.0.post9+e462414

# **Effect of preoperative transcranial direct current stimulation** on postoperative delirium in elderly patients following laparoscopic surgery



1 31 min words



TDCS TACS TRNS

Summary: CONCLUSION: A single session of preoperative tDCS can reduce the incidence of POD in elderly patients undergoing major laparoscopic surgery and can also reduce postoperative anxiety and depression in these patients.

#### 

https://pubmed.ncbi.nlm.nih.gov/41112611/?

# Noninvasive Neurostimulation to the Inferior Frontal Sulcus or Cerebellum Improves Accuracy But Not Timing in a **Speech Motor Learning Task**



Frank H
Guenther

Frank H

Guenther

1

1

64

TDCS TACS TRNS



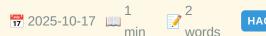
Summary: Speech motor learning depends on phonological working memory mechanisms in left posterior inferior frontal sulcus (LpIFS) and motor learning mechanisms in right cerebellum (RCbm). This study examines how transcranial direct current stimulation (tDCS), applied focally to these regions, affects speech...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41113138/?

utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=143rKCPgMwbasrj66gQ1 r1ebioUg42SIGRyVKSoW4m6X-ecQ00&fc=None&ff=20251021002451&v=2.18.0.post9+e462414

#### Results from blood test for 50 cancers



Summary: <a href="https://news.ycombinator.com/item?id=45623509">Comments</a>

https://www.bbc.com/news/articles/c205g21n1zzo

## Important Changes to the 2024 ERP Boot Camp







**ERP BOOT CAMP** 

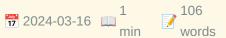
Summary: We are disappointed to announce that we will not be holding a regular 10-day ERP Boot Camp this summer.
class="">We have held Boot Camps nearly every summer since 2007, supported by a series of generous grants from NIMH that allowed us to provide scholarships for all attendees. Unf...



https://erpinfo.org/blog/2024/3/5/changes-to-the-2024-erp-boot-camp

## Registration is now full for the 2024 ERP Boot Camp







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**







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

Steve 1 30 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?

Steve 7 1547 Luck min words



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</em>. <a href="https://doi.org/10.1111/psyp.70038">https://doi.org/ 10.1111/psyp.70038</a> [<a href="https://doi.org/10.1101/2024.03.20...

Read full article:

https://erpinfo.org/blog/2025/3/20/new-paper-oddball

## 10-Day ERP Boot Camp to be held in Davis in Summer 2026

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 in Davis, California in the Summer of 2026. The specific dates will be announced around January 1, 2026, and the...

#### Read full article:

https://erpinfo.org/blog/2025/8/20/boot-camp-summer-2026

# **Education: Standards**







#### 

https://brain.ieee.org/publications/neuroethics-framework/education/standards-education/educationstandards/

#### **Education: Additional Resources**







BRAIN

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...

#### 

https://brain.ieee.org/publications/neuroethics-framework/education/educational-and-training-resourceseducation/education-additional-resources/

#### **Education: References**











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...

https://brain.ieee.org/braininsight-articles/ieee-brain-joins-the-american-brain-coalition-as-a-nonprofit-member/

## A data and task-constrained mechanistic model of the mouse outer retina shows robustness to contrast variations

Kadhim, K. L., Beck, J., Huang, Z., Macke, J. H., Rieke, F., Euler, T., Deistler, M., Berens,

1 317 min words

BIORXIV NEUROSCIENCE

Summary: Visual processing starts in the outer retina where photoreceptors transform light into electrochemical signals. These signals are modulated by inhibition from horizontal cells and sent to the inner retina via excitatory bipolar cells. The outer retina is thought to play an important role in contrast...

https://www.biorxiv.org/content/10.1101/2025.10.20.683356v1?rss=1

## An image-computable, spatio-chromatic RF model of the midget RGC mosaic across the retina

Cottaris, N. P., Wandell, B., Brainard, D.

H

1

194

words





**BIORXIV NEUROSCIENCE** 

Summary: Accurate image-computable models of retinal ganglion cell (RGC) mosaics across the retina do not currently exist. Here, we deploy a novel computational framework which synthesizes mosaics of linear spatio-chromatic receptive fields (RFs) of ON midget RGCs (mRGCs) by integrating published anatomical,...

https://www.biorxiv.org/content/10.1101/2025.10.20.683437v1?rss=1

## The Impact of Dance Movement Therapy on Subjective Well-Being and Quality of Life in Healthy Older Adults

1 2025-10-20 min Sebastiani, L., Daoudagh, S., Ignesti, G., Raglianti, M., Paradisi,

BIORXIV NEUROSCIENCE

Summary: Undertaking physical and social activities such as dance and music have positive effects on the mental well-being, cognitive and physical abilities of older people. Dance Movement Therapy (DMT) is a complementary practice that uses dance and movement to stimulate creativity, enabling individuals to ...

https://www.biorxiv.org/content/10.1101/2025.10.20.683423v1?rss=1

# Sensory Neural Noise as a Limiting Factor in Visual Working **Memory Precision in Neurotypicals and Schizophrenia**

Park, W. J., Ichinose, M., Hu, G., Woodman, G. F., Tadin, D., Park,

1 17 2025-10-20 min

**BIORXIV NEUROSCIENCE** 

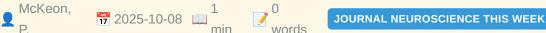
**Summary:** The neural mechanisms that determine the capacity limits of working memory (WM) are not well understood, with traditional views identifying prefrontal circuitry as the source. Sensory encoding, however, remains an underexplored explanation for WM limits even though noise in sensory processing necess...

**⊗** Read full article:

https://www.biorxiv.org/content/10.1101/2025.10.20.683426v1?rss=1

#### This Week in The Journal









http://www.jneurosci.org/cgi/content/short/45/41/etwij45412025?rss=1

## **UHGAN:** a dual-phase GAN with Hough-transform constraints for accurate farmland road extraction









FRONTIERS NEUROROBOTICS

Summary: IntroductionTraditional methods for farmland road extraction, such as U-Net, often struggle with complex noise and geometric features, leading to discontinuous extraction and insufficient sensitivity. To address these limitations, this study proposes a novel dual-phase generative adversarial network...

#### 

https://www.frontiersin.org/articles/10.3389/fnbot.2025.1691300

## 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/?

utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=1no\_pWrlHWS46ep2l9c VOQkZ1QsEMPlx7YY7aF6AfClqP-RYZd&fc=None&ff=20251020233942&v=2.18.0.post9+e462414

## **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...

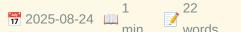
#### **⊗** Read full article:

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









**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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https://pubmed.ncbi.nlm.nih.gov/40924900/?

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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

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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https://pubmed.ncbi.nlm.nih.gov/40964349/?

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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...

#### Read full article:

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

# **Gradient Porous Flexible Pressure Sensors with the Relay** Effect for High-Accuracy Braille-to-Speech Recognition

Jianming 1 62
Xu min words

Summary: The development of highly sensitive, wide linear-range flexible pressure sensors is crucial for practical applications in human-computer interaction, physiological signal detection, and motion monitoring. However, traditional flexible pressure sensors often suffer from limited compressibility in the...

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https://pubmed.ncbi.nlm.nih.gov/40854103/?

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# Individual and community level factors influencing modern contraceptive use among women of reproductive age in South Africa: a multilevel analysis



1 46 min words



BRAILLE

Summary: CONCLUSION: Sensory disability status influenced women's contraceptive behaviour in South Africa. Current family planning interventions should target women with sensory disabilities by prioritising accessible communication methods (e.g., braille, sign language), disability awareness training for hea...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40855574/?

### **Explosion-powered eversible tactile displays**







BRAILLE

Summary: High-resolution electronic tactile displays stand to transform haptics for remote machine operation, virtual reality, and digital information access for people who are blind or visually impaired. Yet, increasing the resolution of these displays requires increasing the number of individually addressa...

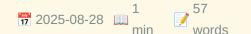
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# A Biomimetic Fiber-Entangled Permeable Electronic Skin for Strain-Insensitive and High-Resolution Tactile Sensing









BRAILLE

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...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40874468/?

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

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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...

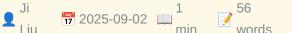
#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40889233/?

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

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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...

#### 

https://pubmed.ncbi.nlm.nih.gov/40937808/?

# 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.

#### 

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/?

# High-intensity transcranial alternating current stimulation combined with pharmacotherapy for adolescent major depressive disorder: a prospective case report study



**Summary:** CONCLUSIONS: The combination of HI-tACS and pharmacotherapy demonstrated potential early effects in this small cohort of adolescents with MDD, particularly during the initial phase of treatment. These preliminary findings warrant further investigation through large-scale randomized controlled trials...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41103740/?

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# Non-invasive brain stimulation for suicidal ideation: a systematic review and metanalysis of the current literature









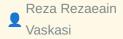
TDCS TACS TRNS

Summary: Data suggests that the available therapeutic tools are still insufficient to deal with suicidality. Non-Invasive Brain Stimulation techniques (NIBS) have entered the recognized guidelines for therapies in psychiatry due to the advantages related to safety and tolerability. The purpose of this review...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41103967/?

Active and sham transcranial direct-current stimulation (tDCS) plus core stability on the knee kinematic and performance of the lower limb of the soccer players with dynamic knee valgus; two armed randomized clinical trial







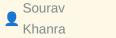
TDCS TACS TRNS

Summary: Dynamic knee valgus (DKV) is a prevalent risk factor for anterior cruciate ligament (ACL) injuries in soccer players, particularly during noncontact mechanisms. Transcranial direct-current stimulation (tDCS) and core stability exercises have shown promise in enhancing motor control and biomechanical...

#### 

https://pubmed.ncbi.nlm.nih.gov/41103970/?

# Effect of Precision-based HD-tDCS Over Conventional HDtDCS in Young-onset Mania: Protocol for an Active **Comparison fMRI and TMS Study**







TDCS TACS TRNS

Summary: CONCLUSIONS: This study protocol aims to explore the effect of novel precision-based HD-tDCS in young-onset mania compared to conventional HD-tDCS, thereby allowing for the examination of precision neuromodulation in young-onset mania.

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# **Progress in the combined application of Brain-Computer** Interface and non-invasive brain stimulation for post-stroke motor recovery









TDCS TACS TRNS

Summary: Stroke remains one of the leading causes of disability and death among adults globally. Both Brain-Computer Interface (BCI) and Non-invasive Brain Stimulation (NIBS) have shown significant potential in facilitating motor recovery in stroke patients. The combination of BCI and NIBS enhances brain fun...

#### 

https://pubmed.ncbi.nlm.nih.gov/41106071/?

# **Development and Validation of The Agonistic Continuum** Scale (TACS)

Raymond A
Knight

TDCS TACS TRNS
words

Summary: Sexual violence includes a wide variety of behaviors, ranging from harassment to coercion, to rape, to sexual homicide. Although the criminal justice system distinguishes these forms of sexual violence, several studies have suggested that they represent different degrees of severity of an underlying...

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https://pubmed.ncbi.nlm.nih.gov/41108027/?

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# Military applications of transcranial direct current stimulation (tDCS) for enhanced multitasking performance

Nathan 1 62
Ward min words

TDCS TACS TRNS

Summary: Effective multitasking in high-stakes military environments is critical yet often compromised by cognitive overload, leading to operational errors. This scoping review explores the potential of transcranial direct current stimulation (tDCS) as a cognitive enhancement tool for improving multitasking ...

#### 

https://pubmed.ncbi.nlm.nih.gov/41110029/?

# Comparative efficacy of non-invasive brain stimulation for attention-deficit/hyperactivity disorder: a systematic review and network meta-analysis



Rui
Liu

1
2025-10-20
min

69
words

TDCS TACS TRNS



Summary: CONCLUSION: The dual-tDCS and a-tDCS may be considered among the preferred NIBS interventions for improving cognitive function in ADHD. Specifically, anodal tDCS over the left DLPFC plus cathodal tDCS over the right supraorbital area improved cognitive flexibility; while anodal tDCS over the left DL...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41111957/?

utm\_source=BucketBot&utm\_medium=rss&utm\_campaign=None&utm\_content=143rKCPgMwbasrj66gQ1 r1ebioUg42SIGRyVKSoW4m6X-ecQ00&fc=None&ff=20251020233916&v=2.18.0.post9+e462414

# **Effect of preoperative transcranial direct current stimulation** on postoperative delirium in elderly patients following laparoscopic surgery



1 31 min words

TDCS TACS TRNS

Summary: CONCLUSION: A single session of preoperative tDCS can reduce the incidence of POD in elderly patients undergoing major laparoscopic surgery and can also reduce postoperative anxiety and depression in these patients.

#### 

https://pubmed.ncbi.nlm.nih.gov/41112611/?

# Noninvasive Neurostimulation to the Inferior Frontal Sulcus or Cerebellum Improves Accuracy But Not Timing in a **Speech Motor Learning Task**

1 2025-10-20 min 64 TDCS TACS TRNS

**Summary:** Speech motor learning depends on phonological working memory mechanisms in left posterior inferior frontal sulcus (LpIFS) and motor learning mechanisms in right cerebellum (RCbm). This study examines how transcranial direct current stimulation (tDCS), applied focally to these regions, affects speech...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41113138/?

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# Simple Prostatectomy is an Effective Option for BPH Patients With Hypocontractile Bladders

Smita
De 2025-10-17 min 35
words

BRAIN COMPUTER INTERFACE

Summary: CONCLUSIONS: This is one of the first studies assessing outcomes of SP in patients with hypocontractile bladders. SP is an effective surgical option for patients with impaired detrusor function including those who are catheter dependent.

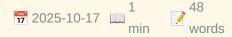
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# Electromagnetic Stimulation to Reduce Disability After Ischemic Stroke: The EMAGINE Randomized Clinical Trial





BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSION AND RELEVANCE: This trial found that ENTF therapy is safe. Although the difference between groups was not statistically significant, ENTF therapy may reduce global disability in patients with severe baseline disability after ischemic stroke. These results warrant confirmation in a higher ...

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+e462414

# A different bimodal: case series of patients with a cochlear implant and a contralateral bone conduction implant









BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSION: The synergy of electrical and vibratory auditory stimulation observed in this case series provided subjective functional benefits and measurable speech perception benefits for some patients, while others experienced minimal or no measurable benefit and ceased usage.

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# Progress in the combined application of Brain-Computer Interface and non-invasive brain stimulation for post-stroke motor recovery



**Summary:** Stroke remains one of the leading causes of disability and death among adults globally. Both Brain-Computer Interface (BCI) and Non-invasive Brain Stimulation (NIBS) have shown significant potential in facilitating motor recovery in stroke patients. The combination of BCI and NIBS enhances brain fun...

#### **⊗** Read full article:

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+e462414

# Modulation of brain oscillations by continuous theta burst stimulation in patients with insomnia









BRAIN COMPUTER INTERFACE

Summary: Continuous theta burst stimulation (cTBS) induces long-lasting depression of cortical excitability in motor cortex. In the present study, we explored the modulation of cTBS on resting state electroencephalogram (rsEEG) during wakefulness and subsequent sleep in patients with insomnia disorder. Forty...

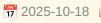
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# Establishing a comprehensive national auditory implant registry in Japan: Trends and demographics from the first two years (2023-2024)









BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: This is the first comprehensive report from the national registry in Japan that includes not only CIs but also AMEIs and BCIs. The registry demonstrated reliable data capture and highlighted important trends in patient demographics and surgical practices. Continued data collection will e...

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# Emoface: Al-assisted diagnostic model for differentiating major depressive disorder and bipolar disorder via facial biomarkers



**Summary:** Affective disorders, including Major Depressive Disorder (MDD) and Bipolar Disorder (BD), exhibit significant mood abnormalities, making rapid diagnosis essential for social stability and healthcare efficiency. Traditional diagnostic solutions, including medical history collection and psychological ...

#### 

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+e462414

### An Explainable 3D-Deep Learning Model for EEG Decoding in **Brain-Computer Interface Applications**

Nadia Mammone

1 2025-10-19 min 68 words

BRAIN COMPUTER INTERFACE

Summary: Decoding electroencephalographic (EEG) signals is of key importance in the development of brain-computer interface (BCI) systems. However, high inter-subject variability in EEG signals requires user-specific calibration, which can be time-consuming and limit the application of deep learning approach...

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# Detection and rehabilitation of age-related motor skills impairment: neurophysiological biomarkers and perspectives







BRAIN COMPUTER INTERFACE

Summary: Age-related decline in motor control, manifesting as impaired posture, gait, and slowed movement execution, significantly diminishes the quality of life in older adults. These functional deficits are associated with alterations in neurophysiological data, which are analyzed using advanced techniques...

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https://pubmed.ncbi.nlm.nih.gov/41110663/?

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# Neuroanatomy-Informed Brain-Machine Hybrid Intelligence for Robust Acoustic Target Detection

Luzheng 1 63
Bi 2025-10-20 min words

BRAIN COMPUTER INTERFACE

Summary: Sound target detection (STD) plays a critical role in modern acoustic sensing systems. However, existing automated STD methods show poor robustness and limited generalization, especially under low signal-to-noise ratio (SNR) conditions or when processing previously unencountered sound categories. To...

#### 

https://pubmed.ncbi.nlm.nih.gov/41112520/?

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# Alibaba Cloud says it cut Nvidia Al GPU use by 82% with new pooling system





Summary: <a href="https://news.ycombinator.com/item?id=45643163">Comments</a>

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

https://www.tomshardware.com/tech-industry/semiconductors/alibaba-says-new-pooling-system-cutnvidia-gpu-use-by-82-percent

# Production RAG: what I learned from processing 5M+ documents

1 2 2 HACKER NEWS min words

Summary: <a href="https://news.ycombinator.com/item?id=45645349">Comments</a>

https://blog.abdellatif.io/production-rag-processing-5m-documents

# Production RAG: what I learned from processing 5M+ documents

1 13 HACKER NEWS

**Summary:** Article URL: <a href="https://blog.abdellatif.io/production-rag-processing-5m-documents">https://blog.abdellatif.io/production-rag-processing-5m-documents</a> Comments URL: <a href="https://news.ycombinator.com/item?id=45645349">https://news.ycombinator.com/item?id=45645349</a> Poin...

https://blog.abdellatif.io/production-rag-processing-5m-documents

# 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



**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:

http://ieeexplore.ieee.org/document/10946856

# 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**

1 197 min words

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...

http://ieeexplore.ieee.org/document/10955171

### **Call for 2025 Society Awards Nominations**

Deidre

1 15 min words







**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:

https://www.embs.org/blog-post/welcoming-dr-ana-kyani-as-wibme-chair-ieee-embs/

### Ivan Lee, Appointed Editor-in-Chief of EMBC Proceedings







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

# Editorial: Emerging practices in therapeutic targeting of neurodegenerative diseases by modulating protein kinases





BRAIN RESEARCH

Summary: Publication date: 15 November 2025<b>Source:</b> Brain Research, Volume 1867Author(s): Md.Imtaiyaz Hassan, Belgin Sever



https://www.sciencedirect.com/science/article/pii/S0006899325005190?dgcid=rss\_sd\_all

# Altered social proximity in adult mice following prenatal stress Exposure: An exploratory link to cortical neurogenesis

BRAIN RESEARCH

**Summary:** Publication date: 1 December 2025<b>Source:</b> Brain Research, Volume 1868Author(s): Tsukasa Tomoe, Rei Sugiyama, Niina Kiriyama, Airi Otsuka, Munekazu Komada

Read full article:

https://www.sciencedirect.com/science/article/pii/S0006899325005463?dgcid=rss\_sd\_all

# Photobiomodulation in stroke prevention and treatment: neuroprotective mechanisms and therapeutic challenges



**BRAIN RESEARCH** 

**Summary:** Publication date: 1 December 2025<b>Source:</b> Brain Research, Volume 1868Author(s): Yuecheng Li, Lei Zhang, Jiaqiang Lin, Luodan Yang, Rui Duan

Read full article:

https://www.sciencedirect.com/science/article/pii/S000689932500544X?dgcid=rss sd all

# Chronic radon exposure is associated with developmental alterations to neural and behavioral indices of cognitive control

1 min



NEUROIMAGE

**Summary:** Publication date: 1 November 2025<b>Source:</b> NeuroImage, Volume 321Author(s): Haley R. Pulliam, Christine M. Embury, Maggie P. Rempe, Hannah J. Okelberry, Danielle L. Rice, Anna T. Coutant, Ryan Glesinger, Tony W. Wilson, Brittany K. Taylor

**⊗** Read full article:

https://www.sciencedirect.com/science/article/pii/S1053811925005270?dgcid=rss\_sd\_all

# Comparative evaluation of single- and multi-delay arterial spin labeling MRI in preterm neonates

1 min



NEUROIMAGE

**Summary:** Publication date: 1 November 2025<b>Source:</b> NeuroImage, Volume 321Author(s): Yeva Prysiazhniuk, Sasha Alexander, Rui Duarte Armindo, Elizabeth Tong, Kristen W Yeom, Jakub Otáhal, Martin Kynčl, Michael Moseley, Jan Petr, Moss Y Zhao, Gary K Steinberg

https://www.sciencedirect.com/science/article/pii/S1053811925005142?dgcid=rss\_sd\_all

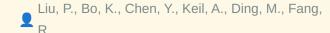
# Contentopic mapping in ventral and dorsal association cortex: The topographical organization of manipulable object information

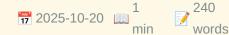
1 16 NEUROIMAGE words

**Summary:** Publication date: 1 November 2025<b>Source:</b> NeuroImage, Volume 321Author(s): J. Almeida, S. Kristensen, Z. Tal, A. Fracasso

https://www.sciencedirect.com/science/article/pii/S1053811925005178?dqcid=rss sd all

### **Biologically Inspired Deep Neural Network Models for Visual Emotion Processing**





**BIORXIV NEUROSCIENCE** 

**Summary:** The perception of opportunities and threats in complex visual scenes represents one of the main functions of the human visual system. The underlying neurophysiology is often studied by having observers view pictures varying in affective content. While deep neural networks (DNNs) have shown promise i...

