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Adrian Barnett

07 February 2025

PMID = 19691020

Title = Efficient interval estimation of a ratio of marginal probabilities in matched-pair data: non-iterative method.

Abstract = Matched-pair designs have been commonly employed in diagnostic, epidemiologic and laboratory studies. For estimation of a ratio of two marginal probabilities in matched-pair data, a Wald-type logarithmic method is computationally simple, but an actual coverage rate is known to be smaller than a nominal one and a length of the confidence interval is shorter than it should be. The Fieller-type method based on constrained maximum likelihood (CML) estimators possesses asymptotically optimum statistical properties and a coverage rate is close to a nominal one. However, hitherto the limits have been obtained by numerical iterations. In this paper, we derive the efficient confidence limits based on CML as analytical solutions of a quartic equation and present the confidence limits in a closed form.

PMID = 27097226

Title = Intra-Individual Variability of Physical Activity in Older Adults With and Without Mild Alzheimer's Disease.

Abstract = Physical activity shows promise for protection against cognitive decline in older adults with and without Alzheimer's disease (AD). To better understand barriers to adoption of physical activity in this population, a clearer understanding of daily and weekly activity patterns is needed. Most accelerometer studies report average physical activity over an entire wear period without considering the potential importance of the variability of physical activity. This study evaluated individual differences in the amount and intra-individual variability of physical activity and determined whether these differences could be predicted by AD status, day of wear, age, gender, education, and cardiorespiratory capacity. Physical activity was measured via accelerometer (Actigraph GT3X+) over one week in 86 older adults with and without AD (n = 33 and n = 53, respectively). Mixed-effects location-scale models were estimated to evaluate and predict individual differences in the amount and intra-individual variability of physical activity. Results indicated that compared to controls, participants with AD averaged 21% less activity, but averaged no significantly greater intra-individual variability. Women and men averaged similar amounts of physical activity, but women were significantly less variable. The amount of physical activity differed significantly across days of wear. Increased cardiorespiratory capacity was associated with greater average amounts of physical activity. Investigation of individual differences in the

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amount and intra-individual variability of physical activity provided insight into differences by AD status, days of monitor wear, gender, and cardiovascular capacity. All individuals regardless of AD status were equally consistent in their physical activity, which may have been due to a highly sedentary sample and/or the early disease stage of those participants with AD. These results highlight the value of considering individual differences in both the amount and intra-individual variability of physical activity.

PMID = 19469636

Title = CYP17 (T34C), CYP19 (Trp39Arg), and FGFR2 (C906T) polymorphisms and the risk of breast cancer in south Indian women.

Abstract = Breast cancer is initiated by exposure to endogenous and exogenous estrogens. A case-control (n= 250-500) study was undertaken to investigate the role of Single Nucleotide Polymorphisms (SNP's) in CYP17 (T34C), CYP19 (Trp39Arg) and FGFR2(C906T). Genotyping was done using the Taqman allelic discrimination assay for CYP17 (T34C) and FGFR2 (T906C) and PCR-CTPP for CYP19 (Trp39Arg). There was a significant protective association of the (TT/CC) genotype of the CYP17 gene against the risk of developing breast cancer (OR= 0.68, 95% CI: 0.49-0.96), which was more significant in postmenopausal women (OR= 0.56, 95% CI: 0.35-0.89) (p= 0.015). CYP19 (Trp39Arg) is a rare polymorphism and all the cases were homozygous for the wild type Trp allele (100%); this was also the case for 99.2% of the controls. We were unable to detect any variant form of the CYP19 gene in south Indian women. There was no significant association between the risk of breast cancer and FGFR2 (C906T). These results suggest that the CYP17 TT/CC genotype is associated with decreased risk for breast cancer, especially in post menopausal women.

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PMID = 33444593

Title = An Intelligent Diagnosis: SMART Syndrome.

PMID = 21773591

Title = Dense ceramic catalytic membranes and membrane reactors for energy and environmental applications.

Abstract = Catalytic membrane reactors which carry out separation and reaction in a single unit are expected to be a promising approach to achieve green and sustainable chemistry with less energy consumption and lower pollution. This article presents a review of the recent progress of dense ceramic catalytic membranes and membrane reactors, and their potential applications in energy and environmental areas. A basic knowledge of catalytic membranes and membrane reactors is first introduced briefly, followed by a short discussion on the membrane materials including their structures, composition and strategies for material development. The configuration of catalytic membranes, the design of membrane reaction processes and the high temperature sealing are also discussed. The performance of catalytic membrane reactors for energy and environmental applications are summarized and typical catalytic membrane reaction processes are presented and discussed. Finally, current challenges and difficulties related to the industrialization of dense ceramic membrane reactors are addressed.

ssed and possible future research is also outlined.

PMID = 18539173

Title = Electrooxidation of catecholamines at carbon nanotube-modified indium tin oxide electrodes.

Abstract = In this study, we prepared carbon nanotube (CNT)/Nafion-modified ITO electrodes and investigated their electrochemical behavior. The CNTs were dissolved in a solution of the ionic polymer Nafion and then CNT/Nafion composite films were deposited onto ITO electrodes through spin-coating of this homogeneous solution. We studied the effects of chemical pretreatment of the CNTs and the pH of the buffer on the electroanalytical behavior of the CNT/Nafion-modified ITO electrodes toward catecholamines. The modified electrodes enhanced the peak current and lowered the overpotentials. We observed high electrooxidative performance for the modified ITO electrodes: the oxidative currents of the catecholamines were up to 125-fold higher than those obtained using bare ITO electrodes.

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PMID = 29615564

Title = Sonic Hedgehog Signaling and Development of the Dentition.

Abstract = Sonic hedgehog (Shh) is an essential signaling peptide required for normal embryonic development. It represents a highly-conserved marker of odontogenesis amongst the toothed vertebrates. Signal transduction is involved in early specification of the tooth-forming epithelium in the oral cavity, and, ultimately, in defining tooth number within the established dentition. Shh also promotes the morphogenetic movement of epithelial cells in the early tooth bud, and influences cell cycle regulation, morphogenesis, and differentiation in the tooth germ. More recently, Shh has been identified as a stem cell regulator in the continuously erupting incisors of mice. Here, we review contemporary data relating to the role of Shh in odontogenesis, focusing on tooth development in mammals and cartilaginous fishes. We also describe the multiple actions of this signaling protein at the cellular level.

PMID = 34792668

Title = Correction to: Ultrastructural changes of smooth and rough titanium implant surfaces induced by metal and plastic periodontal probes.