**Read full article:** 

https://www.biorxiv.org/content/10.1101/2025.10.20.683439v1?rss=1

# **Next-Generation Neural Mass Models Reproduce Features of Speech Processing**

Shannon, A. J., Barton, D. A. W., Homer, M., Houghton, C. J. 250
J. min

BIORXIV NEUROSCIENCE

**Summary:** Segregation of speech into syllables is a key step in neural speech processing. It relies on the alignment of neural activity with the rhythmic structure of speech. Two neurological mechanisms have been suggested: phase-resetting of existing neural oscillations, or evoked responses to acoustic featu...

https://www.biorxiv.org/content/10.1101/2025.10.20.683434v1?rss=1

# Local translation controls early reactive changes in perisynaptic astrocyte processes at pre-symptomatic stages of Alzheimer s disease

Avila-Gutierrez, K., Carrillo de Sauvage, M. A., Oudart, M., Thompson, R., Alvear-Perez, R., Poulot-

■ Becq-Giraudon, Y., Kozlowski, E., Monnet, H., Mailly, P., Garcia, V., Jourdren, L., Bemelmans, A., Hirbec, H., Escartin, C., Cohen-Salmon, M.







**BIORXIV NEUROSCIENCE** 

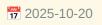
Summary: INTRODUCTION Understanding the progression of cellular dysfunction in preclinical Alzheimer s disease (AD) is essential for developing new therapeutic strategies. Early alterations in astrocyte perisynaptic functions have been observed in AD, yet the molecular underpinnings remain poorly characteriz...



https://www.biorxiv.org/content/10.1101/2025.10.20.683417v1?rss=1

# **Evaluating exon-skipping therapies targeting the central** nervous system in Duchenne muscular dystrophy using highresolution spatial transcriptomics

Mao, Q., Ahmadi, A., de Vries, S., Heezen, L. G. M., Vacca, O., Doisy, M., Aartsma-Rus, A., van Putten, M., Goyenvalle, A., Mahfouz, A., Spitali, P.







Summary: Duchenne muscular dystrophy (DMD) is marked by progressive muscle degeneration due to dystrophin deficiency. Despite cognitive impairments in up to one-third of patients, central nervous system (CNS)-targeted dystrophin restoration remains relatively underexplored compared to muscle-focused therapie...



https://www.biorxiv.org/content/10.1101/2025.10.20.683239v1?rss=1

### The gut microbiome promotes mitochondrial respiration in the brain of a Parkinson's disease mouse model







https://www.nature.com/articles/s41531-025-01142-5

# Goal-directed behavior and hippocampal activity predict reallife impact of drinking intentions in alcohol use disorder



Read full article:

https://www.nature.com/articles/s41398-025-03660-5

# Entorhinal grid-like codes for visual space during memory formation



https://www.nature.com/articles/s41467-025-64307-z

# Working memory load-dependent modulation of neural activity predicts response to cognitive behavioral therapy in obsessive-compulsive disorder



**⊗** Read full article:

https://www.nature.com/articles/s41398-025-03608-9

# Disconnecting part of the brain sends it into a deep sleep



#### 

https://www.nature.com/articles/d41586-025-03388-8

# "Recommendations for clinical study protocols for immune and inflammatory profiling in Parkinson's disease"



#### 

https://www.nature.com/articles/s41531-025-01146-1

## Creativity keeps the brain young



#### 

https://www.nature.com/articles/d41591-025-00063-3

# Single-unit activations confer inductive biases for emergent circuit solutions to cognitive tasks



**Read full article:** 

https://www.nature.com/articles/s42256-025-01127-2

# UAV-based intelligent traffic surveillance using recurrent neural networks and Swin transformer for dynamic environments



**Summary:** IntroductionUrban traffic congestion, environmental degradation, and road safety challenges necessitate intelligent aerial robotic systems capable of real-time adaptive decision-making. Unmanned Aerial Vehicles (UAVs), with their flexible deployment and high vantage point, offer a promising solution...

https://www.frontiersin.org/articles/10.3389/fnbot.2025.1681341

# 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

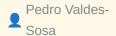
Summary: We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalitie...

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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...

#### 

https://pubmed.ncbi.nlm.nih.gov/39229492/?

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

Krzysztof J
Gorgolewski

1 2024-09-23 min 82
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 ...

#### 

https://pubmed.ncbi.nlm.nih.gov/39308505/?

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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...

#### 

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



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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https://pubmed.ncbi.nlm.nih.gov/40800964/?

# Interventions to Reduce Incidence and Progression of Myopia in Children and Adults

Chi Pui
Pang
Pang
To 2025-10-18 min
To 76
Words
Low Vision

Summary: The alarming increase in childhood myopia has emerged as a significant public health concern. Due to its long-term consequences, there is also an expanding interest in adult-onset myopia. This review provides a comprehensive summary of interventions for slowing the onset and progression of myopia an...

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1 77 min words

LOW VISION

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Turney

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1 65 min words



LOW VISION

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#### Read full article:

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Taranjit

1 68 min words

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https://pubmed.ncbi.nlm.nih.gov/41111878/?

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1 64 min words





LOW VISION

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#### Read full article:

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# Repeated low-intensity red light therapy for childhood myopia: a retrospective cohort study

Fengling 1 36
Xu min words

LOW VISION

Summary: CONCLUSION: RLRL therapy significantly slowed myopia progression and improved visual and accommodative function in children over 12 months, with no major safety concerns. These findings support RLRL as a promising, safe intervention for pediatric myopia control.

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1 59 min words

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Summary: Overcoming visual degradation in challenging imaging scenarios is essential for accurate scene understanding. Although deep learning methods have integrated various perceptual capabilities and achieved remarkable progress, their high computational cost limits practical deployment under resource-cons...

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https://pubmed.ncbi.nlm.nih.gov/41113434/?

# Rare Presentations of Acute Angle Closure: A Case Series

Suneeta 1 22

Dubey min words

LOW VISION

Summary: CONCLUSION: Angle closure should be strongly suspected in patients with pain and sudden vision blurring, even if the initial IOP is low.

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# A Cross-sectional Study on Adherence to Topical Glaucoma **Medication and its Determinants among Patients Attending Glaucoma Clinics of a Tertiary Care Institute of Ahmedabad** City, Gujarat, India









Summary: CONCLUSION: Low adherence to medication was found among 82% of cases. Factors significantly associated with adherence were gender, education, duration of treatment, and having received prior instruction. Forgetfulness and the cost of treatment were the most common factors leading to low treatment ad...

#### 

https://pubmed.ncbi.nlm.nih.gov/41113788/?

Diagnostic Efficacy of Olfactory Function Test Using Functional Near-Infrared Spectroscopy with Machine Learning in Healthy Adults: A Prospective Diagnostic-Accuracy (Feasibility/Validation) Study in Healthy Adults with Algorithm Development



**Summary:** Background/Objectives: The YSK olfactory function (YOF) test is a culturally adapted psychophysical tool that assesses threshold, discrimination, and identification. This study evaluated whether functional near-infrared spectroscopy (fNIRS) synchronized with routine YOF testing, combined with machin...

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# Enhanced Activation in the Dorsolateral Prefrontal Cortex and Inferior Parietal Lobule During Recovery from Body Dissatisfaction



**Summary:** Previous studies have examined the neural mechanisms of body dissatisfaction. This study aimed to investigate the neural basis of recovery from body dissatisfaction. Sixty-seven young women participated in this study, engaging in a fat talk-a conversation known to induce body dissatisfaction-followe...

#### **⊗** Read full article:

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# Immediate modulation effects of Tongue Tri-needle on brain functional networks in infratentorial stroke patients with dysphagia: a randomized controlled trial



Yan
Chen

1
2025-10-17
min

59
words





Summary: CONCLUSION: Infratentorial stroke patients with dysphagia exhibit disrupted functional connectivity within the fronto-temporo-sensorimotor network, which is associated with clinical impairment. Tongue Tri-needle multi-stage, selective reconfiguration of brain functional networks, particularly by mod...

#### **⊗** Read full article:

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# Riemannian geometry boosts functional near-infrared spectroscopy-based brain-state classification accuracy



1 37 min words





FNIRS

Summary: CONCLUSION: To our knowledge, we are the first to demonstrate that the proposed Riemannian-geometry-based classification approach is both powerful and viable for fNIRS data, substantially increasing the accuracy in binary and multi-class classification of brain activation patterns.

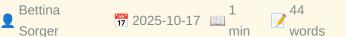
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# Sensitive and specific fNIRS-based approach for awareness detection in disorders of consciousness: proof of principle in healthy adults







Summary: CONCLUSION: This individualized diagnostic approach may have the potential to significantly enhance diagnostic accuracy for DoCs. It provides a noninvasive, efficient, and objective assessment, potentially reducing the rate of misdiagnosis rates. The practicality and minimal technical requirements o...

#### **⊗** Read full article:

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# **Neural and behavioral dynamics of dyadic rhythm** coordination across limb pairings











Summary: Interpersonal motor synchronization relies on precise neural coordination, yet its underlying brain mechanisms remain incompletely understood. Guided by mutual prediction theory, we investigated how temporal structure and effector-specific constraints shape dyadic coordination. Using functional near...

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### Motor imagery in individuals with congenital aphantasia

Magdalena Szubielska

1 71 min words

FNIRS

**Summary:** Individuals who experience aphantasia have an inability to create sensory mental images, what lead to a range of cognitive and behavioral differences compared to the general population. However, little is known about how this phenomenon affects the creation of motor imagery. Our study aims to check ...

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# **Interpersonal Neural Synchrony Across Levels of Interpersonal Closeness and Social Interactivity**

Esposito

1 63 min words

FNIRS

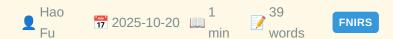
**Summary:** Interpersonal neural synchrony is a fundamental aspect of social interactions, offering insights into the neural mechanisms underlying human connection and developmental outcomes. So far, hyperscanning studies have examined synchrony across different dyads and tasks, leading to inconsistencies in ex...

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# Influence of Exercise Prescription on the Recovery of Cognitive Function In College Students With Mild-to-Moderate Depression



**Summary:** CONCLUSION: Receiving exercise prescription intervention can effectively reduce the severity of depressive symptoms, enhance the recovery of brain cognitive function, and improve the neurosecretory system function recovery and the expressions of neurotrophic factors in college students with mild-to-...

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# Street dancing enhances cognitive reserve in young females: an fNIRS study



**Summary:** CONCLUSION: The 18-week street dance intervention effectively improved working memory, inhibitory control, and cognitive flexibility, contributing to enhanced cognitive reserve. As a physical activity combining rhythm and coordination, street dance offers a promising early intervention strategy for ...

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# **Monthly Updates [Oct]**







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/oct-2025

# Wikipedia says traffic is falling due to AI search summaries and social video



gmays 7 2025-10-21 min 13 words



HACKER NEWS

**Summary:** Article URL: <a href="https://techcrunch.com/2025/10/18/wikipedia-saystraffic-is-falling-due-to-ai-search-summaries-and-social-video/">https://techcrunch.com/ 2025/10/18/wikipedia-says-traffic-is-falling-due-to-ai-search-summaries-and-social-video/</ a> Comments URL: <a href="https://news.y...



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# Argentine peso weakens to fresh low despite US interventions

**Summary:** Article URL: <a href="https://www.ft.com/content/815ef487-0d0e-430c-b140-9bc39dbd1a53">https://www.ft.com/content/815ef487-0d0e-430c-b140-9bc39dbd1a53</a> Comments URL: <a href="https://news.ycombinator.com/item?id=45651516">https://news.ycombinator.com/item?id=45651516</a> Points: ...

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# Neural correlates of inhibitory control during a simple food go/no-go task in adolescents varying in familial obesity risk

1 min 28 NEUROIMAGE

**Summary:** Publication date: 1 November 2025<b>Source:</b> NeuroImage, Volume 321Author(s): SA Duck, L Chen, A Papantoni, L Benson, G Thapaliya, E Jansen, MB Nebel, SH Mostofsky, KS Rosch, S Carnell

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# Crossing the scales: Single-neuron recruitment and continuous cortical propagation of slow wave events revealed by integrative opto-magnetic imaging

1 22 words

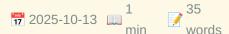
NEUROIMAGE

**Summary:** Publication date: 1 November 2025<b>Source:</b> NeuroImage, Volume 321Author(s): Dirk Cleppien, Miriam Schwalm, Hendrik Backhaus, Ting Fu, Felipe Aedo-Jury, Gaby Schneider, Albrecht Stroh

https://www.sciencedirect.com/science/article/pii/S1053811925005166?dgcid=rss\_sd\_all

# Psychedelic 5-HT<sub>2A</sub> receptor agonism alters neurovascular coupling and differentially affects neuronal and hemodynamic measures of brain function







**NATURE NEUROSCIENCE** 

Summary: Nature Neuroscience, Published online: 13 October 2025; <a href="https://"><a href="https://"></a> www.nature.com/articles/s41593-025-02069-z">doi:10.1038/s41593-025-02069-z</a></ p>Padawer-Curry et al. show that the hallucinogenic 5-HT2A receptor agonist DOI alters neurovascular coupling in mice, with implications for the...

https://www.nature.com/articles/s41593-025-02069-z

### This Week in The Journal









http://www.jneurosci.org/cgi/content/short/45/42/etwij45422025?rss=1

# **Network Activity Shapes Inhibitory Synaptic Development in** the Mouse Hippocampus







JOURNAL NEUROSCIENCE CURRENT

Summary: The proper development of excitatory/inhibitory (E/I) balance is critical for brain function, as any imbalance has been associated with myriad neuropsychiatric disorders. How this balance evolves during synaptic development remains unclear. To address this question, we examine how manipulations o...

http://www.jneurosci.org/cgi/content/short/45/42/e1182242025?rss=1

# Stereoelectroencephalography Reveals Neural Signatures of Multisensory Integration in the Human Superior Temporal Sulcus during Audiovisual Speech Perception

Zhang, Y., Magnotti, J. F., Zhang, X., Wang, Z., Yu, Y., Davis, K. A., Sheth, S. A., Isaac Chen, H., Yoshor, D., Beauchamp, M. S.

1 2025-10-15 min 244 JOURNAL NEUROSCIENCE CURRENT words

**Summary:** Human speech perception is multisensory, integrating auditory information from the talker's voice with visual information from the talker's face. BOLD fMRI studies have implicated the superior temporal gyrus (STG) in processing auditory speech and the superior temporal sulcus (STS) in integrating...

**⊗** Read full article:

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# Competition between Tool and Hand Motion Impairs Movement Planning in Limb Apraxia



JOURNAL NEUROSCIENCE CURRENT

**Summary:** Tool use is a complex motor planning problem. Prior research suggests that planning to use tools involves resolving competition between different tool-related action representations. We therefore reasoned that competition may also be exacerbated with tools for which the motions of the tool and th...

Read full article:

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# Largely Intact But Less Reliable and Distributed Neural Representations of Subjective Value in Human Opioid Addiction

LoFaro, F. M., Gueguen, M. C. M., Kapoor, A., Alvarez, E. E., Bonagura, D., Konova, A. B.



**Summary:** Addiction, particularly opioid use disorder (OUD), is often characterized by heightened propensity for risk-taking. While tolerance for risk and uncertainty varies across individuals, the elevated risk-taking in people with OUD is assumed to stem from altered cognitive decision-making processes b...

http://www.jneurosci.org/cgi/content/short/45/42/e0679252025?rss=1

# Metallothionein III Mediates Ca2+-Dependent Zn2+ Spikes to Inhibit Dendritic Arborization

Salvagio, L., Zhang, C., Rue, B. E., Doris, N., Koehring, C., Tyler, I., Vargas, R. S., Oh, W. C., Qin, Y.

1 2025-10-15 min 244 JOURNAL NEUROSCIENCE CURRENT words

**Summary:** Zinc is crucial for neuron function, but whether and how labile zinc ion (Zn<sup>2+</sup>) acts as an intracellular signaling molecule remains unclear. In this work, we investigate the relationship between Ca<sup>2+</sup> and Zn<sup>2+</sup> dynamics using fluorescence imaging. Our findings revea...

http://www.jneurosci.org/cgi/content/short/45/42/e0627252025?rss=1

# Marmoset Anterior Cingulate Area 32 Neurons Exhibit Responses to Presented and Produced Calls during Naturalistic Vocal Communication

Johnston, K. D., Gilliland, R. E., Wong, R. K., Everling,

1 154 min words

JOURNAL NEUROSCIENCE CURRENT

**Summary:** Vocal communication is a complex social behavior that entails the integration of auditory perception and vocal production. Both anatomical and functional evidence have implicated the anterior cingulate cortex (ACC), including area 32, in these processes, but the dynamics of neural responses in ar...

Read full article:

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### This Week in The Journal





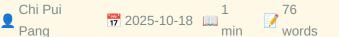




http://www.jneurosci.org/cgi/content/short/45/42/etwij45422025?rss=1

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LOW VISION

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#### **⊗** Read full article:

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Sigal

lan A 77 Low Vision min words

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Indira C

1 2025-10-19 min 62 words

**LOW VISION** 

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1 65 min words

LOW VISION

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1 68 min words



LOW VISION

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https://pubmed.ncbi.nlm.nih.gov/41111878/?

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● Jerzy 1 64 Nawrocki min words



LOW VISION

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# Repeated low-intensity red light therapy for childhood myopia: a retrospective cohort study



1 36 min words





LOW VISION

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#### Read full article:

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Zhixiong 1 59
Huang min words

LOW VISION

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# **Rare Presentations of Acute Angle Closure: A Case Series**

Dubev

1 22 min 222 words

LOW VISION

Summary: CONCLUSION: Angle closure should be strongly suspected in patients with pain and sudden vision blurring, even if the initial IOP is low.

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https://pubmed.ncbi.nlm.nih.gov/41113686/?

A Cross-sectional Study on Adherence to Topical Glaucoma Medication and its Determinants among Patients Attending Glaucoma Clinics of a Tertiary Care Institute of Ahmedabad City, Gujarat, India



**Summary:** CONCLUSION: Low adherence to medication was found among 82% of cases. Factors significantly associated with adherence were gender, education, duration of treatment, and having received prior instruction. Forgetfulness and the cost of treatment were the most common factors leading to low treatment ad...

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# Non-invasive brain stimulation for suicidal ideation: a systematic review and metanalysis of the current literature









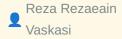
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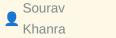
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TDCS TACS TRNS

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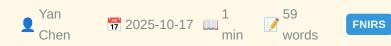
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# Riemannian geometry boosts functional near-infrared spectroscopy-based brain-state classification accuracy



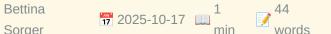
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https://pubmed.ncbi.nlm.nih.gov/41104354/?

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Summary: CONCLUSION: This individualized diagnostic approach may have the potential to significantly enhance diagnostic accuracy for DoCs. It provides a noninvasive, efficient, and objective assessment, potentially reducing the rate of misdiagnosis rates. The practicality and minimal technical requirements o...

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# **Neural and behavioral dynamics of dyadic rhythm** coordination across limb pairings











Summary: Interpersonal motor synchronization relies on precise neural coordination, yet its underlying brain mechanisms remain incompletely understood. Guided by mutual prediction theory, we investigated how temporal structure and effector-specific constraints shape dyadic coordination. Using functional near...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41106782/?

### Motor imagery in individuals with congenital aphantasia

Magdalena Szubielska

1 71 min words

FNIRS

**Summary:** Individuals who experience aphantasia have an inability to create sensory mental images, what lead to a range of cognitive and behavioral differences compared to the general population. However, little is known about how this phenomenon affects the creation of motor imagery. Our study aims to check ...

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## **Interpersonal Neural Synchrony Across Levels of Interpersonal Closeness and Social Interactivity**



1 63 min words

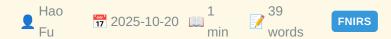
FNIRS

**Summary:** Interpersonal neural synchrony is a fundamental aspect of social interactions, offering insights into the neural mechanisms underlying human connection and developmental outcomes. So far, hyperscanning studies have examined synchrony across different dyads and tasks, leading to inconsistencies in ex...

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https://pubmed.ncbi.nlm.nih.gov/41110650/?

# Influence of Exercise Prescription on the Recovery of Cognitive Function In College Students With Mild-to-Moderate Depression



**Summary:** CONCLUSION: Receiving exercise prescription intervention can effectively reduce the severity of depressive symptoms, enhance the recovery of brain cognitive function, and improve the neurosecretory system function recovery and the expressions of neurotrophic factors in college students with mild-to-...

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# Street dancing enhances cognitive reserve in young females: an fNIRS study



**Summary:** CONCLUSION: The 18-week street dance intervention effectively improved working memory, inhibitory control, and cognitive flexibility, contributing to enhanced cognitive reserve. As a physical activity combining rhythm and coordination, street dance offers a promising early intervention strategy for ...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41113441/?

# Building an open-source observability tool for multi-agent systems - looking for feedback

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 \text{Standard\_Career\_8603} \end{align\*} \quad \text{2025-10-20} \quad \text{\text{min}} \quad \text{words} \quad \text{REDDIT PYTHON} \end{align\*}

**Summary:** <!-- SC\_OFF --><div class="md">I've been building multi-agent workflows with LangChain and got tired of debugging them with scattered console.log statements, so I built an open-source observability tool. <strong>What it does</strong>:<br/>Tracks information flow between agents<br/>br /> -...

https://www.reddit.com/r/Python/comments/1obprx2/building\_an\_opensource\_observability\_tool\_for/

# i built a tool that runs your python function on 10k vms in parallel with one line of code.



**Summary:** <!-- SC\_OFF --><div class="md"><h1>What My Project Does</h1> I've always struggled to get data scientists and analysts to scale their code in the cloud. Almost every time, they'd have to hand it over to DevOps, the backlog would grow, and overall throughput would tank. So I built <strong>B...

**Read full article:** 

https://www.reddit.com/r/Python/comments/1obpjnf/i built a tool that runs your python function on/

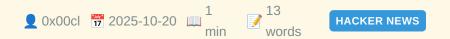
### Why UUIDs won't protect your secrets

9 8organicbits 7 2025-10-20 min 13 words

**Summary:** Article URL: <a href="https://alexsci.com/blog/uuids-and-idor/">https://alexsci.com/blog/uuids-and-idor/</a> Comments URL: <a href="https://news.ycombinator.com/item?id=45650617">https://news.ycombinator.com/item?id=45650617">https://news.ycombinator.com/item?id=45650617</a> Points: 11 # Comments: 2

https://alexsci.com/blog/uuids-and-idor/

### **Old Computer Challenge – Modern Web for the ZX Spectrum**



**Summary:** Article URL: <a href="https://0x00.cl/blog/2025/occ-2025/">https://0x00.cl/blog/2025/occ-2025/">https://0x00.cl/blog/2025/occ-2025/</a> Comments URL: <a href="https://news.ycombinator.com/item?id=45650792">https://news.ycombinator.com/item?id=45650792</a> Points: 5 # Comments: 0

https://0x00.cl/blog/2025/occ-2025/

## How the Ventromedial Prefrontal Cortex (VMPFC) Facilitates **Welfare Maximization in Social Contexts**









http://www.jneurosci.org/cgi/content/short/45/42/e0221252025?rss=1

# Prenatal Downregulation of CB1 Cannabinoid Receptors in the Mouse Prefrontal Cortex Disrupts Cortical Lamination and **Induces a Transcriptional Signature Associated with Social** Interaction Deficits

Simon-Sanchez, S., den Boon, F., Garcia-Rincon, D., Skrempou, G., Paraiso-Luna, J., Aguilera, A., Nieto, M., Werkman, T. R., Guzman, M., Chameau, P., Galve-Roperh, I.







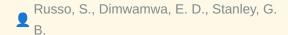
JOURNAL NEUROSCIENCE CURRENT

Summary: Endocannabinoid signaling exerts a neurodevelopmental regulatory role via CB<sub>1</sub> cannabinoid receptors (CB<sub>1</sub>Rs), which control pyramidal neuron differentiation, migration, and axonal guidance. Here, we investigated the longlasting consequences of transient prenatal CB<sub>1</su...



http://www.jneurosci.org/cgi/content/short/45/42/e0120252025?rss=1

# **Layer 6 Corticothalamic Neurons Induce High Gamma Oscillations Through Cortico-cortical and Cortico-thalamo**cortical Pathways





JOURNAL NEUROSCIENCE CURRENT

Summary: Layer 6 corticothalamic (L6CT) neurons project to both cortex and thalamus, inducing multiple effects including the modulation of cortical and thalamic firing, and the emergence of high gamma oscillations in the cortical local field potential (LFP). We hypothesize that the high gamma oscillations...

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# Transpupillary in vivo two-photon imaging reveals enhanced surveillance of retinal microglia in diabetic mice

Noriyuki SotaniSentaro KusuharaRyuto NishishoHiroto KunoHidenori ShimaKoichiro HaruwakaYuka MoriMaya KishiTomoyuki FuruyashikiKenta KobayashiHiroaki WakeToru TakumiMakoto NakamuraYoshihisa TachibanaaDepartment of Physiology and Cell Biology, Kobe University Graduate School of Medicine, Kobe 650-0017, JapanbDivision of Ophthalmology, Department of Surgery, Kobe University Graduate School of Medicine, Kobe 650-0017, JapancCenter for Neuroimmunology and Glial Biology, Institute of Molecular Medicine, University of Texas Health Science Center, Houston, TX 77030dDivision of Pharmacology, Kobe University Graduate School of Medicine, Kobe 650-0017, JapaneSection of Viral Vector Development, National Institute for Physiological Sciences, Okazaki 444-8585, JapanfDepartment of Anatomy and Molecular Cell Biology, Nagoya University Graduate School of Medicine, Nagoya 466-8550, Japan



**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 41, October 2025. <br/>
SignificanceNumerous studies have developed imaging techniques for visualizing diverse cell types in the retina. However, these techniques often face challenges such as low resolution and the need for technica...



https://www.pnas.org/doi/abs/10.1073/pnas.2426241122?af=R

## Generation of synthetic TSPO PET maps from structural MRI images

Marco L.

Loggia

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250

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

# **Editorial: Advancements in smart diagnostics for** understanding neurological behaviors and biosensing applications



Zohaib
Mushtaq

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words



FRONTIERS COMPUTATIONAL NEUROSCIENCE

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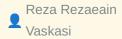
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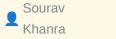


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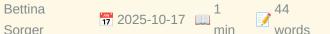
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https://pubmed.ncbi.nlm.nih.gov/41104354/?

# Sensitive and specific fNIRS-based approach for awareness detection in disorders of consciousness: proof of principle in healthy adults







Summary: CONCLUSION: This individualized diagnostic approach may have the potential to significantly enhance diagnostic accuracy for DoCs. It provides a noninvasive, efficient, and objective assessment, potentially reducing the rate of misdiagnosis rates. The practicality and minimal technical requirements o...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41104355/?

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# **Neural and behavioral dynamics of dyadic rhythm** coordination across limb pairings











Summary: Interpersonal motor synchronization relies on precise neural coordination, yet its underlying brain mechanisms remain incompletely understood. Guided by mutual prediction theory, we investigated how temporal structure and effector-specific constraints shape dyadic coordination. Using functional near...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41106782/?

### Motor imagery in individuals with congenital aphantasia

Magdalena Szubielska

1 71 min words

FNIRS

**Summary:** Individuals who experience aphantasia have an inability to create sensory mental images, what lead to a range of cognitive and behavioral differences compared to the general population. However, little is known about how this phenomenon affects the creation of motor imagery. Our study aims to check ...

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# **Interpersonal Neural Synchrony Across Levels of Interpersonal Closeness and Social Interactivity**



1 63 min words





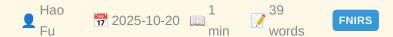


**Summary:** Interpersonal neural synchrony is a fundamental aspect of social interactions, offering insights into the neural mechanisms underlying human connection and developmental outcomes. So far, hyperscanning studies have examined synchrony across different dyads and tasks, leading to inconsistencies in ex...

#### 

https://pubmed.ncbi.nlm.nih.gov/41110650/?

# Influence of Exercise Prescription on the Recovery of Cognitive Function In College Students With Mild-to-Moderate Depression



**Summary:** CONCLUSION: Receiving exercise prescription intervention can effectively reduce the severity of depressive symptoms, enhance the recovery of brain cognitive function, and improve the neurosecretory system function recovery and the expressions of neurotrophic factors in college students with mild-to-...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41113420/?

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# Street dancing enhances cognitive reserve in young females: an fNIRS study



**Summary:** CONCLUSION: The 18-week street dance intervention effectively improved working memory, inhibitory control, and cognitive flexibility, contributing to enhanced cognitive reserve. As a physical activity combining rhythm and coordination, street dance offers a promising early intervention strategy for ...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41113441/?

## Simple Prostatectomy is an Effective Option for BPH Patients With Hypocontractile Bladders









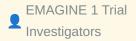
BRAIN COMPUTER INTERFACE

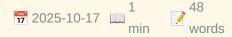
Summary: CONCLUSIONS: This is one of the first studies assessing outcomes of SP in patients with hypocontractile bladders. SP is an effective surgical option for patients with impaired detrusor function including those who are catheter dependent.

### 

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# Electromagnetic Stimulation to Reduce Disability After Ischemic Stroke: The EMAGINE Randomized Clinical Trial





BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSION AND RELEVANCE: This trial found that ENTF therapy is safe. Although the difference between groups was not statistically significant, ENTF therapy may reduce global disability in patients with severe baseline disability after ischemic stroke. These results warrant confirmation in a higher ...

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## A different bimodal: case series of patients with a cochlear implant and a contralateral bone conduction implant









BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSION: The synergy of electrical and vibratory auditory stimulation observed in this case series provided subjective functional benefits and measurable speech perception benefits for some patients, while others experienced minimal or no measurable benefit and ceased usage.

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# Progress in the combined application of Brain-Computer Interface and non-invasive brain stimulation for post-stroke motor recovery



**Summary:** Stroke remains one of the leading causes of disability and death among adults globally. Both Brain-Computer Interface (BCI) and Non-invasive Brain Stimulation (NIBS) have shown significant potential in facilitating motor recovery in stroke patients. The combination of BCI and NIBS enhances brain fun...

#### **⊗** Read full article:

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+e462414

## Modulation of brain oscillations by continuous theta burst stimulation in patients with insomnia









BRAIN COMPUTER INTERFACE

Summary: Continuous theta burst stimulation (cTBS) induces long-lasting depression of cortical excitability in motor cortex. In the present study, we explored the modulation of cTBS on resting state electroencephalogram (rsEEG) during wakefulness and subsequent sleep in patients with insomnia disorder. Forty...

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# Establishing a comprehensive national auditory implant registry in Japan: Trends and demographics from the first two years (2023-2024)







BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: This is the first comprehensive report from the national registry in Japan that includes not only CIs but also AMEIs and BCIs. The registry demonstrated reliable data capture and highlighted important trends in patient demographics and surgical practices. Continued data collection will e...

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# Emoface: Al-assisted diagnostic model for differentiating major depressive disorder and bipolar disorder via facial biomarkers



**Summary:** Affective disorders, including Major Depressive Disorder (MDD) and Bipolar Disorder (BD), exhibit significant mood abnormalities, making rapid diagnosis essential for social stability and healthcare efficiency. Traditional diagnostic solutions, including medical history collection and psychological ...

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+e462414

## An Explainable 3D-Deep Learning Model for EEG Decoding in **Brain-Computer Interface Applications**

Nadia Mammone

1 2025-10-19 min 68 words

BRAIN COMPUTER INTERFACE

Summary: Decoding electroencephalographic (EEG) signals is of key importance in the development of brain-computer interface (BCI) systems. However, high inter-subject variability in EEG signals requires user-specific calibration, which can be time-consuming and limit the application of deep learning approach...

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# Detection and rehabilitation of age-related motor skills impairment: neurophysiological biomarkers and perspectives







BRAIN COMPUTER INTERFACE

Summary: Age-related decline in motor control, manifesting as impaired posture, gait, and slowed movement execution, significantly diminishes the quality of life in older adults. These functional deficits are associated with alterations in neurophysiological data, which are analyzed using advanced techniques...

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## **Neuroanatomy-Informed Brain-Machine Hybrid Intelligence** for Robust Acoustic Target Detection

Luzheng 1 63
Bi 2025-10-20 min words

BRAIN COMPUTER INTERFACE

Summary: Sound target detection (STD) plays a critical role in modern acoustic sensing systems. However, existing automated STD methods show poor robustness and limited generalization, especially under low signal-to-noise ratio (SNR) conditions or when processing previously unencountered sound categories. To...

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https://pubmed.ncbi.nlm.nih.gov/41112520/?

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

1 245 min 245



DREAMING

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...

**⊗** Read full article:

http://doi.org/10.1037/drm0000297

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

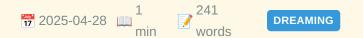


**Summary:** This study aims to develop the Dream Incubation Attitude Scale for assessing attitudes toward dream incubation. The Dream Incubation Attitude Scale underwent psychometric testing based on responses drawn from 109 Hong Kong participants. This resulted in a three-factor structure comprising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



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...

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

http://doi.org/10.1037/drm0000308

### Nightmare disorder in women.





DREAMING

**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.**





DREAMING

**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

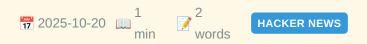
## BERT is just a single text diffusion step



Summary: <a href="https://news.ycombinator.com/item?id=45644328">Comments</a>

https://nathan.rs/posts/roberta-diffusion/

# You don't need Kafka: Building a message queue with Unix signals



Summary: <a href="https://news.ycombinator.com/item?id=45650178">Comments</a>

https://leandronsp.com/articles/you-dont-need-kafka-building-a-message-queue-with-only-two-unix-signals

# You don't need Kafka: Building a message queue with Unix signals

SchwKatze 7 2025-10-20 min 13 HACKER NEWS

**Summary:** Article URL: <a href="https://leandronsp.com/articles/you-dont-need-kafka-building-a-message-queue-with-only-two-unix-signals">https://leandronsp.com/articles/you-dont-need-kafka-building-a-message-queue-with-only-two-unix-signals</a> Comments URL: <a href="https://news.ycombinator.com/ite...">https://news.ycombinator.com/ite...

https://leandronsp.com/articles/you-dont-need-kafka-building-a-message-queue-with-only-two-unix-signals

# Effect of brief rest on hemodynamics and CSF oscillations across age



**Summary:** Publication date: 1 November 2025<b>Source:</b> NeuroImage, Volume 321Author(s): Vidhya V Nair, Adam M Wright, Tianyin Xu, Elodie Foster, Xiaopeng Zhou, Yunjie Tong, Qiuting Wen

https://www.sciencedirect.com/science/article/pii/S1053811925005348?dqcid=rss\_sd\_all

# Early wounds, delayed consequences: Brain-behavior modeling reveals neural pathways linking childhood trauma to procrastination





NEUROIMAGE

**Summary:** Publication date: 1 November 2025<b>Source:</b> NeuroImage, Volume 321Author(s): Luo Xu, Yao Yin, Xueke Wang, Ting Xu, Xi Zhang, Tingyong Feng

**⊗** Read full article:

https://www.sciencedirect.com/science/article/pii/S1053811925005324?dgcid=rss\_sd\_all

# The evolution of spatial patterns of brain activity during development and their role in the functional specialization of brain networks





NEUROIMAGE

**Summary:** Publication date: 1 November 2025<b>Source:</b> NeuroImage, Volume 321Author(s): Kuzma Strelnikov, Malik Berdier, Pierre Payoux, Pascal Barone, Chloe Farrer

**⊗** Read full article:

https://www.sciencedirect.com/science/article/pii/S1053811925005385?dgcid=rss\_sd\_all

## ERP-based interbrain causal model reveals closed-loop information interaction in interpersonal negotiations

1 min

NEUROIMAGE

**Summary:** Publication date: 1 November 2025<b>Source:</b> NeuroImage, Volume 321Author(s): Yuqin Li, Genon Sarah, Chunli Chen, Lin Jiang, Baodan Chen, Rihui Li, Zhen Liang, Jing Yu, Debo Dong, Fen Wan, Benjamin Becker, Dezhong Yao, Fali Li, Dandan Zhang, Peng Xu

#### 

https://www.sciencedirect.com/science/article/pii/S1053811925005440?dgcid=rss\_sd\_all

# Impact of high-frequency sampling rate and stimulation intensity on early TMS artifacts: considerations for immediate TMS-EEG responses

1 min



NEUROIMAGE

**Summary:** Publication date: 1 November 2025<b>Source:</b> NeuroImage, Volume 321Author(s): Antonietta Stango, Agnese Zazio, Guido Barchiesi, Natale Salvatore Bonfiglio, Marta Bortoletto

#### 

https://www.sciencedirect.com/science/article/pii/S1053811925005294?dqcid=rss\_sd\_all

## Ventral striatal astrocytes contribute to reinforcement learning

Pai, J., Sogukpinar, F., Ogasawara, K., Smith, G. J., Fiocchi, F. R., Dai, Y., Wu, Y., Frank, M. J., Ching, S., Lucantonio, F., Papouin, T., Pignatelli, M., Hiratani, N., Monosov, I. E.