PMID = 33300120

Title = Brain concentrations of anaesthetic agents: the implications of epilepsy surgery.

PMID = 22969412

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Title = Stat5 signaling specifies basal versus stress erythropoietic responses through distinct binary and graded dynamic modalities.

Abstract = Erythropoietin (Epo)-induced Stat5 phosphorylation (p-Stat5) is essential for both basal erythropoiesis and for its acceleration during hypoxic stress. A key challenge lies in understanding how Stat5 signaling elicits dis

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tinct functions during basal and stress erythropoiesis. Here we asked whether these distinct functions might be specified by the dynamic behavior of the Stat5 signal. We used flow cytometry to analyze Stat5 phosphorylation dynamics in primary erythropoietic tissue in vivo and in vitro, identifying two signaling modalities. In later (basophilic) erythroblasts, Epo stimulation triggers a low intensity but decisive, binary (digital) p-Stat5 signal. In early erythroblasts the binary signal is superseded by a high-intensity graded (analog) p-Stat5 response. We elucidated the biological functions of binary and graded Stat5 signaling using the EpoR-HM mice, which express a "knocked-in" EpoR mutant lacking cytoplasmic phosphotyrosines. Strikingly, EpoR-HM mice are restricted to the binary signaling mode, which rescues these mice from fatal perinatal anemia by promoting binary survival decisions in erythroblasts. However, the absence of the graded p-Stat5 response in the EpoR-HM mice prevents them from accelerating red cell production in response to stress, including a failure to upregulate the transferrin receptor, which we show is a novel stress target. We found that Stat5 protein levels decline with erythroblast differentiation, governing the transition from high-intensity graded signaling in early erythroblasts to low-intensity binary signaling in later erythroblasts. Thus, using exogenous Stat5, we converted later erythroblasts into high-intensity graded signal transducers capable of eliciting a downstream stress response. Unlike the Stat5 protein, EpoR expression in erythroblasts does not limit the Stat5 signaling response, a non-Michaelian paradigm with therapeutic implications in myeloproliferative disease. Our findings show how the binary and graded modalities combine to generate high-fidelity Stat5 signaling over the entire basal and stress Epo range. They suggest that dynamic behavior may encode information during STAT signal transduction.

PMID = 26506883

Title = Administration of perivascular cyanoacrylate for the prevention of cellular damage in saphenous vein grafts: an experimental model.

Abstract = The saphenous vein is the most commonly used graft in coronary artery bypass surgery, since no suitable arterial graft is available. However, the frequency of late graft failure is a cause for research into graft protection. The objective of this study was to investigate the effect of synthetic adhesive cyanoacrylate administration on the saphenous vein graft for preventing vascular damage due to internal pressure on the graft. In this study we enrolled 20 volunteer subjects who had undergone coronary artery bypass surgery and who had excess saphenous vein grafts. Perivascular cyanoacrylate was administered to one of two saphenous vein grafts explanted from each patient. The other saphenous vein graft from each patient was not treated and was used as the control. A model of the arterial system was created using a saphenous vein cardiopulmonary bypass system. Circulation was maintained at 120 mmHg for 45 minutes. Afterwards, the grafts were subjected to histopathological examination. The cyanoacrylate group of grafts did not develop severe vascular damage compared with many instances of moderate and severe damage due to compression in the control group of grafts ($p = 0.003$). Perivascular administration of cyanoacrylate appeared to be successful in the prevention of early saphenous vein graft injury. No in vivo study has been performed to date to assess endothelial damage in the saphenous vein, in order to demonstrate the long-term effects.

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effect of cyanoacrylate. Further investigations are needed in this regard.

PMID = 25966141

Title = Expression and variation of Myf5 and MyoD1 genes in different tissues of Wuzhishan pigs.

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Abstract = The myogenic regulatory factor (MRF) family includes Myf5, MyoD1, Myf4, and Myf6 genes. This experiment assessed the variation of Myf5 and MyoD1 genes from birth to maturity (30, 210, and 360 days) in the back muscle tissue of Wuzhishan pigs (WZSP), and the expression of Myf5 and MyoD1 mRNA in the heart, liver, lung, spleen, kidney, muscle, stomach, and intestine tissues were also examined. The results indicate that the expression level of mRNA for Myf5 and MyoD1 genes in the back muscle tissue is directly proportional to age ($P < 0.05$). Furthermore, of the eight adult pig tissue types that were tested, the expression of Myf5 and MyoD1 was highest in the muscle tissue.

PMID = 23530479

Title = A proposal for a 9-lead electrocardiogram recorded via the Wilson's central terminal.

Abstract = The author argues that the universally employed 12-lead standard electrocardiogram (ECG) which consists of a conglomerate of 3 bipolar limb leads, 6 quasi-unipolar precordial leads acquired via the Wilson's central terminal (WCT), and 3 augmented limb leads recorded via the Goldberger's changing assembly of limb connections, different for each of the augmented leads, is scientifically unsuitable and can be replaced by a 9-lead ECG format comprising the 6 precordial V1-V6 leads and leads VR, VL, and VF, all recorded via the WCT. The reasons and the advantages of such a switch are being discussed.

PMID = 36082745

Title = Hierarchical CoMoS_{3.13}/MoS₂ hollow nanosheet arrays as bifunctional electrocatalysts for overall water splitting.

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Abstract = Hollow hetero-nanosheet arrays have attracted great attention due to their efficient catalytic abilities for water splitting. We successfully fabricated ZIF-67-derived hollow CoMoS_{3.13}/MoS₂ nanosheet arrays on carbon cloth in situ through a two-step heating-up hydrothermal method, in which the MoS₂ nanosheets were suitably distributed on the surface of the hollow CoMoS_{3.13} nanosheet arrays. There was a distinct synergistic effect between CoMoS_{3.13} and MoS₂, and a large number of defective and disordered interfaces were formed, which improved the charge transfer rate and provided abundant electrochemical active sites. CMM 0.5, with the optimal Mo doping concentration of 0.5 mmol, exhibited the best catalytic properties. The overpotential values of CMM 0.5 at 10 mA cm⁻² were only 107 and 169 mV for the HER and OER, respectively, and it had nearly 100% faradaic efficiency. A dual-electrode electrolytic cell assembled with CMM 0.5 required a voltage of only 1.507 V at 10 mA cm⁻² for overall water splitting, and it displayed remarkable long-term durable bifunctional stability.