1 142 min words

BIORXIV NEUROSCIENCE

**Summary:** Astrocytes influence synaptic plasticity and neuronal function through astrocytic calcium dynamics (ACD). However, astrocytes contribution to cognitive operations like reinforcement learning (RL) remains unclear. To examine this, we trained mice on a RL dependent probabilistic decision-making task. ...

https://www.biorxiv.org/content/10.1101/2025.10.20.683205v1?rss=1

## **Aberrant E-I Balance and Brain Criticality in Major Depressive Disorder**

Mitsuto, A., Bhardwaj, A., Parkes, L., Faruqi, F., Carpenter, L., Westbrook,

1 2025-10-20 min

242 words

BIORXIV NEUROSCIENCE

**Summary:** Brain criticality and complexity are increasingly recognized as promising biomarkers for psychiatric disorders. In Major Depressive Disorder (MDD), disordered neural dynamics have been reported, but their nature and consistency remain incompletely understood. Here, we study brain criticality, excita...

https://www.biorxiv.org/content/10.1101/2025.10.19.683280v1?rss=1

## RSA-TransUNet: a robust structure-adaptive TransUNet for enhanced road crack segmentation

Ruoli 1 234
Yang min words

FRONTIERS NEUROROBOTICS

Summary: With the advancement of deep learning, road crack segmentation has become increasingly crucial for intelligent transportation safety. Despite notable progress, existing methods still face challenges in capturing fine-grained textures in small crack regions, handling blurred edges and significant wid...

https://www.frontiersin.org/articles/10.3389/fnbot.2025.1633697

## Approaches for retraining sEMG classifiers for upper-limb prostheses

Benjamin 1 178
Metcalfe min 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

## DWMamba: a structure-aware adaptive state space network for image quality improvement

FRONTIERS NEUROROBOTICS

Summary: Overcoming visual degradation in challenging imaging scenarios is essential for accurate scene understanding. Although deep learning methods have integrated various perceptual capabilities and achieved remarkable progress, their high computational cost limits practical deployment under resource-cons...

https://www.frontiersin.org/articles/10.3389/fnbot.2025.1676787

## Balancing accuracy and efficiency: co-design of hybrid quantization and unified computing architecture for spiking neural networks

Liang 1 257 Chen min words



FRONTIERS NEUROSCIENCE

Summary: The deployment of Spiking Neural Networks (SNNs) on resource-constrained edge devices is hindered by a critical algorithm-hardware mismatch: a fundamental tradeoff between the accuracy degradation caused by aggressive quantization and the resource redundancy stemming from traditional decoupled hard...

Read full article:

https://www.frontiersin.org/articles/10.3389/fnins.2025.1665778

## A pipelined, resource-efficient convolutional neural network architecture for detecting and diagnosing Alzheimer's disease using brain sMRI



V. 1 2025-10-15 min 265 words



FRONTIERS NEUROSCIENCE

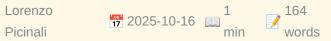
Summary: IntroductionAlzheimer's disease (AD) is a progressive neurological disorder that impairs memory and cognitive function in elderly individuals. Early detection is vital to slow disease progression and enable timely therapeutic intervention. Traditional diagnostic approaches for AD, however, often inv...

#### 

https://www.frontiersin.org/articles/10.3389/fnins.2025.1653565

## Does spatialized audio enhance the creation of mental representations?







FRONTIERS NEUROSCIENCE

**Summary:** Navigating unfamiliar environments without vision is a considerable challenge for blind individuals, as it requires constructing accurate cognitive maps. Binaural audio feedback, which delivers spatialized auditory cues, has been proposed as a means of enhancing spatial navigation by leveraging the ...



https://www.frontiersin.org/articles/10.3389/fnins.2025.1660373

# Retraction: Role of alterations in protein kinase p38y in the pathogenesis of the synaptic pathology in dementia with Lewy bodies and $\alpha$ -synuclein transgenic models



**⊗** Read full article:

https://www.frontiersin.org/articles/10.3389/fnins.2025.1721408

## Interventions to Reduce Incidence and Progression of Myopia in Children and Adults



**Summary:** The alarming increase in childhood myopia has emerged as a significant public health concern. Due to its long-term consequences, there is also an expanding interest in adult-onset myopia. This review provides a comprehensive summary of interventions for slowing the onset and progression of myopia an...

#### 

https://pubmed.ncbi.nlm.nih.gov/41109517/?

### Lamina cribrosa shape in non-human primates is different from that of humans

Sigal

Summary: Non-human primates (NHPs) are a crucial model for studying glaucoma because of their similarities to humans in anatomy, physiology and pathology. Our goal in this study was to quantify in vivo NHP lamina cribrosa (LC) shapes at low, normal, and elevated intraocular pressures (IOPs), and compare them...

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## Associations of adverse childhood experiences, inflammation, and cognition in older Black adults

Indira C

1 2025-10-19 min 62 words

**LOW VISION** 

Summary: CONCLUSIONS: Distinct ACEs profiles were significantly associated with episodic memory and HPA dysregulation-related inflammation. The severe adversity, parental conflict, and low adversity groups showed no reliable predictions to cognition or cognitive status. These findings highlight the need for ...

#### 

https://pubmed.ncbi.nlm.nih.gov/41110208/?

### Visual Assessment in Elderly Inpatients Following a Fall

1 65 min words

LOW VISION

Summary: Introduction Falls are a major cause of morbidity in older adults, with visual impairment recognized as a key modifiable risk factor. National guidelines recommend vision assessment following a fall; however, adherence remains suboptimal. This quality improvement project aimed to evaluate compliance...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41111684/?

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## **Cerebral Venous Sinus Thrombosis Following Nitrous Oxide Abuse: A Clinical Reminder of a Growing Trend**



1 68 min words



LOW VISION

**Summary:** Cerebral venous sinus thrombosis (CVST) is a rare cause of stroke that may mimic other intracranial disorders. A 32-year-old male with bipolar disorder and prior venous thromboembolism presented with severe occipital headache, progressive blurred vision, and a brief sensory episode. He reported rece...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41111878/?

## **Swept-Source Optical Coherence Tomography Angiography After Rhegmatogenous Retinal Detachment Treated With Different Approaches**



● Jerzy 1 64 Nawrocki min words



LOW VISION

Summary: Purpose: To present long-term changes in swept-source optical coherence tomography angiography (SS-OCTA) after different approaches in rhegmatogenous retinal detachment. Methods: This was a retrospective study of patients after segmental buckling, circumferential buckling, primary vitrectomy, or com...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41112492/?

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## Repeated low-intensity red light therapy for childhood myopia: a retrospective cohort study



1 36 min words





LOW VISION

Summary: CONCLUSION: RLRL therapy significantly slowed myopia progression and improved visual and accommodative function in children over 12 months, with no major safety concerns. These findings support RLRL as a promising, safe intervention for pediatric myopia control.

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41113016/?

## DWMamba: a structure-aware adaptive state space network for image quality improvement

Zhixiong 1 59
Huang min words

LOW VISION

Summary: Overcoming visual degradation in challenging imaging scenarios is essential for accurate scene understanding. Although deep learning methods have integrated various perceptual capabilities and achieved remarkable progress, their high computational cost limits practical deployment under resource-cons...

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### **Rare Presentations of Acute Angle Closure: A Case Series**

Dubev

1 22 min 222 words

LOW VISION

Summary: CONCLUSION: Angle closure should be strongly suspected in patients with pain and sudden vision blurring, even if the initial IOP is low.

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41113686/?

A Cross-sectional Study on Adherence to Topical Glaucoma Medication and its Determinants among Patients Attending Glaucoma Clinics of a Tertiary Care Institute of Ahmedabad City, Gujarat, India



**Summary:** CONCLUSION: Low adherence to medication was found among 82% of cases. Factors significantly associated with adherence were gender, education, duration of treatment, and having received prior instruction. Forgetfulness and the cost of treatment were the most common factors leading to low treatment ad...

#### 

https://pubmed.ncbi.nlm.nih.gov/41113788/?

## 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**

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

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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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:

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









**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

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...

#### Read full article:

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

## **Gradient Porous Flexible Pressure Sensors with the Relay** Effect for High-Accuracy Braille-to-Speech Recognition











Summary: The development of highly sensitive, wide linear-range flexible pressure sensors is crucial for practical applications in human-computer interaction, physiological signal detection, and motion monitoring. However, traditional flexible pressure sensors often suffer from limited compressibility in the...

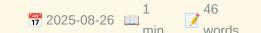
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## Individual and community level factors influencing modern contraceptive use among women of reproductive age in South Africa: a multilevel analysis











Summary: CONCLUSION: Sensory disability status influenced women's contraceptive behaviour in South Africa. Current family planning interventions should target women with sensory disabilities by prioritising accessible communication methods (e.g., braille, sign language), disability awareness training for hea...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40855574/?

### **Explosion-powered eversible tactile displays**







BRAILLE

Summary: High-resolution electronic tactile displays stand to transform haptics for remote machine operation, virtual reality, and digital information access for people who are blind or visually impaired. Yet, increasing the resolution of these displays requires increasing the number of individually addressa...

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









BRAILLE

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...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40874468/?

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

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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...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40889233/?

### 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...

#### 

https://pubmed.ncbi.nlm.nih.gov/40937808/?

# 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.

#### 

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/?

Diagnostic Efficacy of Olfactory Function Test Using Functional Near-Infrared Spectroscopy with Machine Learning in Healthy Adults: A Prospective Diagnostic-Accuracy (Feasibility/Validation) Study in Healthy Adults with Algorithm Development

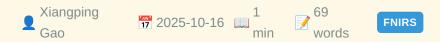


**Summary:** Background/Objectives: The YSK olfactory function (YOF) test is a culturally adapted psychophysical tool that assesses threshold, discrimination, and identification. This study evaluated whether functional near-infrared spectroscopy (fNIRS) synchronized with routine YOF testing, combined with machin...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41095653/?

# Enhanced Activation in the Dorsolateral Prefrontal Cortex and Inferior Parietal Lobule During Recovery from Body Dissatisfaction



**Summary:** Previous studies have examined the neural mechanisms of body dissatisfaction. This study aimed to investigate the neural basis of recovery from body dissatisfaction. Sixty-seven young women participated in this study, engaging in a fat talk-a conversation known to induce body dissatisfaction-followe...

#### 

https://pubmed.ncbi.nlm.nih.gov/41099370/?

## Immediate modulation effects of Tongue Tri-needle on brain functional networks in infratentorial stroke patients with dysphagia: a randomized controlled trial



**Summary:** CONCLUSION: Infratentorial stroke patients with dysphagia exhibit disrupted functional connectivity within the fronto-temporo-sensorimotor network, which is associated with clinical impairment. Tongue Tri-needle multi-stage, selective reconfiguration of brain functional networks, particularly by mod...

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## Riemannian geometry boosts functional near-infrared spectroscopy-based brain-state classification accuracy



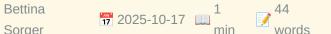
**Summary:** CONCLUSION: To our knowledge, we are the first to demonstrate that the proposed Riemannian-geometry-based classification approach is both powerful and viable for fNIRS data, substantially increasing the accuracy in binary and multi-class classification of brain activation patterns.

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41104354/?

## Sensitive and specific fNIRS-based approach for awareness detection in disorders of consciousness: proof of principle in healthy adults









Summary: CONCLUSION: This individualized diagnostic approach may have the potential to significantly enhance diagnostic accuracy for DoCs. It provides a noninvasive, efficient, and objective assessment, potentially reducing the rate of misdiagnosis rates. The practicality and minimal technical requirements o...

#### **⊗** Read full article:

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## **Neural and behavioral dynamics of dyadic rhythm** coordination across limb pairings











Summary: Interpersonal motor synchronization relies on precise neural coordination, yet its underlying brain mechanisms remain incompletely understood. Guided by mutual prediction theory, we investigated how temporal structure and effector-specific constraints shape dyadic coordination. Using functional near...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41106782/?

### Motor imagery in individuals with congenital aphantasia

Magdalena Szubielska

1 71 min words

FNIRS

**Summary:** Individuals who experience aphantasia have an inability to create sensory mental images, what lead to a range of cognitive and behavioral differences compared to the general population. However, little is known about how this phenomenon affects the creation of motor imagery. Our study aims to check ...

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## **Interpersonal Neural Synchrony Across Levels of Interpersonal Closeness and Social Interactivity**

Esposito

1 63 min words

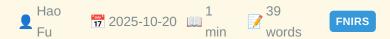
FNIRS

**Summary:** Interpersonal neural synchrony is a fundamental aspect of social interactions, offering insights into the neural mechanisms underlying human connection and developmental outcomes. So far, hyperscanning studies have examined synchrony across different dyads and tasks, leading to inconsistencies in ex...

#### 

https://pubmed.ncbi.nlm.nih.gov/41110650/?

# Influence of Exercise Prescription on the Recovery of Cognitive Function In College Students With Mild-to-Moderate Depression



**Summary:** CONCLUSION: Receiving exercise prescription intervention can effectively reduce the severity of depressive symptoms, enhance the recovery of brain cognitive function, and improve the neurosecretory system function recovery and the expressions of neurotrophic factors in college students with mild-to-...

#### **⊗** Read full article:

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## Street dancing enhances cognitive reserve in young females: an fNIRS study



**Summary:** CONCLUSION: The 18-week street dance intervention effectively improved working memory, inhibitory control, and cognitive flexibility, contributing to enhanced cognitive reserve. As a physical activity combining rhythm and coordination, street dance offers a promising early intervention strategy for ...

#### Read full article:

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## Simple Prostatectomy is an Effective Option for BPH Patients With Hypocontractile Bladders









BRAIN COMPUTER INTERFACE

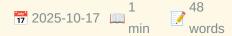
Summary: CONCLUSIONS: This is one of the first studies assessing outcomes of SP in patients with hypocontractile bladders. SP is an effective surgical option for patients with impaired detrusor function including those who are catheter dependent.

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## Electromagnetic Stimulation to Reduce Disability After Ischemic Stroke: The EMAGINE Randomized Clinical Trial





BRAIN COMPUTER INTERFACE

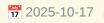
**Summary:** CONCLUSION AND RELEVANCE: This trial found that ENTF therapy is safe. Although the difference between groups was not statistically significant, ENTF therapy may reduce global disability in patients with severe baseline disability after ischemic stroke. These results warrant confirmation in a higher ...

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## A different bimodal: case series of patients with a cochlear implant and a contralateral bone conduction implant









BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSION: The synergy of electrical and vibratory auditory stimulation observed in this case series provided subjective functional benefits and measurable speech perception benefits for some patients, while others experienced minimal or no measurable benefit and ceased usage.

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# Progress in the combined application of Brain-Computer Interface and non-invasive brain stimulation for post-stroke motor recovery



**Summary:** Stroke remains one of the leading causes of disability and death among adults globally. Both Brain-Computer Interface (BCI) and Non-invasive Brain Stimulation (NIBS) have shown significant potential in facilitating motor recovery in stroke patients. The combination of BCI and NIBS enhances brain fun...

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## Modulation of brain oscillations by continuous theta burst stimulation in patients with insomnia









BRAIN COMPUTER INTERFACE

Summary: Continuous theta burst stimulation (cTBS) induces long-lasting depression of cortical excitability in motor cortex. In the present study, we explored the modulation of cTBS on resting state electroencephalogram (rsEEG) during wakefulness and subsequent sleep in patients with insomnia disorder. Forty...

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## Establishing a comprehensive national auditory implant registry in Japan: Trends and demographics from the first two years (2023-2024)









BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: This is the first comprehensive report from the national registry in Japan that includes not only CIs but also AMEIs and BCIs. The registry demonstrated reliable data capture and highlighted important trends in patient demographics and surgical practices. Continued data collection will e...

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# Emoface: Al-assisted diagnostic model for differentiating major depressive disorder and bipolar disorder via facial biomarkers



**Summary:** Affective disorders, including Major Depressive Disorder (MDD) and Bipolar Disorder (BD), exhibit significant mood abnormalities, making rapid diagnosis essential for social stability and healthcare efficiency. Traditional diagnostic solutions, including medical history collection and psychological ...

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+e462414

### An Explainable 3D-Deep Learning Model for EEG Decoding in **Brain-Computer Interface Applications**

Nadia Mammone

1 2025-10-19 min 68 words

BRAIN COMPUTER INTERFACE

Summary: Decoding electroencephalographic (EEG) signals is of key importance in the development of brain-computer interface (BCI) systems. However, high inter-subject variability in EEG signals requires user-specific calibration, which can be time-consuming and limit the application of deep learning approach...

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## Detection and rehabilitation of age-related motor skills impairment: neurophysiological biomarkers and perspectives







BRAIN COMPUTER INTERFACE

Summary: Age-related decline in motor control, manifesting as impaired posture, gait, and slowed movement execution, significantly diminishes the quality of life in older adults. These functional deficits are associated with alterations in neurophysiological data, which are analyzed using advanced techniques...

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# Neuroanatomy-Informed Brain-Machine Hybrid Intelligence for Robust Acoustic Target Detection

Luzheng 1 63
Bi 2025-10-20 min words

BRAIN COMPUTER INTERFACE

Summary: Sound target detection (STD) plays a critical role in modern acoustic sensing systems. However, existing automated STD methods show poor robustness and limited generalization, especially under low signal-to-noise ratio (SNR) conditions or when processing previously unencountered sound categories. To...

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## **Monday Daily Thread: Project ideas!**

**REDDIT PYTHON** 

Summary: <!-- SC\_OFF --><div class="md"><h1>Weekly Thread: Project Ideas \$\frac{1}{2} < \line{h1} > \frac{1}{2} \text{ for the class in the class for the cl >Welcome to our weekly Project Ideas thread! Whether you're a newbie looking for a first project or an expert seeking a new challenge, this is the place for you. <h2>How it Works:</h2> <strong>Suggest a Project</st...

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

https://www.reddit.com/r/Python/comments/1ob573h/monday daily thread project ideas/

### func-to-web is now much better – Thanks for the feedback!

REDDIT PYTHON

Summary: <!-- SC OFF --><div class="md">15 days ago I shared func-to-web here and got amazing feedback (150+ upvotes, thank you!). Since then, I've been working hard on the suggestions and added some major features. <strong>What it does (quick reminder):</strong> Turn any Python function into a web...

**Read full article:** 

https://www.reddit.com/r/Python/comments/1obmzbm/functoweb\_is\_now\_much\_better\_thanks\_for\_the/

## Production-ready FastAPI template with CI/CD and Docker releases

**1** 195 Armanshirzad min words

REDDIT PYTHON

Summary: <!-- SC OFF --><div class="md"><strong>What My Project Does</ strong> This is a starter template for FastAPI applications that comes with production-friendly defaults: Continuous Integration on every push (tests, linting, CodeQL security scan) Automated releases on tag push: b...

https://www.reddit.com/r/Python/comments/1ob3xmq/productionready\_fastapi\_template\_with\_cicd\_and/

### Code from MIT's 1986 SICP video lectures

1 2 2 HACKER NEWS

Summary: <a href="https://news.ycombinator.com/item?id=45621557">Comments</a>

https://github.com/felipap/sicp-code

# A Force/Torque Taxonomy for Classifying States During Physical Co-Manipulation

1 2025-06-17 min 149 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...

# Haptic Relocation Away From the Fingertip: Where, Why, and How

1 194 TRANSACTIONS HAPTICS words

**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...

http://ieeexplore.ieee.org/document/11045422

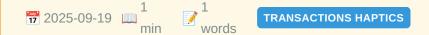
### **Tactile-Thermal Interactions: Cooperation and Competition**

1 198 TRANSACTIONS HAPTICS words

**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...

**Read full article:** 

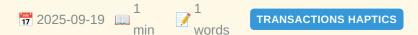
# **Twenty Years of World Haptics: Retrospective and Future Directions**



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

http://ieeexplore.ieee.org/document/11174044

# **Table of Contents**



#### **⊗** Read full article:

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### **Front Cover**



#### **⊗** Read full article:

# Pleasant odors specifically promote a soothing autonomic response and brain-body coupling through respiratory modulation



**⊗** Read full article:

https://www.nature.com/articles/s41598-025-20422-x

# A nap before retrieval reduces false identifications in target absent lineups



https://www.nature.com/articles/s41598-025-20471-2

# Cognitive, neuroimaging, and genetic insights on the interthalamic adhesion from a large cohort study of 591 subjects



https://www.nature.com/articles/s41598-025-20469-w

# A frugal Spiking Neural Network for unsupervised multivariate temporal pattern classification and multichannel spike sorting



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# Interindividual differences in auditory processing moderate the effect of auditory-motor coupling on paired-associate learning



https://www.nature.com/articles/s41598-025-23360-w

# Recurrent issues with deep neural network models of visual recognition



https://www.nature.com/articles/s41598-025-20245-w

# Explicit error coding can mediate gain recalibration in continuous bump attractor networks



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



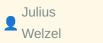
**Summary:** Previous studies have found electroencephalogram (EEG) amplitude and scalp topography differences between neurotypical and neurological/neurosurgical groups, being interpreted at the cognitive level. However, these comparisons are invariably accompanied by anatomical changes. Critical to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

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



1 72 2024-07-02 min words OOSTENVELD ROBERT

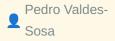
Summary: We present an extension to the Brain Imaging Data Structure (BIDS) for motion data. Motion data is frequently recorded alongside human brain imaging and electrophysiological data. The goal of Motion-BIDS is to make motion data interoperable across different laboratories and with other data modalitie...