PMID = 24714177

Title = *Heteroconium chaetospira* induces resistance to clubroot via upregulation of host genes involved in jasmonic acid, ethylene, and auxin biosynthesis

Abstract = An endophytic fungus, *Heteroconium chaetospira* isolate BC2HB1 (Hc), suppressed clubroot (*Plasmodiophora brassicae* -Pb) on canola in growth-cabinet trials. Confocal microscopy demonstrated that Hc penetrated canola roots and colonized cortical tissues. Based on qPCR analysis, the amount of Hc DNA found in canola roots at 14 days after treatment was negatively correlated ($r = 0.92$, $P < 0.001$) with the severity of clubroot at 5 weeks after treatment at a low (2×10^5 spores pot⁻¹) but not high (2×10^5 spores pot⁻¹) dose of pathogen inoculum. Transcript levels of nine *B. napus* (Bn) genes in roots treated with Hc plus Pb, Pb alone and a nontreated control were analyzed using qPCR supplemented with biochemical analysis for the activity of phenylalanine ammonia lyases (PAL). These genes encode enzymes involved in several biosynthetic pathways related potentially to plant defence. Hc plus Pb increased the activity of PAL but not that of the other two genes (BnCCR and BnOPCL) involved also in phenylpropanoid biosynthesis, relative to Pb inoculation alone. In contrast, expression of several genes involved in the jasmonic acid (BnOPR2), ethylene (BnACO), auxin (BnAAO1), and PR-2 protein (BnPR-2) biosynthesis were upregulated by 63, 48, 3, and 3 fold, respectively, by Hc plus Pb over Pb alone. This indicates that these genes may be involved in inducing resistance in canola by Hc against clubroot. The upregulation of BnAAO1 appears to be related to both pathogenesis of clubroot and induced defence mechanisms in canola roots. This is the first report on regulation of specific host genes involved in induced plant resistance by a non-mycorrhizal endophyte.

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PMID = 21475396

Title = Imaging as an End Point in Ischemia Trials.

Abstract = Imaging of cardiac function and anatomy has advanced at an exponential rate over the past two decades. Our ability to quantitatively assess the degree of myocardial ischemia and accurately define the vascular anatomy using noninvasive techniques is greater than ever before. Current advances in cardiac imaging are allowing us to more safely assess patients for myocardial ischemia and better understand the prognostic implications of our findings. This review summarizes the current state of knowledge in cardiac imaging for the assessment of cardiac ischemia with a focus on the use of cardiac MRI.

PMID = 30627239

Title = DCE-MRI and parametric imaging in monitoring response to neoadjuvant chemotherapy in breast carcinoma: a preliminary report.

Abstract = Neoadjuvant chemotherapy is recommended in patients with locally advanced breast cancer. Dynamic contrast-enhanced magnetic resonance imaging (DCE-MRI) enables evaluation of the tumour neovasculature that occurs prior to any volume change, which helps identify early treatment failures and allows prompt implementation of second-line therapy. We conducted a prospective study

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in 14 patients with histopathologically proven breast cancer. DCE-MRI data were acquired using multisection, T1-weighted, 3D VIBE sequences with fat suppression before, during, and after IV bolus injection (0.1 mmol/kg body weight, Gadoversetamide, Optimark). Post-processing of dynamic contrast perfusion data was done with the vendor's Tissue 4D software to generate various dynamic contrast parameters, i.e. K_{trans} , K_{ep} , V_e , initial area under the time signal curve (IAUC), apparent diffusion coefficient (ADC), and enhancement curve. Patients underwent MRI examinations at baseline, and then after two cycles, and finally at completion of chemotherapy. Based on Sataloff criteria for pathological responses, four patients out of 14 were responders, and 10 were non-responders. At the 2nd MRI examination, IAUC was significantly smaller in responders than in non-responders ($p = 0.023$). When the results of the first and second MRI examinations were compared, K_{ep} decreased from baseline to the second MRI ($p = 0.03$) in non-responders and in responders ($p = 0.04$). This change was statistically significant in both groups. The ADC values increased significantly in responders from baseline to the third MRI ($p = 0.012$). In our study, IAUC and ADC were the only parameters that reliably differentiated responders from non-responders after two and three cycles of chemotherapy.

PMID = 38273173

Title = Evolution of Surgical Management and Outcomes of Neuroendocrine Tumor Liver Metastases.

PMID = 34555819

Title = The structural, magnetic, Raman and electrical transport properties of Mn intercalated Ti₃C₂T list(i = "X") .

Abstract = The electronic and magnetic properties of the two-dimensional Ti₃C₂MXenes have attracted a lot of interests due to its potential applications. In this paper, Ti₃C₂MXenes and Mn-doped Ti₃C₂MXenes are synthesized and investigated. The experimental data shows that Mn ions are homogeneously and randomly intercalated between Ti₃C₂ sheets as function terminals, which increase the interlayer distance between Ti₃C₂ sheets and offer a mass of uncoupled magnetic moment. The temperature dependence of the electric resistivity of both samples show similar complex behavior although the resistivity increases dramatically as Mn doping. The inter-flake variable range hopping (VRH) dominates the low temperature electric transport behavior, while the inter-flake thermally activated hopping as well as the metallic intra-flake transport competing with the inter-flake VRH play important roles at high temperature. The increasing resistivity of the Mn-doped sample could be attributed to the increase of the interlayer distance and the enhancement of the localization of the transport electrons after Mn ions intercalation.

PMID = 30568493

Title = Development of a prediction model for pancreatic cancer in patients with type 2 diabetes using logistic regression and artificial neural network models.

Abstract = Patients with type 2 diabetes (T2DM) are suggested to have a higher

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r risk of developing pancreatic cancer. We used two models to predict pancreatic cancer risk among patients with T2DM. The original data used for this investigation were retrieved from the National Health Insurance Research Database of Taiwan. The prediction models included the available possible risk factors for pancreatic cancer. The data were split into training and test sets: 97.5% of the data were used as the training set and 2.5% of the data were used as the test set. Logistic regression (LR) and artificial neural network (ANN) models were implemented using Python (Version 3.7.0). The , precision, and recall were compared between the LR and the ANN models. The areas under the receiver operating characteristic (ROC) curves of the prediction models were also compared. The metrics used in this study indicated that the LR model more accurately predicted pancreatic cancer than the ANN model. For the LR model, the area under the ROC curve in the prediction of pancreatic cancer was 0.727, indicating a good fit. Using this LR model, our results suggested that we could appropriately predict pancreatic cancer risk in patients with T2DM in Taiwan.

PMID = 26962892

Title = Associations between neuropsychiatric symptoms and cognition in Chinese patients with amyotrophic lateral sclerosis.

Abstract = Our objective was to explore features of the neuropsychiatric symptoms in Chinese patients with amyotrophic lateral sclerosis (ALS) and the associations between these neuropsychiatric symptoms and cognition. A total of 91 ALS patients were evaluated using three recommended scales including the Neuropsychiatric Inventory (NPI), Addenbrooke's Cognitive Examination Revised (ACE-R), and Frontal Assessment Battery (FAB) tests. The mean age of onset was 52.5 ± 10.8 years. The median NPI score of all patients was 2.0. The most common neuropsychiatric symptom was dysphoria/depression (59.3%), followed by anxiety (41.8%) and irritability/lability (26.4%). There were no significant differences in the frequency of neuropsychiatric symptoms in terms of gender, age of onset, onset form and disease duration. There were no significant differences in NPI total score, ACE-R total score and FAB total score in terms of gender, age of onset, onset form and disease duration, except for a higher ACE-R score observed in patients with a shorter disease duration. The NPI score had a strong correlation with the ACE-R score but not with the FAB score. In conclusion, neuropsychiatric symptoms appear to be quite common in Chinese ALS patients, who were likely to present with the emotional states of depression or anxiety. The neuropsychiatric symptoms in ALS are closely related to global cognition dysfunction.

PMID = 38848352

Title = Energy Absorption and Beam Damage during Microfocus Synchrotron X-ray Diffraction.

Abstract = In this study, we combine in situ fast differential scanning calorimetry (FDSC) with synchrotron X-ray measurements to study simultaneously the structure and thermophysical properties of materials. Using the example of the organic compound BCH-52, we show that the X-ray beam can heat the sample and

d induce a shift of the heat-flow signal. The aim of this paper is to investigate the influence of radiation on sample behavior. The calorimetric data is used to quantify the absorbed beam energy and, together with the diffraction data, reveal an irreversible damage of the sample. The results are especially important for materials with high absorption coefficients and for high-energy X-ray and electron beams. Our findings illustrate that FDSC combined with X-ray diffraction is a suitable characterization method when beam damage must be minimized.

PMID = 21126334

Title = Barriers to participation in mental health research: are there specific gender, ethnicity and age related barriers?

Abstract = It is well established that the incidence, prevalence and presentation of mental disorders differ by gender, ethnicity and age, and there is evidence that there is also differential representation in mental health research by these characteristics. The aim of this paper is to a) review the current literature on the nature of barriers to participation in mental health research, with particular reference to gender, age and ethnicity; b) review the evidence on the effectiveness of strategies used to overcome these barriers. Studies published up to December 2008 were identified using MEDLINE, PsycINFO and EMBASE using relevant mesh headings and keywords. Forty-nine papers were identified. There was evidence of a wide range of barriers including transportation difficulties, distrust and suspicion of researchers, and the stigma attached to mental illness. Strategies to overcome these barriers included the use of bilingual staff, assistance with travel, avoiding the use of stigmatising language in marketing material and a focus on education about the disorder under investigation. There were very few evaluations of such strategies, but there was evidence that ethnically matching recruiters to potential participants did not improve recruitment rates. Educational strategies were helpful and increased recruitment. Mental health researchers should consider including caregivers in recruitment procedures where possible, provide clear descriptions of study aims and describe the representativeness of their sample when reporting study results. Studies that systematically investigate strategies to overcome barriers to recruitment are needed.

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PMID = 38712752

Title = Association of Timing of Hindfoot Arthrodesis and Early Reoperation Rates for Total Ankle Arthroplasty.

Abstract = Prior literature has demonstrated that ipsilateral hindfoot arthrodesis may increase the risk for reoperation after total ankle arthroplasty (TAA) and that simultaneous hindfoot arthrodesis with TAA could result in short-term clinical and radiologic improvements. The purpose of this study is to compare the reoperation rates after TAA with prior hindfoot arthrodesis vs simultaneous arthrodesis and TAA. Patients who underwent primary TAA were identified in the PearlDiver database. Patients were sorted into 2 study cohorts: hindfoot arthrodesis prior to TAA and simultaneous arthrodesis and TAA. Proportionally matched control cohorts were identified for each study group. Multivariable

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te analysis was conducted to account for any confounding variables and covariates when identifying differences in complications between cohorts. 297 patients underwent TAA with prior hindfoot arthrodesis and 174 underwent TAA and hindfoot arthrodesis concurrently. The incidence of reoperation (13.8% vs 5.2%, .001) and infection (12.6% vs 5.9%, .011) for the simultaneous cohort was higher when compared to the matched control cohort. In contrast, there was no statistically significant difference when comparing the prior arthrodesis cohort to the matched control cohort in reoperation rates (5.1% vs 4.7%, .787) or infection rates (4.4% vs 4.8%, .734). Those undergoing simultaneous procedures had increased incidences of reoperation, wound complications, infection, and emergency department visits (.0167) when compared to the TAA with prior arthrodesis cohort. Patients undergoing TAA and hindfoot arthrodesis concurrently were found to have higher rates of reoperation and infection when compared to the matched control cohort. In contrast, there was no difference in these rates in patients undergoing TAA with prior hindfoot arthrodesis compared with their matched control cohort. Patients undergoing simultaneous procedures had increased rates of reoperations, wound complications, infection, and emergency department visits compared to the TAA with prior arthrodesis cohort.

PMID = 32065814

Title = Engaging people who inject drugs and their peers in HIV testing and harm reduction in Ukraine: do they make a difference?

Abstract = People Who Inject Drugs (PWID) should be offered HIV-testing and harm reduction services. We assessed the effectiveness of including PWID and their peers in HIV-testing by comparing for a period before (2013-2014) and after their introduction (2015-2017), the a) numbers HIV tested b) number enrolled in harm reduction and c) frequency of HIV-testing. An analysis of programme data involved PWID aged ≥ 14 years (1st January 2013-31st December 2017) in Ukraine. Between 2013-2014, HIV-testing (VCT) was done by trained health workers. From 2015, this was Directly Assisted HIV Self-testing (DAST) done by social workers and peers. Optimized HIV case finding (OCF) was introduced (in 2016) as an overlapping strategy with DAST. A total of 844,837 HIV tests were done with 23,427 (2.8%) HIV-positive results. With VCT, there were 164,417 HIV tests compared to 639,685 after engagement of PWID and their peers (>3-fold increase). The highest HIV positive yield (20%) was when OCF was included. With increasing HIV-testing caseload, a progressive decrease in enrollment in harm reduction was seen (85% in 2014 to 47% in 2017, X2 for trend $P < 0.001$). OCF resulted in enrollment into harm reduction of 2722 HIV-positives, which was 35% higher than through DAST alone (7,5%). HIV re-testing almost doubled with DAST. Active engagement of PWID and their peers in HIV-testing increased uptake of HIV-testing. Including OCF has a synergistic effect in HIV-positive yield. Strategies are urgently needed to ensure that individuals who are HIV tested are enrolled in harm reduction.