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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

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

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 Oostenveld

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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### Interventions to Reduce Incidence and Progression of Myopia in Children and Adults



Chi Pui 1 76
Pang min words



**LOW VISION** 

Summary: The alarming increase in childhood myopia has emerged as a significant public health concern. Due to its long-term consequences, there is also an expanding interest in adult-onset myopia. This review provides a comprehensive summary of interventions for slowing the onset and progression of myopia an...

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https://pubmed.ncbi.nlm.nih.gov/41109517/?

### Lamina cribrosa shape in non-human primates is different from that of humans

Sigal

lan A 77 Low Vision min words

Summary: Non-human primates (NHPs) are a crucial model for studying glaucoma because of their similarities to humans in anatomy, physiology and pathology. Our goal in this study was to quantify in vivo NHP lamina cribrosa (LC) shapes at low, normal, and elevated intraocular pressures (IOPs), and compare them...

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# Associations of adverse childhood experiences, inflammation, and cognition in older Black adults

Indira C Turney

1 2025-10-19 min 62 words

**LOW VISION** 

Summary: CONCLUSIONS: Distinct ACEs profiles were significantly associated with episodic memory and HPA dysregulation-related inflammation. The severe adversity, parental conflict, and low adversity groups showed no reliable predictions to cognition or cognitive status. These findings highlight the need for ...

#### 

https://pubmed.ncbi.nlm.nih.gov/41110208/?

### Visual Assessment in Elderly Inpatients Following a Fall

1 65 min words

LOW VISION

Summary: Introduction Falls are a major cause of morbidity in older adults, with visual impairment recognized as a key modifiable risk factor. National guidelines recommend vision assessment following a fall; however, adherence remains suboptimal. This quality improvement project aimed to evaluate compliance...

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# **Cerebral Venous Sinus Thrombosis Following Nitrous Oxide Abuse: A Clinical Reminder of a Growing Trend**

1 68 min words



LOW VISION

**Summary:** Cerebral venous sinus thrombosis (CVST) is a rare cause of stroke that may mimic other intracranial disorders. A 32-year-old male with bipolar disorder and prior venous thromboembolism presented with severe occipital headache, progressive blurred vision, and a brief sensory episode. He reported rece...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41111878/?

# **Swept-Source Optical Coherence Tomography Angiography After Rhegmatogenous Retinal Detachment Treated With Different Approaches**



● Jerzy 1 64 Nawrocki min words



LOW VISION

Summary: Purpose: To present long-term changes in swept-source optical coherence tomography angiography (SS-OCTA) after different approaches in rhegmatogenous retinal detachment. Methods: This was a retrospective study of patients after segmental buckling, circumferential buckling, primary vitrectomy, or com...

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# Repeated low-intensity red light therapy for childhood myopia: a retrospective cohort study



1 36 min words



LOW VISION

Summary: CONCLUSION: RLRL therapy significantly slowed myopia progression and improved visual and accommodative function in children over 12 months, with no major safety concerns. These findings support RLRL as a promising, safe intervention for pediatric myopia control.

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41113016/?

# DWMamba: a structure-aware adaptive state space network for image quality improvement

Zhixiong 1 59
Huang min words

LOW VISION

Summary: Overcoming visual degradation in challenging imaging scenarios is essential for accurate scene understanding. Although deep learning methods have integrated various perceptual capabilities and achieved remarkable progress, their high computational cost limits practical deployment under resource-cons...

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## **Rare Presentations of Acute Angle Closure: A Case Series**

Dubev

1 22 min 222 words

LOW VISION

Summary: CONCLUSION: Angle closure should be strongly suspected in patients with pain and sudden vision blurring, even if the initial IOP is low.

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41113686/?

A Cross-sectional Study on Adherence to Topical Glaucoma Medication and its Determinants among Patients Attending Glaucoma Clinics of a Tertiary Care Institute of Ahmedabad City, Gujarat, India



**Summary:** CONCLUSION: Low adherence to medication was found among 82% of cases. Factors significantly associated with adherence were gender, education, duration of treatment, and having received prior instruction. Forgetfulness and the cost of treatment were the most common factors leading to low treatment ad...

#### 

https://pubmed.ncbi.nlm.nih.gov/41113788/?

# High-intensity transcranial alternating current stimulation combined with pharmacotherapy for adolescent major depressive disorder: a prospective case report study



**Summary:** CONCLUSIONS: The combination of HI-tACS and pharmacotherapy demonstrated potential early effects in this small cohort of adolescents with MDD, particularly during the initial phase of treatment. These preliminary findings warrant further investigation through large-scale randomized controlled trials...

#### **⊗** Read full article:

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# Non-invasive brain stimulation for suicidal ideation: a systematic review and metanalysis of the current literature









TDCS TACS TRNS

Summary: Data suggests that the available therapeutic tools are still insufficient to deal with suicidality. Non-Invasive Brain Stimulation techniques (NIBS) have entered the recognized guidelines for therapies in psychiatry due to the advantages related to safety and tolerability. The purpose of this review...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41103967/?

Active and sham transcranial direct-current stimulation (tDCS) plus core stability on the knee kinematic and performance of the lower limb of the soccer players with dynamic knee valgus; two armed randomized clinical trial





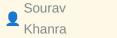
TDCS TACS TRNS

**Summary:** Dynamic knee valgus (DKV) is a prevalent risk factor for anterior cruciate ligament (ACL) injuries in soccer players, particularly during noncontact mechanisms. Transcranial direct-current stimulation (tDCS) and core stability exercises have shown promise in enhancing motor control and biomechanical...

#### 

https://pubmed.ncbi.nlm.nih.gov/41103970/?

# Effect of Precision-based HD-tDCS Over Conventional HDtDCS in Young-onset Mania: Protocol for an Active **Comparison fMRI and TMS Study**







TDCS TACS TRNS

Summary: CONCLUSIONS: This study protocol aims to explore the effect of novel precision-based HD-tDCS in young-onset mania compared to conventional HD-tDCS, thereby allowing for the examination of precision neuromodulation in young-onset mania.

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# **Progress in the combined application of Brain-Computer** Interface and non-invasive brain stimulation for post-stroke motor recovery









TDCS TACS TRNS

Summary: Stroke remains one of the leading causes of disability and death among adults globally. Both Brain-Computer Interface (BCI) and Non-invasive Brain Stimulation (NIBS) have shown significant potential in facilitating motor recovery in stroke patients. The combination of BCI and NIBS enhances brain fun...

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https://pubmed.ncbi.nlm.nih.gov/41106071/?

# **Development and Validation of The Agonistic Continuum** Scale (TACS)

Raymond A
Knight

TDCS TACS TRNS
words

Summary: Sexual violence includes a wide variety of behaviors, ranging from harassment to coercion, to rape, to sexual homicide. Although the criminal justice system distinguishes these forms of sexual violence, several studies have suggested that they represent different degrees of severity of an underlying...

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# Military applications of transcranial direct current stimulation (tDCS) for enhanced multitasking performance

Nathan 1 62
Ward min words

TDCS TACS TRNS

Summary: Effective multitasking in high-stakes military environments is critical yet often compromised by cognitive overload, leading to operational errors. This scoping review explores the potential of transcranial direct current stimulation (tDCS) as a cognitive enhancement tool for improving multitasking ...

#### 

https://pubmed.ncbi.nlm.nih.gov/41110029/?

# Comparative efficacy of non-invasive brain stimulation for attention-deficit/hyperactivity disorder: a systematic review and network meta-analysis







Summary: CONCLUSION: The dual-tDCS and a-tDCS may be considered among the preferred NIBS interventions for improving cognitive function in ADHD. Specifically, anodal tDCS over the left DLPFC plus cathodal tDCS over the right supraorbital area improved cognitive flexibility; while anodal tDCS over the left DL...

#### **⊗** Read full article:

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# **Effect of preoperative transcranial direct current stimulation** on postoperative delirium in elderly patients following laparoscopic surgery



1 31 min words



TDCS TACS TRNS

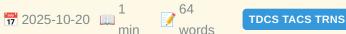
Summary: CONCLUSION: A single session of preoperative tDCS can reduce the incidence of POD in elderly patients undergoing major laparoscopic surgery and can also reduce postoperative anxiety and depression in these patients.

#### 

https://pubmed.ncbi.nlm.nih.gov/41112611/?

# Noninvasive Neurostimulation to the Inferior Frontal Sulcus or Cerebellum Improves Accuracy But Not Timing in a **Speech Motor Learning Task**







**Summary:** Speech motor learning depends on phonological working memory mechanisms in left posterior inferior frontal sulcus (LpIFS) and motor learning mechanisms in right cerebellum (RCbm). This study examines how transcranial direct current stimulation (tDCS), applied focally to these regions, affects speech...

#### **⊗** Read full article:

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# Simple Prostatectomy is an Effective Option for BPH Patients With Hypocontractile Bladders









BRAIN COMPUTER INTERFACE

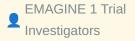
Summary: CONCLUSIONS: This is one of the first studies assessing outcomes of SP in patients with hypocontractile bladders. SP is an effective surgical option for patients with impaired detrusor function including those who are catheter dependent.

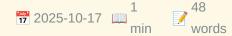
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# Electromagnetic Stimulation to Reduce Disability After Ischemic Stroke: The EMAGINE Randomized Clinical Trial





BRAIN COMPUTER INTERFACE

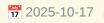
**Summary:** CONCLUSION AND RELEVANCE: This trial found that ENTF therapy is safe. Although the difference between groups was not statistically significant, ENTF therapy may reduce global disability in patients with severe baseline disability after ischemic stroke. These results warrant confirmation in a higher ...

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+e462414

# A different bimodal: case series of patients with a cochlear implant and a contralateral bone conduction implant









BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSION: The synergy of electrical and vibratory auditory stimulation observed in this case series provided subjective functional benefits and measurable speech perception benefits for some patients, while others experienced minimal or no measurable benefit and ceased usage.

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# Progress in the combined application of Brain-Computer Interface and non-invasive brain stimulation for post-stroke motor recovery



**Summary:** Stroke remains one of the leading causes of disability and death among adults globally. Both Brain-Computer Interface (BCI) and Non-invasive Brain Stimulation (NIBS) have shown significant potential in facilitating motor recovery in stroke patients. The combination of BCI and NIBS enhances brain fun...

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+e462414

# Modulation of brain oscillations by continuous theta burst stimulation in patients with insomnia









BRAIN COMPUTER INTERFACE

Summary: Continuous theta burst stimulation (cTBS) induces long-lasting depression of cortical excitability in motor cortex. In the present study, we explored the modulation of cTBS on resting state electroencephalogram (rsEEG) during wakefulness and subsequent sleep in patients with insomnia disorder. Forty...

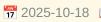
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# Establishing a comprehensive national auditory implant registry in Japan: Trends and demographics from the first two years (2023-2024)









BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: This is the first comprehensive report from the national registry in Japan that includes not only CIs but also AMEIs and BCIs. The registry demonstrated reliable data capture and highlighted important trends in patient demographics and surgical practices. Continued data collection will e...

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# Emoface: Al-assisted diagnostic model for differentiating major depressive disorder and bipolar disorder via facial biomarkers



**Summary:** Affective disorders, including Major Depressive Disorder (MDD) and Bipolar Disorder (BD), exhibit significant mood abnormalities, making rapid diagnosis essential for social stability and healthcare efficiency. Traditional diagnostic solutions, including medical history collection and psychological ...

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+e462414

# An Explainable 3D-Deep Learning Model for EEG Decoding in **Brain-Computer Interface Applications**

Nadia Mammone

1 2025-10-19 min 68 words

BRAIN COMPUTER INTERFACE

Summary: Decoding electroencephalographic (EEG) signals is of key importance in the development of brain-computer interface (BCI) systems. However, high inter-subject variability in EEG signals requires user-specific calibration, which can be time-consuming and limit the application of deep learning approach...

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# Detection and rehabilitation of age-related motor skills impairment: neurophysiological biomarkers and perspectives

Hramov





BRAIN COMPUTER INTERFACE

Summary: Age-related decline in motor control, manifesting as impaired posture, gait, and slowed movement execution, significantly diminishes the quality of life in older adults. These functional deficits are associated with alterations in neurophysiological data, which are analyzed using advanced techniques...

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# Neuroanatomy-Informed Brain-Machine Hybrid Intelligence for Robust Acoustic Target Detection

Luzheng 1 63
Bi 2025-10-20 min words

BRAIN COMPUTER INTERFACE

Summary: Sound target detection (STD) plays a critical role in modern acoustic sensing systems. However, existing automated STD methods show poor robustness and limited generalization, especially under low signal-to-noise ratio (SNR) conditions or when processing previously unencountered sound categories. To...

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### The impact of unemployment on dream content.





DREAMING

**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...

http://doi.org/10.1037/drm0000310

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

1 122 DREAMING words

**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:

http://doi.org/10.1037/drm0000296

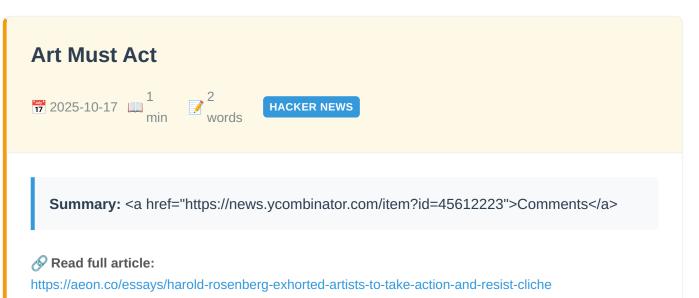
# Anatomical connectivity-based parcellation of the human orbitofrontal cortex.

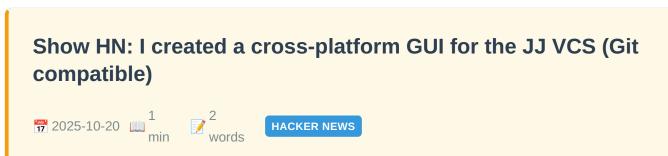
1 2025-07-10 min 222 BEHAVIORAL NEUROSCIENCE

**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...

**Read full article:** 

http://doi.org/10.1037/bne0000628





Summary: <a href="https://news.ycombinator.com/item?id=45645120">Comments</a>

Read full article: https://judojj.com

# Postman which I thought worked locally on my computer, is down

helloguillecl 7 2025-10-20 min 13 HACKER NEWS

**Summary:** Article URL: <a href="https://status.postman.com">https://status.postman.com">https://status.postman.com</a> Comments URL: <a href="https://news.ycombinator.com/item?id=45645172">https://news.ycombinator.com/item?id=45645172</a> Points: 107 # Comments: 47

https://status.postman.com

# An Exploration of the Electrocorticogram Signatures Evoked by Ultrasound Thalamus Stimulation Under Isoflurane Anesthesia in Rats

1 2025-03-28 min 252 TRANSACTIONS BIOMEDICAL ENGINEERING

**Summary:** Objective: The transcranial ultrasound stimulation (TUS) on the thalamus can indirectly induce cortical response. Studies have shown that general anesthetic induced unconsciousness is related to interruption of thalamocortical connectivity. However, the neural mechanism of how anesthesia levels infl...

# Effects of theta burst stimulation on the interoceptive brain network and cardiac interoception

BRAIN RESEARCH

**Summary:** Publication date: 1 December 2025<b>Source:</b> Brain Research, Volume 1868Author(s): Lisa Lai, Til Ole Bergmann, Claus Vögele, Jonathan Cimino, Damien Salles, Marian Van der Meulen, Tabea Schmidt, André Schulz</ p>



https://www.sciencedirect.com/science/article/pii/S0006899325005591?dgcid=rss\_sd\_all

# A deep learning framework for real-time prediction of the behavioral state transition during predation





BRAIN RESEARCH

Summary: Publication date: 1 December 2025<b>Source:</b> Brain Research, Volume 1868Author(s): Guifeng Zhai, Jincheng Wang, Qiaoqian Wei, Qiyue Deng, Xue Liu, Zhiyi Chen, Yi Zhou



**Read full article:** 

https://www.sciencedirect.com/science/article/pii/S0006899325005451?dqcid=rss sd all

## Processing Mandarin Chinese classifiers as a lexicosyntactic feature during noun phrase production

1 min

BRAIN RESEARCH

**Summary:** Publication date: 1 December 2025<b>Source:</b> Brain Research, Volume 1868Author(s): Jin Wang, Jurriaan Witteman, Niels O. Schiller

https://www.sciencedirect.com/science/article/pii/S000689932500558X?dgcid=rss\_sd\_all

## Astrocyte response in Alzheimer's disease: Good or bad?

1 min



BRAIN RESEARCH

**Summary:** Publication date: 1 December 2025<b>Source:</b> Brain Research, Volume 1868Author(s): Alaa Ismail, Hayder M. Al-kuraishy, Ali I. Al-Gareeb, Ali K. Albuhadily, Asmaa S.A. Yassen, Athanasios Alexiou, Marios Papadakis, Gaber El-Saber Batiha

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## Delay selection by spike-timing-dependent plasticity shapes efficient networks for signal transmission

Ghadiri, A., Rezaei, H., Aertsen, A., Kumar, A., Valizadeh,

1 198 min words

**BIORXIV NEUROSCIENCE** 

**Summary:** Information processing in the brain relies on efficient communication between different brain regions. Brain oscillations can control signal transmission in brain networks by modulating the timing and excitability of sender and receiver areas. For effective transmission, signals should arrive at tar...

https://www.biorxiv.org/content/10.1101/2025.10.20.682868v1?rss=1

## Oxytocin modulates respiratory heart rate variability through a hypothalamus-brainstem-heart neuronal pathway

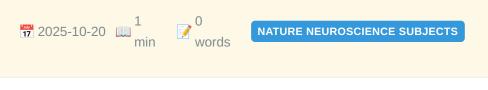




NATURE NEUROSCIENCE SUBJECTS

https://www.nature.com/articles/s41593-025-02074-2

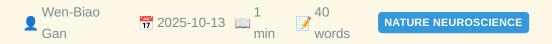
## A lateral hypothalamic neuronal population expressing leptin receptors counteracts anxiety to enable adaptive behavioral responses



Read full article:

https://www.nature.com/articles/s41593-025-02078-y

## Astrocytic Ca<sup>2+</sup> prevents synaptic depotentiation by limiting repetitive activity in dendrites during motor learning



**Summary:** Nature Neuroscience, Published online: 13 October 2025; <a href="https://www.nature.com/articles/s41593-025-02072-4">doi:10.1038/s41593-025-02072-4</a>
Lai et al. show a function of astrocytic Ca2+ in preventing synaptic depotentiation by reducing repetitive dendritic activity in the motor cor...

https://www.nature.com/articles/s41593-025-02072-4

## Oxytocin modulates respiratory heart rate variability through a hypothalamus-brainstem-heart neuronal pathway

Clément Menuet

1 42 NATURE NEUROSCIENCE words

Summary: Nature Neuroscience, Published online: 20 October 2025; <a href="https://"><a href="https://"></a> www.nature.com/articles/s41593-025-02074-2">doi:10.1038/s41593-025-02074-2</a></ p>Buron et al. show that oxytocin enhances heart rate variability linked to breathing during recovery from stress. This calming and cardio-prote...

https://www.nature.com/articles/s41593-025-02074-2

## A lateral hypothalamic neuronal population expressing leptin receptors counteracts anxiety to enable adaptive behavioral responses



Tatiana 1 36
Korotkova min words



NATURE NEUROSCIENCE

Summary: Nature Neuroscience, Published online: 20 October 2025; <a href="https://"><a href="https://"></a> www.nature.com/articles/s41593-025-02078-y">doi:10.1038/s41593-025-02078-y</a></ p>Figge-Schlensok et al. show that leptin-sensitive neurons in the lateral hypothalamus encode anxiogenic stimuli and facilitate adaptive strate...