PMID = 38307652

Title = Management of medication overuse headache.

Abstract = Medication overuse headache (MOH) is a secondary headache character-

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rized by frequent use of acute or symptomatic migraine medications at a sufficient frequency to transform patients from episodic to chronic migraine. MOH represents a significant medical problem, with a serious burden on patients' lives and on society as a whole. MOH patients often have additional comorbidities, and the clinical challenge of helping patients reduce acute medication use and revert to episodic headache can be marked. Treatment includes education and prevention; withdrawal programs; pharmacological prophylaxis; multidisciplinary therapies with behavioral and noninvasive neuromodulation options; and scheduled, frequent follow-up to prevent relapses. The advent of anti-CGRP therapy monoclonal antibodies may provide an alternative to more extensive programs for less complex patients. This review also provides guidance for which patients may benefit most from coordinated integrated programs.

PMID = 27558433

Title = Fructus Amomi Cardamomi Extract Inhibit Coxsackievirus-B3 Induced Myocarditis in Murine Myocarditis Model.

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Abstract = Coxsackievirus B3 (CVB3) is the main cause of acute myocarditis and dilated cardiomyopathy. Plant extracts are considered as useful materials to develop new antiviral drugs. We had previously selected candidate plant extracts, which showed anti-inflammatory effects. We examined the antiviral effects by using a HeLa cell survival assay. Among these extracts, we chose the Amomi Cardamomi (Amomi) extract, which showed strong antiviral effect and preserved cell survival in CVB3 infection. We investigated the mechanisms underlying the ability of Amomi extract to inhibit CVB3 infection and replication. HeLa cells were infected by CVB3 with or without Amomi extract. Erk and Akt activities, and their correlation with virus replication were observed. Live virus titers in cell supernatants and viral positive- and negative-strand RNA amplification were measured. Amomi extract significantly increased HeLa cell survival in different concentrations (100-10 µg/ml). CVB3 capsid protein VP1 expression (76%) and viral protease 2A-induced eIF4G1 cleavage (70%) were significantly decreased in Amomi extract (100 µg/ml) treated cells. The levels of positive- (20%) and negative-strand (80%) RNA were dramatically decreased compared with the control, as revealed by reverse transcription-PCR. In addition, Amomi extract improved mice survival (51% vs 26%) and dramatically reduced heart inflammation in a CVB3-induced myocarditis mouse model. These results suggested that Amomi extract significantly inhibited Enterovirus replication and myocarditis damage. Amomi may be developed as a therapeutic drug for Enterovirus.

PMID = 33121942

Title = Combined Force-Torque Spectroscopy of Proteins by Means of Multiscale Molecular Simulation.

Abstract = Assessing the structural properties of large proteins is important to gain an understanding of their function in, e.g., biological systems or biomedical applications. We propose a method to examine the mechanical properties of proteins subject to applied forces by means of multiscale simulation. Both stretching and torsional forces are considered, and these may be applied

independently of each other. As a proof of principle, we apply torsional forces to a coarse-grained continuum model of the antibody protein immunoglobulin G using fluctuating finite element analysis and use it to identify the area of strongest deformation. This region is essential to the torsional properties of the molecule as a whole because it represents the softest, most deformable domain. Zooming in, this part of the molecule is subjected to torques and stretching forces using molecular dynamics simulations on an atomistically resolved level to investigate its torsional properties. We calculate the torsional resistance as a function of the rotation of the domain while subjecting it to various stretching forces. From this, we assess how the measured twist-torque profiles develop with increasing stretching force and show that they exhibit torsion stiffening, in qualitative agreement with experimental findings. We argue that combining the twist-torque profiles for various stretching forces effectively results in a combined force-torque spectroscopy analysis, which may serve as a mechanical signature for a biological macromolecule.

PMID = 30907170

Title = Safety and immunogenicity of pneumococcal conjugate vaccines in preterm infants.

Abstract = The introduction of pneumococcal conjugate vaccines (PCVs) in the routine immunization program has resulted in a significant decline in invasive pneumococcal diseases (IPD) around the world. Preterm infants are a special group at a high risk of invasive infection by encapsulated bacteria. However, their slow growth accrual and prolonged hospital stay frequently lead to delays in immunization, which contributes to their risk for severe infections. Areas covered: Authors reviewed the published immunogenicity and safety of the use of PCVs in preterm infants. Expert opinion: PCVs are safe and effective for use in low birth weight and in-hospital preterm infants. Local and systemic reactions are similar for both term and preterm populations. Reports were inconsistent on the risk of apnea, therefore hospitalized extremely premature infants should be kept under observation for at least 48 h after immunization.

PMID = 32143430

Title = Evaluation of the Covalent Functionalization of Carbon Nano-Onions with Pyrene Moieties for Supercapacitor Applications.

Abstract = Herein, we report the surface functionalization of carbon nano-onions (CNOs) through an amidation reaction that occurs between the oxidized CNOs and 4-(pyren-4-yl)butanehydrazide. Raman and Fourier transform infrared spectroscopy methods were used to confirm the covalent functionalization. The percentage or number of groups in the outer shell was estimated with thermal gravimetric analysis. Finally, the potential applications of the functionalized CNOs as electrode materials in supercapacitors were evaluated by cyclic voltammetry and electrochemical impedance spectroscopy. Functionalization increased the specific capacitance by approximately 138% in comparison to that of the pristine CNOs, while acid-mediated oxidation reduced the specific capacitance of the nanomaterial by 24%.

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PMID = 26266148

Title = Assessment of the Presence of Carpal Tunnel Syndrome in Patients with Diabetes Mellitus, Hypothyroidism and Acromegaly.