Read full article:

https://www.nature.com/articles/s41593-025-02078-y

## Medicine on the menu: When illness informs appetite

Ji Heon HanWilliam W. JaaDepartment of Neuroscience, The Herbert Wertheim UF Scripps Institute

¶ for Biomedical Innovation & Technology, Jupiter, FL 33458bProgram in Integrative Biology and Neuroscience, Department of Biological Sciences, Florida Atlantic University, Jupiter, FL 33458

1 15 PNAS NEUROSCIENCE words

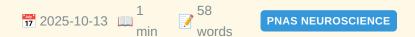
**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 42, October 2025. <br/> <br/> />

https://www.pnas.org/doi/abs/10.1073/pnas.2524005122?af=R

## Sex differences in healthy brain aging are unlikely to explain higher Alzheimer's disease prevalence in women

Anne RavndalAnders M. FjellDidac Vidal-PiñeiroØystein SørensenEmilie S. FalchJulia KropiunigPablo

F. GarridoJames M. RoeJosé-Luis Alatorre-WarrenMarkus H. SneveDavid Bartrés-FazAlvaro Pascual-LeoneAndreas M. BrandmaierSandra DüzelSimone KühnUlman LindenbergerLars NybergLeiv Otto WatneRichard N. HensonKristine B. WalhovdHåkon GrydelandaCenter for Lifespan Changes in Brain and Cognition, Department of Psychology, University of Oslo, Oslo 0317, NorwaybComputational Radiology and Artificial Intelligence, Department of Radiology and Nuclear Medicine, Oslo University Hospital, Oslo 0372, NorwaycDepartment of Medicine, Faculty of Medicine and Health Sciences and Neurosciences Institute, University of Barcelona, Barcelona 08036, SpaindInstitut Guttmann, Institut Universitari de Neurorehabilitació adscrit a la Universidad Autónoma de Barcelona, Badalona 08916, SpaineFundació de Recerca Clínic Barcelona, Institut d'Investigacions Biomèdiques August Pi i Sunyer, Barcelona 08036, SpainfHinda and Arthur Marcus Institute for Aging Research and Deanna and Sidney Wolk Center for Memory Health, Hebrew SeniorLife, Boston, MA 02131gDepartment of Neurology, Harvard Medical School, Boston, MA 02115hCenter for Lifespan Psychology, Max Planck Institute for Human Development, Berlin 14195, GermanyiDepartment of Psychology, MSB Medical School Berlin, Berlin 14197, GermanyiMax Planck University College London Centre for Computational Psychiatry and Ageing Research, Berlin 14195, GermanykMax Planck University College London Centre for Computational Psychiatry and Ageing Research, London WC1B 5EH, United KingdomlDepartment of Psychiatry and Psychotherapy, University Clinic Hamburg-Eppendorf, Hamburg 20251, GermanymCenter for Environmental Neuroscience, Max Planck Institute for Human Development, Berlin 14195, GermanynUmeå Center for Functional Brain Imaging, Umeå University, Umeå 901 87, SwedenoDepartment of Medical and Translational Biology, Umeå University, Umeå 901 87, SwedenpDepartment of Diagnostics and Intervention, Umeå University, Umeå 901 87, SwedenqOslo Delirium Research Group, Institute of Clinical Medicine, Campus Ahus, University of Oslo, Oslo 0318, Norwayr Department of Geriatric Medicine, Akershus University Hospital, Lørenskog 1478, NorwaysMedical Research Council Cognition and Brain Sciences Unit, Department of Psychiatry, University of Cambridge, Cambridge CB2 7EF, United Kingdom



**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 42, October 2025. <br/>
Str />As Alzheimer's disease (AD) is diagnosed more frequently in women, understanding the role of sex has become a key priority in AD research. However, despite aging being the primary risk factor for AD, it remain...

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

https://www.pnas.org/doi/abs/10.1073/pnas.2510486122?af=R

## Functional organization of the primary motor cortex in psychosis and the potential role of intereffector regions in psychomotor slowing

Sebastian WaltherFlorian WüthrichAnastasia PavlidouNiluja NadesalingamStephan HeckersMelanie G. NuofferVictoria ChapellierKatharina StegmayerLydia V. MaderthanerAlexandra KyrouSofie von KänelStephanie LefebvreaUniversity Hospital of Psychiatry and Psychotherapy Bern, Translational Research Center, University of Bern, 3000 Bern, SwitzerlandbTranslational Imaging Center, Swiss Institute for Translational and Entrepreneurial Medicine, 3000 Bern, SwitzerlandcDepartment of

■ Psychiatry, Psychosomatics, and Psychotherapy, Center of Mental Health, University Hospital of Würzburg, 97080 Würzburg, GermanydDepartment of Psychiatry and Behavioral Science, Vanderbilt University, Nashville, TN 37232eGraduate School for Health Sciences, University of Bern, 3000 Bern, SwitzerlandfUniversity Hospital Inselspital Bern, Department for Neurology, Psychosomatic Medicine, 3000 Bern, SwitzerlandgDepartment of Consultation-Liaison Psychiatry and Psychosomatic Medicine, University Hospital Zurich, University of Zurich, 8091 Zurich, Switzerland



**Summary:** Proceedings of the National Academy of Sciences, Volume 122, Issue 42, October 2025. <br/>
SignificanceRecent literature recommended a revision of the human motor homunculus to include, in addition to the primary motor cortex regions active during movement execution, intereffector regions orchestrat...

https://www.pnas.org/doi/abs/10.1073/pnas.2425388122?af=R

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

Lydia 1 130 Danglot min words

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

C. 254
Palanisamy min words

FRONTIERS NEUROINFORMATICS

**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

Yiling 1 207

FRONTIERS COMPUTATIONAL NEUROSCIENCE

**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 1 197 Cheng min 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 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

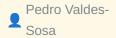
OOSTENVELD ROBERT

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

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...

#### 

https://pubmed.ncbi.nlm.nih.gov/39786979/?

## 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/?

## 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...

#### 

https://pubmed.ncbi.nlm.nih.gov/40800964/?

## Interventions to Reduce Incidence and Progression of Myopia in Children and Adults

Chi Pui
Pang
Pang
To 2025-10-18
Pang
To 76
Words
Low Vision

Summary: The alarming increase in childhood myopia has emerged as a significant public health concern. Due to its long-term consequences, there is also an expanding interest in adult-onset myopia. This review provides a comprehensive summary of interventions for slowing the onset and progression of myopia an...

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## Lamina cribrosa shape in non-human primates is different from that of humans

Ian A

1 77 min words

LOW VISION

Summary: Non-human primates (NHPs) are a crucial model for studying glaucoma because of their similarities to humans in anatomy, physiology and pathology. Our goal in this study was to quantify in vivo NHP lamina cribrosa (LC) shapes at low, normal, and elevated intraocular pressures (IOPs), and compare them...

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https://pubmed.ncbi.nlm.nih.gov/41109592/?

## Associations of adverse childhood experiences, inflammation, and cognition in older Black adults

Indira C
Turney

1 62 min words

LOW VISION

Summary: CONCLUSIONS: Distinct ACEs profiles were significantly associated with episodic memory and HPA dysregulation-related inflammation. The severe adversity, parental conflict, and low adversity groups showed no reliable predictions to cognition or cognitive status. These findings highlight the need for ...

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## Visual Assessment in Elderly Inpatients Following a Fall

1 65 min words



LOW VISION

Summary: Introduction Falls are a major cause of morbidity in older adults, with visual impairment recognized as a key modifiable risk factor. National guidelines recommend vision assessment following a fall; however, adherence remains suboptimal. This quality improvement project aimed to evaluate compliance...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41111684/?

## **Cerebral Venous Sinus Thrombosis Following Nitrous Oxide Abuse: A Clinical Reminder of a Growing Trend**







**Summary:** Cerebral venous sinus thrombosis (CVST) is a rare cause of stroke that may mimic other intracranial disorders. A 32-year-old male with bipolar disorder and prior venous thromboembolism presented with severe occipital headache, progressive blurred vision, and a brief sensory episode. He reported rece...

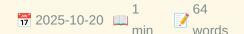
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## **Swept-Source Optical Coherence Tomography Angiography After Rhegmatogenous Retinal Detachment Treated With Different Approaches**









LOW VISION

Summary: Purpose: To present long-term changes in swept-source optical coherence tomography angiography (SS-OCTA) after different approaches in rhegmatogenous retinal detachment. Methods: This was a retrospective study of patients after segmental buckling, circumferential buckling, primary vitrectomy, or com...

#### Read full article:

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## Repeated low-intensity red light therapy for childhood myopia: a retrospective cohort study

Fengling 1 36
Xu min words

LOW VISION

Summary: CONCLUSION: RLRL therapy significantly slowed myopia progression and improved visual and accommodative function in children over 12 months, with no major safety concerns. These findings support RLRL as a promising, safe intervention for pediatric myopia control.

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## DWMamba: a structure-aware adaptive state space network for image quality improvement

Zhixiong

1 59 min words

**LOW VISION** 

Summary: Overcoming visual degradation in challenging imaging scenarios is essential for accurate scene understanding. Although deep learning methods have integrated various perceptual capabilities and achieved remarkable progress, their high computational cost limits practical deployment under resource-cons...

#### 

https://pubmed.ncbi.nlm.nih.gov/41113434/?

### Rare Presentations of Acute Angle Closure: A Case Series

Suneeta 1 22

Dubey min words

LOW VISION

Summary: CONCLUSION: Angle closure should be strongly suspected in patients with pain and sudden vision blurring, even if the initial IOP is low.

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## A Cross-sectional Study on Adherence to Topical Glaucoma **Medication and its Determinants among Patients Attending Glaucoma Clinics of a Tertiary Care Institute of Ahmedabad** City, Gujarat, India







Summary: CONCLUSION: Low adherence to medication was found among 82% of cases. Factors significantly associated with adherence were gender, education, duration of treatment, and having received prior instruction. Forgetfulness and the cost of treatment were the most common factors leading to low treatment ad...

#### 

https://pubmed.ncbi.nlm.nih.gov/41113788/?

## 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:

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

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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...

#### 

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...

#### 

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...

#### Read full article:

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## **Gradient Porous Flexible Pressure Sensors with the Relay** Effect for High-Accuracy Braille-to-Speech Recognition







Summary: The development of highly sensitive, wide linear-range flexible pressure sensors is crucial for practical applications in human-computer interaction, physiological signal detection, and motion monitoring. However, traditional flexible pressure sensors often suffer from limited compressibility in the...

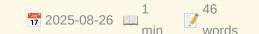
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## Individual and community level factors influencing modern contraceptive use among women of reproductive age in South Africa: a multilevel analysis







BRAILLE

Summary: CONCLUSION: Sensory disability status influenced women's contraceptive behaviour in South Africa. Current family planning interventions should target women with sensory disabilities by prioritising accessible communication methods (e.g., braille, sign language), disability awareness training for hea...

#### Read full article:

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### **Explosion-powered eversible tactile displays**







BRAILLE

Summary: High-resolution electronic tactile displays stand to transform haptics for remote machine operation, virtual reality, and digital information access for people who are blind or visually impaired. Yet, increasing the resolution of these displays requires increasing the number of individually addressa...

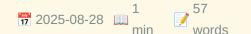
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## A Biomimetic Fiber-Entangled Permeable Electronic Skin for Strain-Insensitive and High-Resolution Tactile Sensing









BRAILLE

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...

#### Read full article:

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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**









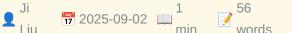
**Summary:** It has been argued in previous research that several competing pressures guide the directions of language evolution (economy vs. redundancy; arbitrariness vs. systematicity). For sign languages, however, the effects of competing pressures on their change of lexical systems remain largely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

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









BRAILLE

**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









BRAILLE

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...

#### 

https://pubmed.ncbi.nlm.nih.gov/40937808/?

# 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.

#### 

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/?

## High-intensity transcranial alternating current stimulation combined with pharmacotherapy for adolescent major depressive disorder: a prospective case report study

**Summary:** CONCLUSIONS: The combination of HI-tACS and pharmacotherapy demonstrated potential early effects in this small cohort of adolescents with MDD, particularly during the initial phase of treatment. These preliminary findings warrant further investigation through large-scale randomized controlled trials...

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## Non-invasive brain stimulation for suicidal ideation: a systematic review and metanalysis of the current literature









TDCS TACS TRNS

Summary: Data suggests that the available therapeutic tools are still insufficient to deal with suicidality. Non-Invasive Brain Stimulation techniques (NIBS) have entered the recognized guidelines for therapies in psychiatry due to the advantages related to safety and tolerability. The purpose of this review...

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Active and sham transcranial direct-current stimulation (tDCS) plus core stability on the knee kinematic and performance of the lower limb of the soccer players with dynamic knee valgus; two armed randomized clinical trial



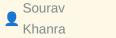


**Summary:** Dynamic knee valgus (DKV) is a prevalent risk factor for anterior cruciate ligament (ACL) injuries in soccer players, particularly during noncontact mechanisms. Transcranial direct-current stimulation (tDCS) and core stability exercises have shown promise in enhancing motor control and biomechanical...

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## Effect of Precision-based HD-tDCS Over Conventional HDtDCS in Young-onset Mania: Protocol for an Active **Comparison fMRI and TMS Study**



1 31 min words

TDCS TACS TRNS

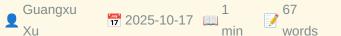
Summary: CONCLUSIONS: This study protocol aims to explore the effect of novel precision-based HD-tDCS in young-onset mania compared to conventional HD-tDCS, thereby allowing for the examination of precision neuromodulation in young-onset mania.

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## **Progress in the combined application of Brain-Computer** Interface and non-invasive brain stimulation for post-stroke motor recovery









TDCS TACS TRNS

Summary: Stroke remains one of the leading causes of disability and death among adults globally. Both Brain-Computer Interface (BCI) and Non-invasive Brain Stimulation (NIBS) have shown significant potential in facilitating motor recovery in stroke patients. The combination of BCI and NIBS enhances brain fun...

#### 

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## **Development and Validation of The Agonistic Continuum** Scale (TACS)

Raymond A
Knight

TDCS TACS TRNS
words

Summary: Sexual violence includes a wide variety of behaviors, ranging from harassment to coercion, to rape, to sexual homicide. Although the criminal justice system distinguishes these forms of sexual violence, several studies have suggested that they represent different degrees of severity of an underlying...

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## Military applications of transcranial direct current stimulation (tDCS) for enhanced multitasking performance

Nathan 1 62
Ward min words

TDCS TACS TRNS

Summary: Effective multitasking in high-stakes military environments is critical yet often compromised by cognitive overload, leading to operational errors. This scoping review explores the potential of transcranial direct current stimulation (tDCS) as a cognitive enhancement tool for improving multitasking ...

#### 

https://pubmed.ncbi.nlm.nih.gov/41110029/?

## Comparative efficacy of non-invasive brain stimulation for attention-deficit/hyperactivity disorder: a systematic review and network meta-analysis







Summary: CONCLUSION: The dual-tDCS and a-tDCS may be considered among the preferred NIBS interventions for improving cognitive function in ADHD. Specifically, anodal tDCS over the left DLPFC plus cathodal tDCS over the right supraorbital area improved cognitive flexibility; while anodal tDCS over the left DL...

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## **Effect of preoperative transcranial direct current stimulation** on postoperative delirium in elderly patients following laparoscopic surgery



1 31 min words



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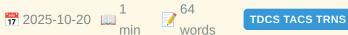
Summary: CONCLUSION: A single session of preoperative tDCS can reduce the incidence of POD in elderly patients undergoing major laparoscopic surgery and can also reduce postoperative anxiety and depression in these patients.

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41112611/?

## Noninvasive Neurostimulation to the Inferior Frontal Sulcus or Cerebellum Improves Accuracy But Not Timing in a **Speech Motor Learning Task**







Summary: Speech motor learning depends on phonological working memory mechanisms in left posterior inferior frontal sulcus (LpIFS) and motor learning mechanisms in right cerebellum (RCbm). This study examines how transcranial direct current stimulation (tDCS), applied focally to these regions, affects speech...

#### 

https://pubmed.ncbi.nlm.nih.gov/41113138/?

Diagnostic Efficacy of Olfactory Function Test Using Functional Near-Infrared Spectroscopy with Machine Learning in Healthy Adults: A Prospective Diagnostic-Accuracy (Feasibility/Validation) Study in Healthy Adults with Algorithm Development



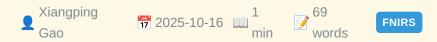
**Summary:** Background/Objectives: The YSK olfactory function (YOF) test is a culturally adapted psychophysical tool that assesses threshold, discrimination, and identification. This study evaluated whether functional near-infrared spectroscopy (fNIRS) synchronized with routine YOF testing, combined with machin...

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# Enhanced Activation in the Dorsolateral Prefrontal Cortex and Inferior Parietal Lobule During Recovery from Body Dissatisfaction



**Summary:** Previous studies have examined the neural mechanisms of body dissatisfaction. This study aimed to investigate the neural basis of recovery from body dissatisfaction. Sixty-seven young women participated in this study, engaging in a fat talk-a conversation known to induce body dissatisfaction-followe...

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https://pubmed.ncbi.nlm.nih.gov/41099370/?

# Immediate modulation effects of Tongue Tri-needle on brain functional networks in infratentorial stroke patients with dysphagia: a randomized controlled trial



Yan
Chen

1
2025-10-17
min

59
words





Summary: CONCLUSION: Infratentorial stroke patients with dysphagia exhibit disrupted functional connectivity within the fronto-temporo-sensorimotor network, which is associated with clinical impairment. Tongue Tri-needle multi-stage, selective reconfiguration of brain functional networks, particularly by mod...

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# Riemannian geometry boosts functional near-infrared spectroscopy-based brain-state classification accuracy



1 37 min words





FNIRS

Summary: CONCLUSION: To our knowledge, we are the first to demonstrate that the proposed Riemannian-geometry-based classification approach is both powerful and viable for fNIRS data, substantially increasing the accuracy in binary and multi-class classification of brain activation patterns.

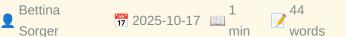
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# Sensitive and specific fNIRS-based approach for awareness detection in disorders of consciousness: proof of principle in healthy adults









Summary: CONCLUSION: This individualized diagnostic approach may have the potential to significantly enhance diagnostic accuracy for DoCs. It provides a noninvasive, efficient, and objective assessment, potentially reducing the rate of misdiagnosis rates. The practicality and minimal technical requirements o...

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# **Neural and behavioral dynamics of dyadic rhythm** coordination across limb pairings











Summary: Interpersonal motor synchronization relies on precise neural coordination, yet its underlying brain mechanisms remain incompletely understood. Guided by mutual prediction theory, we investigated how temporal structure and effector-specific constraints shape dyadic coordination. Using functional near...

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### Motor imagery in individuals with congenital aphantasia

Magdalena Szubielska

1 71 min words

FNIRS

**Summary:** Individuals who experience aphantasia have an inability to create sensory mental images, what lead to a range of cognitive and behavioral differences compared to the general population. However, little is known about how this phenomenon affects the creation of motor imagery. Our study aims to check ...

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# **Interpersonal Neural Synchrony Across Levels of Interpersonal Closeness and Social Interactivity**



1 63 min words







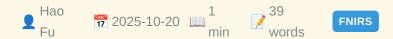
**Summary:** Interpersonal neural synchrony is a fundamental aspect of social interactions, offering insights into the neural mechanisms underlying human connection and developmental outcomes. So far, hyperscanning studies have examined synchrony across different dyads and tasks, leading to inconsistencies in ex...

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# Influence of Exercise Prescription on the Recovery of Cognitive Function In College Students With Mild-to-Moderate Depression



**Summary:** CONCLUSION: Receiving exercise prescription intervention can effectively reduce the severity of depressive symptoms, enhance the recovery of brain cognitive function, and improve the neurosecretory system function recovery and the expressions of neurotrophic factors in college students with mild-to-...

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# Street dancing enhances cognitive reserve in young females: an fNIRS study



**Summary:** CONCLUSION: The 18-week street dance intervention effectively improved working memory, inhibitory control, and cognitive flexibility, contributing to enhanced cognitive reserve. As a physical activity combining rhythm and coordination, street dance offers a promising early intervention strategy for ...

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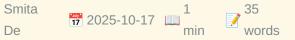
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# Simple Prostatectomy is an Effective Option for BPH Patients With Hypocontractile Bladders









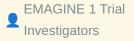
BRAIN COMPUTER INTERFACE

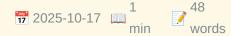
Summary: CONCLUSIONS: This is one of the first studies assessing outcomes of SP in patients with hypocontractile bladders. SP is an effective surgical option for patients with impaired detrusor function including those who are catheter dependent.

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# Electromagnetic Stimulation to Reduce Disability After Ischemic Stroke: The EMAGINE Randomized Clinical Trial





BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSION AND RELEVANCE: This trial found that ENTF therapy is safe. Although the difference between groups was not statistically significant, ENTF therapy may reduce global disability in patients with severe baseline disability after ischemic stroke. These results warrant confirmation in a higher ...

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# A different bimodal: case series of patients with a cochlear implant and a contralateral bone conduction implant









BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSION: The synergy of electrical and vibratory auditory stimulation observed in this case series provided subjective functional benefits and measurable speech perception benefits for some patients, while others experienced minimal or no measurable benefit and ceased usage.

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# Progress in the combined application of Brain-Computer Interface and non-invasive brain stimulation for post-stroke motor recovery



**Summary:** Stroke remains one of the leading causes of disability and death among adults globally. Both Brain-Computer Interface (BCI) and Non-invasive Brain Stimulation (NIBS) have shown significant potential in facilitating motor recovery in stroke patients. The combination of BCI and NIBS enhances brain fun...

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+e462414

## Modulation of brain oscillations by continuous theta burst stimulation in patients with insomnia









BRAIN COMPUTER INTERFACE

Summary: Continuous theta burst stimulation (cTBS) induces long-lasting depression of cortical excitability in motor cortex. In the present study, we explored the modulation of cTBS on resting state electroencephalogram (rsEEG) during wakefulness and subsequent sleep in patients with insomnia disorder. Forty...

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+e462414

### An Explainable 3D-Deep Learning Model for EEG Decoding in **Brain-Computer Interface Applications**

Nadia Mammone

1 2025-10-19 min 68 words

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Luzheng 1 63

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### I built a Persistent KV Store in Pure Python

/u/vollhard-

1 396 min words





**REDDIT PYTHON** 

Summary: <!-- SC\_OFF --><div class="md">Hi everyone! I'm a final year CS student and I've been reading about data storage and storage engines. This is a passion project that I've been working on for the past few months. It is a lightweight, persistent keyvalue storage engine in Python, built from ...

### **Read full article:**

https://www.reddit.com/r/Python/comments/1oborib/i\_built\_a\_persistent\_kv\_store\_in\_pure\_python/





Summary: <a href="https://news.ycombinator.com/item?id=45632429">Comments</a>

https://www.youtube.com/watch?v=o4TdHrMi6do

# My trick for getting consistent classification from LLMs



Summary: <a href="https://news.ycombinator.com/item?id=45571423">Comments</a>

https://verdik.substack.com/p/how-to-get-consistent-classification

## **Pulmonary Hypertension Detection From Heart Sound Analysis**

1 206 min words

TRANSACTIONS BIOMEDICAL ENGINEERING

Summary: The detection of Pulmonary Hypertension (PH) from the computer analysis of digitized heart sounds is a low-cost and non-invasive solution for early PH detection and screening. We present an extensive cross-domain evaluation methodology with varying animals (humans and porcine animals) and varying au...

http://ieeexplore.ieee.org/document/10944577

### **Transcranial Focused Ultrasound Modulates Visual Thalamus** in a Nonhuman Primate Model

1 2025-04-07 min 250 words



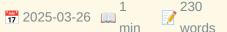


TRANSACTIONS BIOMEDICAL ENGINEERING

Summary: Objective: The thalamus plays a pivotal role as a neural hub, integrating and distributing visual information to cortical regions responsible for visual processing. Transcranial focused ultrasound (tFUS) has emerged as a promising non-invasive brain stimulation technology, enabling modulation of neu...

Read full article:

An Active Insole to Reduce Plantar Pressure Loading: Using **Predictive Finite Element Driven Soft Hydraulic Actuators to** Minimize Plantar Pressure and the Pressure Time Integral for **Diabetic Foot Ulceration Risk Management** 







TRANSACTIONS BIOMEDICAL ENGINEERING

Summary: Objective: This article aims to design, manufacture and evaluate an active insole to reduce plantar tissue loading to minimise the risk of diabetic foot ulceration for people living with diabetes. Methods: A prototype hydraulic soft robotic actuating insole was produced. It was controlled by an appr...



http://ieeexplore.ieee.org/document/10938869

# **Optimizing Non-Intersecting Synthetic Vascular Trees in Nonconvex Organs**







TRANSACTIONS BIOMEDICAL ENGINEERING

Summary: Objective: The understanding of the mechanisms driving vascular development is still limited. Techniques to generate vascular trees synthetically have been developed to tackle this problem. However, most algorithms are limited to single trees inside convex perfusion volumes. We introduce a new frame...



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TRANSACTIONS BIOMEDICAL ENGINEERING

http://ieeexplore.ieee.org/document/11173873

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### **Front Cover**



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### A Survey of Few-Shot Learning for Biomedical Time Series

2024-11-06 min 176

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...

# The diagnostic significance of pupillary reflex pathways: insights from classical examination and advanced pupillometry

Joanna 1 212 Konopińska min words

FRONTIERS NEUROSCIENCE

Summary: Background/objectivesThe pupil, a dynamic ocular structure, serves as a critical indicator of neurological and ophthalmological function. This interdisciplinary review explores the anatomical, physiological, and pathological aspects of pupillary reflexes and disorders.ContentEmphasis is placed on th...

**⊗** Read full article:

https://www.frontiersin.org/articles/10.3389/fnins.2025.1677431

## Development of novel signal and spike velocity analysis tools in compact peripheral nerve recording designs

Jonas Klus, Alexander J Boys, Ruben Ruiz-Mateos Serrano, George G Malliaras and Alejandro

1 2025-10-14 min 236 JOURNAL NEURAL ENGINEERING words





Summary: Objective. Analysis tools for peripheral nerve recordings remain underdeveloped compared to those for brain signals, limiting the advancement of nerve neurotechnologies for clinical treatments such as closed-loop systems. This study introduces and explores the performance of two novel nerve signal a...

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http://iopscience.iop.org/article/10.1088/1741-2552/ae0c3b

# BGTransform: a neurophysiologically informed EEG data augmentation framework

Jin Yue, Xiaolin Xiao, Hao Zhang, Minpeng Xu and Dong Mina

1 2025-10-14 min

279 words

JOURNAL NEURAL ENGINEERING

**Summary:** Objective. Deep learning has emerged as a powerful approach for decoding electroencephalography (EEG)-based brain–computer interface (BCI) signals. However, its effectiveness is often limited by the scarcity and variability of available training data. Existing data augmentation methods often introdu...

http://iopscience.iop.org/article/10.1088/1741-2552/ae0c3a

# Using economic value signals from primate prefrontal cortex in neuro-engineering applications

Tevin C Rouse, Shira M Lupkin and Vincent B McGinty

1 276 min words

JOURNAL NEURAL ENGINEERING

**Summary:** Objective. Brain–machine interface (BMI) research has shown the efficacy of using motor and sensory-related neural signals to assist physically impaired patients. Despite the comparable ability to extract more abstract cognitive signals from the brain, little effort has been devoted to leveraging th...

Read full article:

http://iopscience.iop.org/article/10.1088/1741-2552/ae0bf6

## Inter-ictal spike rates are not modulated by anti-seizure medication taper in the epilepsy monitoring unit: a tale of two confounders \*

Nina J Ghosn, Katherine Walsh, Kevin Xie, Carlos Aguila, Akash R Pattnaik, Devin Ma, Abba M Krieger, Erin C Conrad and Brian Litt

1 2025-10-14 min 273 words



JOURNAL NEURAL ENGINEERING

Summary: Objective. New implantable and wearable devices hold great promise to help patients manage their seizure disorders. One proposed application is measuring the rate of interictal epileptiform discharges as a biomarker of medication levels and seizure risk. This study aims to determine whether interict...

http://iopscience.iop.org/article/10.1088/1741-2552/ae0521

# Neuralace: manufacture, parylene-C coating, and mechanical properties

Juan Pablo Botero, Spencer M Roberts, Piotr Mackowiak, Nicholas S Witham, Lukas Selzer, Balaji Srikanthan, Kai Zoschke, Sandeep Negi and Florian Solzbacher



**Summary:** Objective. This study investigates the mechanical properties of the Neuralace, a novel ultra-thin, high-channel-count mesh-type subdural electrode array, to characterize its mechanical compatibility with neural tissue (i.e., the forces exerted onto the brain upon conformation) for chronic brain—comp...

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http://iopscience.iop.org/article/10.1088/1741-2552/ae0c39

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



**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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VOQkZ1QsEMPlx7YY7aF6AfClqP-RYZd&fc=None&ff=20251020174043&v=2.18.0.post9+e462414

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

Hiroyuki
Kajimoto

75 TACTILE ACUITY words

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









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

2025-07-02

min

80

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...

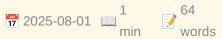
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## Sensitivity and vagal reactivity to C-tactile-mediated affective touch in mild cognitive impairment due to Alzheimer's disease







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...

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

Eric 1 2025-08-24 min 22 TACTILE ACUITY

**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



**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 58 min 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

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

Runar Unnthorsson 1 2025-09-27 min 65 words

**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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# Simple Prostatectomy is an Effective Option for BPH Patients With Hypocontractile Bladders



**Summary:** CONCLUSIONS: This is one of the first studies assessing outcomes of SP in patients with hypocontractile bladders. SP is an effective surgical option for patients with impaired detrusor function including those who are catheter dependent.

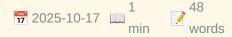
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+e462414

# Electromagnetic Stimulation to Reduce Disability After Ischemic Stroke: The EMAGINE Randomized Clinical Trial





BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSION AND RELEVANCE: This trial found that ENTF therapy is safe. Although the difference between groups was not statistically significant, ENTF therapy may reduce global disability in patients with severe baseline disability after ischemic stroke. These results warrant confirmation in a higher ...

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# A different bimodal: case series of patients with a cochlear implant and a contralateral bone conduction implant









BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSION: The synergy of electrical and vibratory auditory stimulation observed in this case series provided subjective functional benefits and measurable speech perception benefits for some patients, while others experienced minimal or no measurable benefit and ceased usage.

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# Progress in the combined application of Brain-Computer Interface and non-invasive brain stimulation for post-stroke motor recovery



**Summary:** Stroke remains one of the leading causes of disability and death among adults globally. Both Brain-Computer Interface (BCI) and Non-invasive Brain Stimulation (NIBS) have shown significant potential in facilitating motor recovery in stroke patients. The combination of BCI and NIBS enhances brain fun...

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+e462414

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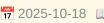
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# Emoface: Al-assisted diagnostic model for differentiating major depressive disorder and bipolar disorder via facial biomarkers



**Summary:** Affective disorders, including Major Depressive Disorder (MDD) and Bipolar Disorder (BD), exhibit significant mood abnormalities, making rapid diagnosis essential for social stability and healthcare efficiency. Traditional diagnostic solutions, including medical history collection and psychological ...

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+e462414

## An Explainable 3D-Deep Learning Model for EEG Decoding in **Brain-Computer Interface Applications**

Nadia Mammone

1 2025-10-19 min 68 words

BRAIN COMPUTER INTERFACE

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# Detection and rehabilitation of age-related motor skills impairment: neurophysiological biomarkers and perspectives







BRAIN COMPUTER INTERFACE

Summary: Age-related decline in motor control, manifesting as impaired posture, gait, and slowed movement execution, significantly diminishes the quality of life in older adults. These functional deficits are associated with alterations in neurophysiological data, which are analyzed using advanced techniques...

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## Neuroanatomy-Informed Brain-Machine Hybrid Intelligence for Robust Acoustic Target Detection

Luzheng 1 63
Bi 2025-10-20 min words

BRAIN COMPUTER INTERFACE

Summary: Sound target detection (STD) plays a critical role in modern acoustic sensing systems. However, existing automated STD methods show poor robustness and limited generalization, especially under low signal-to-noise ratio (SNR) conditions or when processing previously unencountered sound categories. To...

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## Implicit learning of melodic structure: A role for pitch?





**PSYCHOMUSICOLOGY** 

Summary: Growing evidence suggests that pitch influences musical processing, with melodic processing being enhanced in higher pitch ranges (e.g., Fujioka et al., 2005) and rhythmic processing being enhanced in lower pitches, and these effects may have a basis in elementary properties of the auditory system (...

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

1 259 min words



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...

http://doi.org/10.1037/pmu0000304

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

1 192 min words





PSYCHOMUSICOLOGY

**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...

Read full article:

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

1 227 min words

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 ...

http://doi.org/10.1037/pmu0000300

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

1 2023-07-10 min 202 words

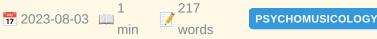


**PSYCHOMUSICOLOGY** 

**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...

Read full article:

## Capturing coordination and intentionality in joint musical improvisation.



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...

http://doi.org/10.1037/pmu0000299

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

1 2023-04-20 min 252 words





**PSYCHOMUSICOLOGY** 

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 ...

Read full article:

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

1 256 min words



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...

http://doi.org/10.1037/pmu0000305

## How to deal with regression to the mean when selecting out conscious trials in order to analyze unconscious trials.

1 2024-09-09 min 261 words





CLINICAL NEUROSCIENCE

Summary: In implicit cognition research generally, one standard strategy is to measure the conscious status of knowledge on each trial (e.g., with confidence, structural knowledge attributions, visual clarity ratings) and then subselect the trials where the knowledge is measured to be unconscious. If the acc...

Read full article:

http://doi.org/10.1037/cns0000399

## Anomalous experiences are associated with high subconscious connectedness.

1 2025-04-17 min 264 CLINICAL NEUROSCIENCE

**Summary:** A series of three studies in the United States, collectively involving 2,216 research participants and including two nationwide Internet surveys, examined the relationship of anomalous experiences with the psychological trait of subconscious connectedness, as well as with several other psychological...

http://doi.org/10.1037/cns0000428

# When the unconscious contents are expressed in both Rorschach Performance Assessment System (R-PAS) and dreams: An experimental study.



**Summary:** The Rorschach cards may elicit components of personality functioning that escape consciousness but which may influence observable performance during the test. Similarly, the manifest content of dreams may contain unconscious experiential elements that contribute to the formation of the content that ...

http://doi.org/10.1037/cns0000397

## Ignorance is bliss: A meta-analysis of the fear-reducing effects of very brief exposure.

1 2025-07-31 min 268 words

CLINICAL NEUROSCIENCE

Summary: Neuroscientific research on the unconscious basis of fear has been translated into novel interventions designed to reduce fear without conscious awareness. To date, the most empirically supported nonconscious exposure intervention is <em>very brief exposure</em> (VBE), the continuous presentation of...

http://doi.org/10.1037/cns0000435

## Testing the theoretical position that subconscious phenomena are conscious but not self-conscious.

1 98 min words





CLINICAL NEUROSCIENCE

Summary: Building on Fechner's theory of subliminal perception (perception below the absolute threshold for self-conscious apperception) and Morton Prince's theory that subconscious experiences are conscious but not self-conscious, source-monitoring theory attributes the generic self-conscious inference <em>...

Read full article:

http://doi.org/10.1037/cns0000414

## Early contingency information enhances human punishment sensitivity when punishment is frequent but not rare.

1 155 min words

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 ...

http://doi.org/10.1037/bne0000627

## The scariest "user support" email I've ever received

1 2 2 min words

HACKER NEWS

Summary: <a href="https://news.ycombinator.com/item?id=45589715">Comments</a>

https://www.devas.life/the-scariest-user-support-email-ive-ever-received/

## It Kind of Seems Like Peter Thiel Is Losing It

nabla9 7 2025-10-20 min 13 HACKER NEWS

**Summary:** Article URL: <a href="https://futurism.com/future-society/peter-thiel-antichrist-lectures">https://futurism.com/future-society/peter-thiel-antichrist-lectures</a>
Comments URL: <a href="https://news.ycombinator.com/item?">https://news.ycombinator.com/item?</a>
id=45648726">https://news.ycombinator.com/item?id=45648726</a> ...

**⊗** Read full article:

https://futurism.com/future-society/peter-thiel-antichrist-lectures

## Today is when the Amazon brain drain sent AWS down the spout

**Summary:** Article URL: <a href="https://www.theregister.com/2025/10/20/aws\_outage\_amazon\_brain\_drain\_corey\_quinn/">https://www.theregister.com/2025/10/20/aws\_outage\_amazon\_brain\_drain\_corey\_quinn/</a> Comments URL: <a href="https://news.ycombinator.com/item?id=45649178">https://news.ycombinator.com/...

https://www.theregister.com/2025/10/20/aws\_outage\_amazon\_brain\_drain\_corey\_quinn/

## 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

## **Data- and Physics-Driven Deep Learning Based Reconstruction for Fast MRI: Fundamentals and** Methodologies





REVIEWS BIOMEDICAL ENGINEERING

Summary: Magnetic Resonance Imaging (MRI) is a pivotal clinical diagnostic tool, yet its extended scanning times often compromise patient comfort and image quality, especially in volumetric, temporal and quantitative scans. This review elucidates recent advances in MRI acceleration via data and physics-drive...

Read full article:

http://ieeexplore.ieee.org/document/10729663

## SEIZURE OCCURRENCE IN FCD TYPE II IS PREDICTED BY LESION POSITION AND LINKED TO CYTOARCHITECTURAL **ALTERATIONS**

Prochazkova, N., Olson, C. V., Shariati, N., Rozlivkova, J. T., Populova, J., Rehorova, M., Kudlacek, J., Jiruska, P., Novak, O.

1 298 min words

**BIORXIV NEUROSCIENCE** 

Summary: Focal cortical dysplasia (FCD) is a common malformation of cortical development and a major cause of early-onset, drug-resistant epilepsy. FCD type II is defined by abnormal lamination, altered cellular composition, and pathological cells, notably dysmorphic neurons (DNs) and balloon cells. DNs are ...

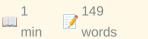
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https://www.biorxiv.org/content/10.1101/2025.10.20.683364v1?rss=1

## **Prolactin Shapes Cortical Plasticity in Fathers**

Haimson, B., Preminger, T., Rayi, P. R., Sagi, H., Binshtok, A. M., MIZRAHI,

2025-10-20



BIORXIV NEUROSCIENCE

Summary: Caregiving alters the mammalian brain to support infant survival. While hypothalamic circuits are known to drive innate parental behaviors, information about the effect of parenthood on sensory processing and perception remain scarce, especially in fathers. We longitudinally imaged the same neurons ...

#### Read full article:

https://www.biorxiv.org/content/10.1101/2025.10.20.683400v1?rss=1

## Spatiotemporal representations of contextual associations for real-world objects

Yeh, L.-C., Peelen, M. V., Kaiser, 1 223 min words

BIORXIV NEUROSCIENCE

**Summary:** In the real world, objects always appear in context. Many objects are reliably associated with a certain scene context (e.g., pots appear in kitchens) and other objects that appear in the same context (e.g., pans appear together with pots). Previous neuroimaging work suggests that such contextual as...

Read full article:

https://www.biorxiv.org/content/10.1101/2025.10.20.683392v1?rss=1

## **Direction Selectivity in Naturalistic Action Observation: Distributed Representations Across the Action Observation Network**



BIORXIV NEUROSCIENCE

**Summary:** Perceiving the direction of observed actions is critical for interpreting intentions and guiding social interaction. While direction selectivity has been extensively studied with simple stimuli such as dots, gratings, or point-light displays (PLDs), little is known about how the brain encodes direct...

https://www.biorxiv.org/content/10.1101/2025.10.20.683194v1?rss=1

## 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

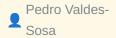
OOSTENVELD ROBERT

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...

#### 

https://pubmed.ncbi.nlm.nih.gov/38956071/?

## 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...

#### 

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

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...

#### 

https://pubmed.ncbi.nlm.nih.gov/39786979/?

## 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/?

## 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/?

## Interventions to Reduce Incidence and Progression of Myopia in Children and Adults

Chi Pui
Pang
Pang
To 2025-10-18
Pang
To 76
Words
Low Vision

Summary: The alarming increase in childhood myopia has emerged as a significant public health concern. Due to its long-term consequences, there is also an expanding interest in adult-onset myopia. This review provides a comprehensive summary of interventions for slowing the onset and progression of myopia an...