Abstract = Carpal tunnel syndrome (CTS) is one of the most common entrapment neuropathies of the upper limbs. It results from compromised median nerve function of the wrist that is caused by increased pressure in the carpal tunnel. Repetitive use of the hand and wrist, obesity, pregnancy, rheumatoid diseases, trauma and endocrinopathies are some of the risk factors for CTS. The purpose of this study was to find out whether patients with diabetes mellitus (DM), hypothyroidism and acromegaly have an increased incidence of carpal tunnel syndrome compared to each other and normal population. Patients were assigned into three groups as follows: patients with type II DM n: 100, patients with hypothyroidism n:48 and patients with acromegaly n:36. In addition, 50 healthy individuals were included in the study as control subjects. Patients were asked if they had any pain, symptoms of paraesthesia and numbness. Patients with peripheral neuropathy were excluded from the study. Boston Symptom Severity Scale and Functional Capacity Scale were used to assess symptom severity and functional capacity. CTS was investigated by performing electrophysiological study for both hands. The incidence of CTS was significantly higher in all three groups compared to the control group ($p > 0.05$). In addition, the incidence of CTS was significantly higher in the DM group compared to the hypothyroid and acromegaly groups ($p < 0.001$). The incidence of bilateral CTS in the DM group was significantly higher compared to both hypothyroid and acromegaly groups and the control group ($p < 0.001$). CTS has a higher incidence in DM, hypothyroid and acromegaly patients compared to healthy individuals. Clinicians should be careful about development of CTS in DM, hypothyroidism and acromegaly. They should adopt a multidisciplinary approach and co-operate with the psychiatrist.

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PMID = 23510370

Title = Ectopic thyroid tissue in the adrenal gland: a report of two cases with pathogenetic implications.

Abstract = Ectopic thyroid tissue is usually found anywhere along the embryonic descent pathway of the medial thyroid anlage from the tongue to the trachea (Wölfler area). However, ectopic thyroid tissue in the adrenal gland (ETTAG) is not easy to understand on the basis of thyroid embryology; because it is so rare, the possibility of metastasis should first be considered. Here, we describe two cases of ETTAG with pathogenetic implications and review the associated literature. Two cases of ETTAG presented as incidental cystic adrenal masses in adult females, one having a congenital hernia of Morgagni. The ETTAG was histologically indistinguishable from normal orthotopic thyroid tissue, and its follicular nature was confirmed by immunohistochemical positivity for thyroglobulin, thyroperoxidase, thyroid transcription factor-1 (TTF-1/Titf-1/Nkx2.1), cytokeratin AE1/AE3, cytokeratin 7, pendrin, human sodium iodide symporter, paired box gene 8, and forkhead box E1 (TTF-2), as well as positivity for the messenger RNA of the thyroglobulin gene by in situ hybridization analysis.

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ysis. No C cells (negativity for calcitonin, chromogranin, and synaptophysin) were present. Neither BRAF nor KRAS mutations were detected with real-time polymerase chain reaction analysis. Further work-up did not show evidence of thyroid malignancy. ETAG is a rare finding, with only seven cases reported; women are much more frequently affected than men (8:1), and it usually presents in the fifth decade (mean age 54, range 38-67) as a cystic adrenal mass incidentally discovered on abdominal ultrasonography and/or in computed tomography images. ETAG is composed of normal follicular cells without C cells. The expression of some transcription factors (TTF-1, paired box gene 8, and FOXE1) involved in development and/or migration of the medial thyroid anlage is preserved. Coexistence of a congenital hernia of Morgagni in one patient suggests an overdescent of medial thyroid anlage-derived cells in its pathogenesis. Although ETAG pathogenesis remains unknown, the lack of C cells together with the coexistence of a congenital defect of the anterior diaphragm (hernia of Morgagni) in one of our patients could suggest an overdescent of medial thyroid anlage-derived cells in the origin of this heterotopia.

PMID = 29697376

Title = EFFICACY OF SILODOSIN (UROREC®) IN THE TREATMENT OF BENIGN PROSTATIC HYPERPLASIA: THE MAXIMUM DECREASE OF BLADDER OUTLET OBSTRUCTION INDEX.

Abstract = One of the main causes of lower urinary tract symptoms in men over the age of 40 years old is benign prostatic hyperplasia (BPH), which according to the research is detected in 26.2% of men of this age group. The purpose of this study was to evaluate the efficacy of the use of silodosin (Urorec®) at dosage 8 mg once a day for relief of obstructive symptoms of BPH in men over 40 years old. From September 2016 till December 2017 144 men (residents of Almaty, the Republic of Kazakhstan) aged from 56 to 81 years old (63.9 [95% CI: 63.2, 64.5]) were included into the study with a diagnosis of benign prostatic hyperplasia. Uroflowmetry (Qmax determination) was performed to all patients initially, after 7, 14, 30, 60 and 120 days from initiation of treatment. IPSS questionnaires were filled initially, after 30, 60 and 120 days from the start of treatment, and 21 men underwent a complex urodynamic study with determination of PdetQmax, Qmax and BOOI (at baseline and after 120 days). A significant decrease in bladder outlet obstruction index was observed with silodosin reception (Urorec®) 8 mg once daily (-28.8 [95% CI: -28.2, -29.5] or -44.5% [95% CI: -43.4%, -45.5%] (p < 0.001)), a decrease in IPSS scores after 30, 60 and 120 days from initiation of treatment (-6.3 [95% CI: -5.9, -6.7], -6.5 [95% CI: -6.1, -6.9], -6.8 [95% CI: -6.4, -7.2] respectively (p < 0.001)), an increase in Qmax after 7, 14, 30, 60 and 120 days from initiation of treatment (+1.1 mL/s [95% CI: 1.0 mL/s, 1.2 mL/s], +1.6 mL/s [95% CI: 1.5 mL/s, 1.7 mL/s], +2.4 mL/s [95% CI: 2.3 mL/s, 2.5 mL/s], +2.5 mL/s [95% CI: 2.4 mL/s, 2.6 mL/s], +2.5 mL/s [95% CI: 2.4 mL/s, 2.7 mL/s] respectively (p < 0.001)). The data obtained in the study allow us to recommend silodosin (Urorec®) at a dosage of 8 mg once a day as a first-line drug for the pathogenetic treatment of bladder outlet obstruction due to benign prostatic hyperplasia.

PMID = 34500313

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Title = Flow boiling heat transfer enhancement under ultrasound field in mini channel heat sinks.

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Abstract = The enhancement of the heat transfer assisted by ultrasound is considered to be an interesting and highly efficient cooling technology, but the investigation and application of ultrasound in minichannel heat sinks to strengthen the flow boiling heat transfer are very limited. Herein, a novel installation of ultrasound transducers in the flow direction of a minichannel heat sink is designed to experimentally study the characteristics of heat transfer in flow boiling and the influence of operation parameters (e.g., heat flux, mass flux rate) and ultrasound parameters (e.g., frequency, power) on the flow boiling heat transfer in a minichannel heat sink with and without ultrasound field. Bubble motion and flow pattern in the minichannel are analyzed by high-speed flow visualization, revealing that the ultrasound field induces more bubbles at the same observation position and a forward shift of the onset of nucleation boiling along the flow direction, as ultrasonic cavitation produces a large number of bubbles. Moreover, bubbles hitting the channel wall on the left and right sides are found, and the motion speed of the bubbles is increased by 31.9% under the ultrasound field. Our results demonstrate that the heat transfer coefficient obtained under the ultrasound field is 53.9% higher than in the absence of the ultrasound field under the same conditions, and the enhancement ratio is decreased in the high heat flux region due to the change of the flow regime with increasing heat flux. This study provides a theoretical basis for the application of an ultrasound field in minichannel heat sinks for the enhancement of flow boiling heat transfer.

PMID = 32567581

Title = COVID-19 in gastroenterology and hepatology: Living with the realities of a historic 21st century pandemic.

PMID = 30567915

Title = The Art of Peer Review.

PMID = 22799287

Title = Socio-demographic and behavioural risk factors for cervical cancer and knowledge, attitude and practice in rural and urban areas of North Bengal, India.

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Abstract = Cervical cancer is common among women worldwide. A multitude of risk factors aggravate the disease. This study was conducted to: (1) determine the prevalence and (2) make a comparative analysis of the socio-demographic and behavioural risk factors of cervical cancer and knowledge, attitude and practice between rural and urban women of North Bengal, India. Community-based cross-sectional study. A survey (first in North Bengal) was conducted among 133 women in a rural area (Kawakhali) and 88 women in an urban slum (Shaktigarh) using predesigned semi-structured questionnaires. The respondents were informed of the causes (including HPV), signs and symptoms, prevention of cervical cancer and treatment, and the procedure of the PAP test and HPV vaccination. The prevalence of risk factors like multiparity, early age of marriage, use of cloth during menstruation, use of condom and OCP, early age of first int

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ercourse was 37.2%, 82%, 83.3%, 5.4%, 15.8% and 65.6% respectively. Awareness about the cause, signs and symptoms, prevention of cervical cancer, PAP test and HPV vaccination was 3.6%, 6.3%, 3.6%, 9.5% and 14.5% respectively. Chi-square testing revealed that in the study population, significant differential at 5% exists between rural and urban residents with respect to number of children, use of cloth/sanitary napkins, family history of cancer and awareness regarding causes of cervical cancer. Regarding KAP, again using chi-square tests, surprisingly, level of education is found to be significant for each element of KAP in urban areas in contrast to complete absence of association between education and elements of KAP in rural areas. A large number of risk factors were present in both areas, the prevalence being higher in the rural areas. The level of awareness and role of education appears to be insignificant determinants in rural compared to urban areas. This pilot study needs to be followed up by large scale programmes to re-orient awareness campaigns, especially in rural areas.

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PMID = 27225618

Title = [Formula: see text]Working memory and attention in pediatric brain tumor patients treated with and without radiation therapy.

Abstract = Children are at risk for cognitive difficulties following the diagnosis and treatment of a brain tumor. Longitudinal studies have consistently demonstrated declines on measures of intellectual functioning, and recently it has been proposed that specific neurocognitive processes underlie these changes, including working memory, processing speed, and attention. However, a fine-grained examination of the affected neurocognitive processes is required to inform intervention efforts. Radiation therapy (RT) impacts white matter integrity, likely affecting those cognitive processes supported by distributed neural networks. This study examined working memory and attention in children during the early delayed stages of recovery following surgical resection and RT. The participants included 27 children diagnosed with pediatric brain tumor, treated with (n = 12) or without (n = 15) RT, who completed experimental and standardized measures of working memory and attention (n-back and digit span tasks). Children treated with radiation performed less well than those who did not receive radiation on the n-back measure, though performance at the 0-back level was considerably poorer than would be expected for both groups, perhaps suggesting difficulties with more basic processes such as vigilance. Along these lines, marginal differences were noted on digit span forward. The findings are discussed with respect to models of attention and working memory, and the interplay between the two.

PMID = 30393803

Title = Controlling crystal polymorphism of isotactic poly(1-butene) by incorporating long chain branches.

Abstract = Isotactic poly(1-butene) (iPB-1) is a high performance plastic with outstanding properties, such as flexibility, superior creep, environmental stress cracking and abrasive resistance. However, it exhibits a complex crystal polymorphism and polymorphic transformation behavior, which has limited it

s commercial development. In this paper, the incorporation of long chain branches (LCBs) causes coil contraction in the melt, which favors the direct melt-crystallization of form III that was generally crystallized from solutions and made of unconventional highly twined lamellae. Consequently, low-to-moderately branched iPB-1 samples as-crystallize from the melt into mixtures of form II and form III by compression-molding and fast cooling of the melt to room temperature, and the fraction of crystals of form III (fIII) increases with increasing concentration of LCBs, whereas highly branched samples can as-crystallize into pure form III with uniform crystal size distribution. The corresponding thermomechanical properties can be modified by controlling fIII.

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PMID = 34118640

Title = OXTR moderates adverse childhood experiences on depressive symptoms among incarcerated males.

Abstract = This study examined the moderation of an oxytocin receptor (OXTR) gene in the link between childhood adversity and depressive symptoms among incarcerated males. Questionnaires about adverse childhood experiences and depressive symptoms, as well as genomic DNA from blood were collected among 608 incarcerated males (M = 32.4 years, SD = 9.41, 18-74 years). Moderation analysis was applied to examine the interaction between adverse childhood experiences (including abuse, neglect, and household dysfunction) and the OXTR polymorphisms (rs2254298, rs53576) in predicting depressive symptoms. Incarcerated males had relatively higher prevalence of childhood adversity (70.2%) and depressive symptoms (49.8%). Higher childhood adversity was associated with increased depressive symptoms, and the effect was more pronounced in the GG homozygotes of OXTR rs2254298 ($b = 0.406$, $p < .001$), as compared with the AA/AG carriers ($b = 0.236$, $p < .001$). By contrast, the OXTR rs53576 did not interact with childhood adversity in predicting depressive symptoms. Chinese incarcerated males with the GG genotype of OXTR rs2254298 have higher vulnerability in the effect of childhood adversity on depressive symptoms.

PMID = 35350099

Title = Projecting National-Level Prevalence of General Obesity and Abdominal Obesity Among Chinese Adults With Aging Effects.