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## Lamina cribrosa shape in non-human primates is different from that of humans

Ian A

1 77 min words

LOW VISION

Summary: Non-human primates (NHPs) are a crucial model for studying glaucoma because of their similarities to humans in anatomy, physiology and pathology. Our goal in this study was to quantify in vivo NHP lamina cribrosa (LC) shapes at low, normal, and elevated intraocular pressures (IOPs), and compare them...

#### 

https://pubmed.ncbi.nlm.nih.gov/41109592/?

## Associations of adverse childhood experiences, inflammation, and cognition in older Black adults

Indira C
Turney

1 62 min words

LOW VISION

Summary: CONCLUSIONS: Distinct ACEs profiles were significantly associated with episodic memory and HPA dysregulation-related inflammation. The severe adversity, parental conflict, and low adversity groups showed no reliable predictions to cognition or cognitive status. These findings highlight the need for ...

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## Visual Assessment in Elderly Inpatients Following a Fall

1 65 min words



LOW VISION

Summary: Introduction Falls are a major cause of morbidity in older adults, with visual impairment recognized as a key modifiable risk factor. National guidelines recommend vision assessment following a fall; however, adherence remains suboptimal. This quality improvement project aimed to evaluate compliance...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41111684/?

## **Cerebral Venous Sinus Thrombosis Following Nitrous Oxide Abuse: A Clinical Reminder of a Growing Trend**

Taranjit

1 68 min words

Summary: Cerebral venous sinus thrombosis (CVST) is a rare cause of stroke that may mimic other intracranial disorders. A 32-year-old male with bipolar disorder and prior venous thromboembolism presented with severe occipital headache, progressive blurred vision, and a brief sensory episode. He reported rece...

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## **Swept-Source Optical Coherence Tomography Angiography After Rhegmatogenous Retinal Detachment Treated With Different Approaches**



1 64 min words

LOW VISION

Summary: Purpose: To present long-term changes in swept-source optical coherence tomography angiography (SS-OCTA) after different approaches in rhegmatogenous retinal detachment. Methods: This was a retrospective study of patients after segmental buckling, circumferential buckling, primary vitrectomy, or com...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/41112492/?

## Repeated low-intensity red light therapy for childhood myopia: a retrospective cohort study

Fengling 1 36
Xu min words

LOW VISION

Summary: CONCLUSION: RLRL therapy significantly slowed myopia progression and improved visual and accommodative function in children over 12 months, with no major safety concerns. These findings support RLRL as a promising, safe intervention for pediatric myopia control.

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## DWMamba: a structure-aware adaptive state space network for image quality improvement

Zhixiong

1 59 min words

**LOW VISION** 

Summary: Overcoming visual degradation in challenging imaging scenarios is essential for accurate scene understanding. Although deep learning methods have integrated various perceptual capabilities and achieved remarkable progress, their high computational cost limits practical deployment under resource-cons...

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https://pubmed.ncbi.nlm.nih.gov/41113434/?

## Rare Presentations of Acute Angle Closure: A Case Series

Suneeta 1 22

Dubey min words

LOW VISION

Summary: CONCLUSION: Angle closure should be strongly suspected in patients with pain and sudden vision blurring, even if the initial IOP is low.

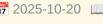
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## A Cross-sectional Study on Adherence to Topical Glaucoma **Medication and its Determinants among Patients Attending Glaucoma Clinics of a Tertiary Care Institute of Ahmedabad** City, Gujarat, India









Summary: CONCLUSION: Low adherence to medication was found among 82% of cases. Factors significantly associated with adherence were gender, education, duration of treatment, and having received prior instruction. Forgetfulness and the cost of treatment were the most common factors leading to low treatment ad...

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https://pubmed.ncbi.nlm.nih.gov/41113788/?

## 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

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...

#### **⊗** 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

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...

#### Read full article:

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

## **Gradient Porous Flexible Pressure Sensors with the Relay** Effect for High-Accuracy Braille-to-Speech Recognition









Summary: The development of highly sensitive, wide linear-range flexible pressure sensors is crucial for practical applications in human-computer interaction, physiological signal detection, and motion monitoring. However, traditional flexible pressure sensors often suffer from limited compressibility in the...

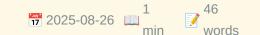
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## Individual and community level factors influencing modern contraceptive use among women of reproductive age in South Africa: a multilevel analysis









Summary: CONCLUSION: Sensory disability status influenced women's contraceptive behaviour in South Africa. Current family planning interventions should target women with sensory disabilities by prioritising accessible communication methods (e.g., braille, sign language), disability awareness training for hea...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40855574/?

### **Explosion-powered eversible tactile displays**







BRAILLE

Summary: High-resolution electronic tactile displays stand to transform haptics for remote machine operation, virtual reality, and digital information access for people who are blind or visually impaired. Yet, increasing the resolution of these displays requires increasing the number of individually addressa...

#### 

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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...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40874468/?

## **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...

#### Read full article:

https://pubmed.ncbi.nlm.nih.gov/40889233/?

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





1 2025-09-02 min 56 words





BRAILLE

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

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





1 55 min words





BRAILLE

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...

#### 

https://pubmed.ncbi.nlm.nih.gov/40937808/?

# 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.

#### 

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/?

Diagnostic Efficacy of Olfactory Function Test Using Functional Near-Infrared Spectroscopy with Machine Learning in Healthy Adults: A Prospective Diagnostic-Accuracy (Feasibility/Validation) Study in Healthy Adults with Algorithm Development



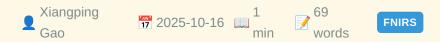
**Summary:** Background/Objectives: The YSK olfactory function (YOF) test is a culturally adapted psychophysical tool that assesses threshold, discrimination, and identification. This study evaluated whether functional near-infrared spectroscopy (fNIRS) synchronized with routine YOF testing, combined with machin...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41095653/?

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# Enhanced Activation in the Dorsolateral Prefrontal Cortex and Inferior Parietal Lobule During Recovery from Body Dissatisfaction



**Summary:** Previous studies have examined the neural mechanisms of body dissatisfaction. This study aimed to investigate the neural basis of recovery from body dissatisfaction. Sixty-seven young women participated in this study, engaging in a fat talk-a conversation known to induce body dissatisfaction-followe...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41099370/?

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## Immediate modulation effects of Tongue Tri-needle on brain functional networks in infratentorial stroke patients with dysphagia: a randomized controlled trial



**Summary:** CONCLUSION: Infratentorial stroke patients with dysphagia exhibit disrupted functional connectivity within the fronto-temporo-sensorimotor network, which is associated with clinical impairment. Tongue Tri-needle multi-stage, selective reconfiguration of brain functional networks, particularly by mod...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41103520/?

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## Riemannian geometry boosts functional near-infrared spectroscopy-based brain-state classification accuracy



**Summary:** CONCLUSION: To our knowledge, we are the first to demonstrate that the proposed Riemannian-geometry-based classification approach is both powerful and viable for fNIRS data, substantially increasing the accuracy in binary and multi-class classification of brain activation patterns.

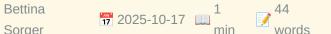
#### Read full article:

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# Sensitive and specific fNIRS-based approach for awareness detection in disorders of consciousness: proof of principle in healthy adults







Summary: CONCLUSION: This individualized diagnostic approach may have the potential to significantly enhance diagnostic accuracy for DoCs. It provides a noninvasive, efficient, and objective assessment, potentially reducing the rate of misdiagnosis rates. The practicality and minimal technical requirements o...

#### **⊗** Read full article:

https://pubmed.ncbi.nlm.nih.gov/41104355/?

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# **Neural and behavioral dynamics of dyadic rhythm** coordination across limb pairings











Summary: Interpersonal motor synchronization relies on precise neural coordination, yet its underlying brain mechanisms remain incompletely understood. Guided by mutual prediction theory, we investigated how temporal structure and effector-specific constraints shape dyadic coordination. Using functional near...

#### Read full article:

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#### Motor imagery in individuals with congenital aphantasia

Magdalena Szubielska

1 71 min words

FNIRS

**Summary:** Individuals who experience aphantasia have an inability to create sensory mental images, what lead to a range of cognitive and behavioral differences compared to the general population. However, little is known about how this phenomenon affects the creation of motor imagery. Our study aims to check ...

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# **Interpersonal Neural Synchrony Across Levels of Interpersonal Closeness and Social Interactivity**

Esposito

1 63 min words

FNIRS

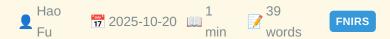
**Summary:** Interpersonal neural synchrony is a fundamental aspect of social interactions, offering insights into the neural mechanisms underlying human connection and developmental outcomes. So far, hyperscanning studies have examined synchrony across different dyads and tasks, leading to inconsistencies in ex...

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# Influence of Exercise Prescription on the Recovery of Cognitive Function In College Students With Mild-to-Moderate Depression



**Summary:** CONCLUSION: Receiving exercise prescription intervention can effectively reduce the severity of depressive symptoms, enhance the recovery of brain cognitive function, and improve the neurosecretory system function recovery and the expressions of neurotrophic factors in college students with mild-to-...

#### **⊗** Read full article:

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# Street dancing enhances cognitive reserve in young females: an fNIRS study



**Summary:** CONCLUSION: The 18-week street dance intervention effectively improved working memory, inhibitory control, and cognitive flexibility, contributing to enhanced cognitive reserve. As a physical activity combining rhythm and coordination, street dance offers a promising early intervention strategy for ...

#### Read full article:

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# Simple Prostatectomy is an Effective Option for BPH Patients With Hypocontractile Bladders









BRAIN COMPUTER INTERFACE

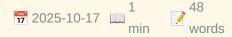
Summary: CONCLUSIONS: This is one of the first studies assessing outcomes of SP in patients with hypocontractile bladders. SP is an effective surgical option for patients with impaired detrusor function including those who are catheter dependent.

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# Electromagnetic Stimulation to Reduce Disability After Ischemic Stroke: The EMAGINE Randomized Clinical Trial





BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSION AND RELEVANCE: This trial found that ENTF therapy is safe. Although the difference between groups was not statistically significant, ENTF therapy may reduce global disability in patients with severe baseline disability after ischemic stroke. These results warrant confirmation in a higher ...

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+e462414

# A different bimodal: case series of patients with a cochlear implant and a contralateral bone conduction implant









BRAIN COMPUTER INTERFACE

**Summary:** CONCLUSION: The synergy of electrical and vibratory auditory stimulation observed in this case series provided subjective functional benefits and measurable speech perception benefits for some patients, while others experienced minimal or no measurable benefit and ceased usage.

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# Progress in the combined application of Brain-Computer Interface and non-invasive brain stimulation for post-stroke motor recovery



**Summary:** Stroke remains one of the leading causes of disability and death among adults globally. Both Brain-Computer Interface (BCI) and Non-invasive Brain Stimulation (NIBS) have shown significant potential in facilitating motor recovery in stroke patients. The combination of BCI and NIBS enhances brain fun...

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+e462414

## Modulation of brain oscillations by continuous theta burst stimulation in patients with insomnia









BRAIN COMPUTER INTERFACE

Summary: Continuous theta burst stimulation (cTBS) induces long-lasting depression of cortical excitability in motor cortex. In the present study, we explored the modulation of cTBS on resting state electroencephalogram (rsEEG) during wakefulness and subsequent sleep in patients with insomnia disorder. Forty...

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# Establishing a comprehensive national auditory implant registry in Japan: Trends and demographics from the first two years (2023-2024)









BRAIN COMPUTER INTERFACE

Summary: CONCLUSION: This is the first comprehensive report from the national registry in Japan that includes not only CIs but also AMEIs and BCIs. The registry demonstrated reliable data capture and highlighted important trends in patient demographics and surgical practices. Continued data collection will e...

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# Emoface: Al-assisted diagnostic model for differentiating major depressive disorder and bipolar disorder via facial biomarkers



**Summary:** Affective disorders, including Major Depressive Disorder (MDD) and Bipolar Disorder (BD), exhibit significant mood abnormalities, making rapid diagnosis essential for social stability and healthcare efficiency. Traditional diagnostic solutions, including medical history collection and psychological ...

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+e462414

## An Explainable 3D-Deep Learning Model for EEG Decoding in **Brain-Computer Interface Applications**

Nadia Mammone

1 2025-10-19 min 68 words

BRAIN COMPUTER INTERFACE

Summary: Decoding electroencephalographic (EEG) signals is of key importance in the development of brain-computer interface (BCI) systems. However, high inter-subject variability in EEG signals requires user-specific calibration, which can be time-consuming and limit the application of deep learning approach...

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# Detection and rehabilitation of age-related motor skills impairment: neurophysiological biomarkers and perspectives







BRAIN COMPUTER INTERFACE

Summary: Age-related decline in motor control, manifesting as impaired posture, gait, and slowed movement execution, significantly diminishes the quality of life in older adults. These functional deficits are associated with alterations in neurophysiological data, which are analyzed using advanced techniques...

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## **Neuroanatomy-Informed Brain-Machine Hybrid Intelligence** for Robust Acoustic Target Detection

Luzheng 1 63
Bi 2025-10-20 min words

BRAIN COMPUTER INTERFACE

Summary: Sound target detection (STD) plays a critical role in modern acoustic sensing systems. However, existing automated STD methods show poor robustness and limited generalization, especially under low signal-to-noise ratio (SNR) conditions or when processing previously unencountered sound categories. To...

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## 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...

**⊗** Read full article:

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.

1 2025-04-07 min 271 words



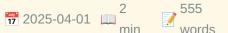


BEHAVIORAL NEUROSCIENCE

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]**





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/april-2025

#### The Internet Archive needs your help.







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

#### gs-batch-pdf v0.6.0: Parallel PDF processing with Ghostscript

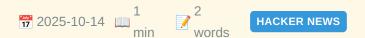


**Summary:** <!-- SC\_OFF --><div class="md">As a structural engineer I have to deal with lots of pdfs and Public Administration strict, sometimes ridiculous, size requirements. I don't like to use online tools, but instead I prefer a nifty cli like Ghostscript (<code>gs</code>). The only problem is that <code...

**⊗** Read full article:

https://www.reddit.com/r/Python/comments/1ob1kxr/gsbatchpdf\_v060\_parallel\_pdf\_processing\_with/

# Intel and AMD standardise ChkTag to bring Memory Safety to x86



Summary: <a href="https://news.ycombinator.com/item?id=45582958">Comments</a>

https://community.intel.com/t5/Blogs/Tech-Innovation/open-intel/ChkTag-x86-Memory-Safety/post/1721490

#### Should MS Replace Satya Nadella with an AI CEO?

MaxGripe 7 2025-10-20 min 13 HACKER NEWS

**Summary:** Article URL: <a href="https://old.reddit.com/r/microsoftsucks/comments/10bsew3/should\_ms\_replace\_satya\_nadella\_with\_an\_ai\_ceo/">https://old.reddit.com/r/microsoftsucks/comments/10bsew3/should\_ms\_replace\_satya\_nadella\_with\_an\_ai\_ceo/</a> Comments URL: <a href="https://news.ycombinator.com/i...">https://old.reddit.com/r/microsoftsucks/comments/10bsew3/should\_ms\_replace\_satya\_nadella\_with\_an\_ai\_ceo/</a>

#### Read full article:

https://old.reddit.com/r/microsoftsucks/comments/1obsew3/should\_ms\_replace\_satya\_nadella\_with\_an\_ai\_ceo/

# ALZET pump implantation in mice for chronic drug delivery to the cochlea



#### 

https://www.nature.com/articles/s41598-025-20395-x

# Next-generation anti-A $\beta$ antibodies show promise in a mouse model of Alzheimer disease



**S** Read full article:

https://www.nature.com/articles/s41551-025-01540-3

# C9orf72 hexanucleotide repeat expansions impair microglial response in ALS



**Summary:** Nature Neuroscience, Published online: 14 October 2025; <a href="https://www.nature.com/articles/s41593-025-02075-1">doi:10.1038/s41593-025-02075-1</a>
This study shows that C9orf72 mutations impair immune activation in ALS, affecting how brain cells communicate, and highlights key differences...

Read full article:

https://www.nature.com/articles/s41593-025-02075-1

#### Region-specific drivers of CSF mobility measured with MRI in humans

Matthias J. P. van

1 44 min words

NATURE NEUROSCIENCE

Summary: Nature Neuroscience, Published online: 14 October 2025; <a href="https://"><a href="https://"></a> www.nature.com/articles/s41593-025-02073-3">doi:10.1038/s41593-025-02073-3</a> p>Brain clearance mechanisms are challenging to visualize in humans. Using magnetic resonance imaging, the authors noninvasively mapped cerebros...

https://www.nature.com/articles/s41593-025-02073-3

#### Science must break its silence to rebuild public trust

Michael L. Platt

1 95 min words



NATURE NEUROSCIENCE

Summary: Nature Neuroscience, Published online: 14 October 2025; <a href="https://"><a href="https://"></a> www.nature.com/articles/s41593-025-02092-0">doi:10.1038/s41593-025-02092-0</a></ p>This Comment calls on scientists to acknowledge how insufficient communication and limited engagement beyond academia have deepened the divide...

https://www.nature.com/articles/s41593-025-02092-0

## Using noise to distinguish between system and observer effects in multimodal neuroimaging

Milan 1 196
Brázdil 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

### Advancing epileptic seizure recognition through bidirectional LSTM networks



Sanaa Al-Marzouki 1 273 min 273 words



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

# Abnormal connection between the posterior insula and the gastric network among patients with functional constipation

Ming 1 254

FRONTIERS HUMAN NEUROSCIENCE

Summary: BackgroundFunctional constipation (FCon) is frequently accompanied by psychological disorders, implicating the interaction between the gastrointestinal symptom and brain dysfunction in FCon. Recent studies combining electrogastrogram and restingstate functional magnetic resonance imaging (fMRI) hav...

https://www.frontiersin.org/articles/10.3389/fnhum.2025.1624489

# Aperiodic brain activity changes in patients with stroke following virtual reality-based upper limb robotic rehabilitation: a pilot Randomized Controlled Trial

Irene Giovanna Aprile

1 240 min words

FRONTIERS HUMAN NEUROSCIENCE

Summary: IntroductionStroke-related brain changes have traditionally been studied through oscillatory electroencephalographic (EEG) activity, but recent evidence highlights the value of aperiodic components. This pilot randomized controlled trial aimed to assess stroke-related aperiodic EEG changes following...

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https://www.frontiersin.org/articles/10.3389/fnhum.2025.1671804

# Spiking neural networks for EEG signal analysis using wavelet transform

Ying Liu 172025-10-16 min 1711 words FRONTIERS NEUROSCIENCE

**Summary:** IntroductionBrain-computer interfaces (BCIs) leverage EEG signal processing to enable human-machine communication and have broad application potential. However, existing deep learning-based BCI methods face two critical limitations that hinder their practical deployment: reliance on manual EEG featu...

https://www.frontiersin.org/articles/10.3389/fnins.2025.1652274

# Glymphatic system and mild traumatic brain injury: a mini review



**Summary:** Since the discovery of the glymphatic system in 2012, research on this brainwide fluid exchange pathway has focused on understanding its role in different neurological diseases. Mild traumatic brain injury (mTBI) is a prevalent, yet often undiagnosed, condition that increases the risk of developing...

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https://www.frontiersin.org/articles/10.3389/fnins.2025.1705690

## Nicotine and neuronal nicotinic acetylcholine receptors: unraveling the mechanisms of nicotine addiction

Hong-Juan 1 167
Wang min words

FRONTIERS NEUROSCIENCE

Summary: Nicotine, recognized as the principal addictive component in tobacco, is mechanistically linked to its interaction with neuronal nicotinic acetylcholine receptors (nAChRs). nAChRs are ligand-gated ion channels composed of five transmembrane subunits, with the α4β2 receptor subtype being the most com...

https://www.frontiersin.org/articles/10.3389/fnins.2025.1670883

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

Thomas 1 70
Hummel min words



TACTILE ACUITY

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
Kajimoto

75 TACTILE ACUITY words

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









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

2025-07-02

min

80

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



1 64 min words



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...

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