Abstract = To explore the impact of population aging on the projected prevalence of obesity among Chinese adults in 2030. In total, 71450 observations were extracted from the China Health and Nutrition Survey between 1991 and 2015. Population was projected to 2030 using a Bayesian hierarchical modeling method. Two different approaches were adopted to estimate and project the national prevalence of overweight/obesity from 1991 to 2030. One method assumed a constant population at the base year, while the other allowed the age and gender distributions vary in each year. Our projection indicated that approximately two-thirds of Chinese adults would be affected by overweight/general obesity in 2030, and more than 60% of Chinese adults will suffer from abdominal obesity in 2030. Ignoring population aging led to an underestimation of overweight, general obesity and abdominal obesity for women by 3.81, 0.06, and 3.16 percentage points (pp), and overweight and abdominal obesity among men by 1.67 a

nd 0.53 pp, respectively; but the prevalence of general obesity among men will be overestimated by 2.11 pp. Similar underestimations were detected in the estimation from 1991 to 2015. Estimating and projecting the national prevalence of obesity using a constant population structure at the base line would cause significant underestimation if countries are undergoing rapid population aging.

PMID = 22903951

Title = AWARE Ceftaroline Surveillance Program (2008-2010): trends in resistance patterns among *Streptococcus pneumoniae*, *Haemophilus influenzae*, and *Moraxella catarrhalis* in the United States.

Abstract = Ceftaroline fosamil, the prodrug form of the active metabolite ceftaroline, is a new broad-spectrum parenteral cephalosporin with antibacterial activity against the prevalent respiratory pathogens *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Moraxella catarrhalis*, and *Staphylococcus aureus*. Bacterial resistance surveillance (5330 isolates) was conducted in the United States between 2008 and 2010 to assess the in vitro activity of ceftaroline and comparator antibacterial agents against invasive respiratory isolates of *S. pneumoniae* (3329 isolates), *H. influenzae* (1545 isolates), and *M. catarrhalis* (456 isolates). All organisms were cultured from patient infections in 71 US hospital laboratories and were submitted to a central reference monitor for broth microdilution testing by Clinical and Laboratory Standards Institute reference methods. Against *S. pneumoniae*, ceftaroline inhibited 98.7% of strains at the susceptible breakpoint of ≤ 0.25 $\mu\text{g/mL}$ (50% minimum inhibitory concentration [MIC(50)], 0.01 $\mu\text{g/mL}$; 90% MIC [MIC(90)], 0.12 $\mu\text{g/mL}$) and was 16-fold more active than ceftriaxone (MIC(90), 2 $\mu\text{g/mL}$). Among 70 ceftriaxone-resistant pneumococcal isolates, all were inhibited by ≤ 0.5 $\mu\text{g/mL}$ of ceftaroline. *Haemophilus influenzae* (MIC(50), ≤ 0.008 $\mu\text{g/mL}$; MIC(90), 0.015 $\mu\text{g/mL}$) and *M. catarrhalis* (MIC(50), 0.06 $\mu\text{g/mL}$; MIC(90), 0.12 $\mu\text{g/mL}$) were very susceptible to ceftaroline regardless of β -lactamase production. Whereas the high-level of activity of ceftaroline was maintained against *S. pneumoniae* and *H. influenzae* from 2008 through 2010, increased rates of nonsusceptibility were observed for amoxicillin/clavulanate, erythromycin, and levofloxacin among *S. pneumoniae* and for trimethoprim/sulfamethoxazole and azithromycin among *H. influenzae*. In summary, ceftaroline resistance surveillance (Assessing Worldwide Antimicrobial Resistance Evaluation [AWARE] Program) in the United States (2008-2010) documented in vitro sustained potency and spectrum against Gram-positive and Gram-negative pathogens known to cause community-acquired bacterial pneumonia.

PMID = 20426819

Title = Encephalopathy associated with autoimmune thyroid disease in patients with Graves' disease: clinical manifestations, follow-up, and outcomes.

Abstract = The encephalopathy associated with autoimmune thyroid disease (EATD) is characterized by neurological/psychiatric symptoms, high levels of anti-thyroid antibodies, increased cerebrospinal fluid protein concentration, non-specific electroencephalogram abnormalities, and responsiveness to the cort

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icosteroid treatment in patients with an autoimmune thyroid disease. Almost all EAATD patients are affected by Hashimoto's thyroiditis (HT), although fourteen EAATD patients with Graves' disease (GD) have been also reported. We have recorded and analyzed the clinical, biological, radiological, and electrophysiological findings and the data on the therapeutic management of all GD patients with EAATD reported so far as well as the clinical outcomes in those followed-up in the long term. Twelve of the fourteen patients with EAATD and GD were women. The majority of GD patients with EAATD presented with mild hyperthyroidism at EAATD onset or shortly before it. Active anti-thyroid autoimmunity was detected in all cases. Most of the patients dramatically responded to corticosteroids. The long term clinical outcome was benign but EAATD can relapse, especially at the time of corticosteroid dose tapering or withdrawal. GD and HT patients with EAATD present with a similar clinical, biological, radiological, and electrophysiological picture and require an unaffected EAATD management. GD and HT equally represent the possible background condition for the development of EAATD, which should be considered in the differential diagnosis of all patients with encephalopathy of unknown origin and an autoimmune thyroid disease, regardless of the nature of the underlying autoimmune thyroid disease.

PMID = 29997114

Title = Tackling loneliness with a well stocked community.

PMID = 31776412

Title = A new source of root-knot nematode resistance from *Arachis stenosperma* incorporated into allotetraploid peanut (*Arachis hypogaea*).

Abstract = Root-knot nematode is a very destructive pathogen, to which most peanut cultivars are highly susceptible. Strong resistance is present in the wild diploid peanut relatives. Previously, QTLs controlling nematode resistance were identified on chromosomes A02, A04 and A09 of *Arachis stenosperma*. Here, to study the inheritance of these resistance alleles within the genetic background of tetraploid peanut, an F₂ population was developed from a cross between peanut and an induced allotetraploid that incorporated *A. stenosperma*, [*Arachis batizocoi* x *A. stenosperma*] 4x. This population was genotyped using a SNP array and phenotyped for nematode resistance. QTL analysis allowed us to verify the major-effect QTL on chromosome A02 and a secondary QTL on A09, each contributing to a percentage reduction in nematode multiplication up to 98.2%. These were validated in selected F₂:3 lines. The genome location of the large-effect QTL on A02 is rich in genes encoding TIR-NBS-LRR protein domains that are involved in plant defenses. We conclude that the strong resistance to RKN, derived from the diploid *A. stenosperma*, is transferrable and expressed in tetraploid peanut. Currently it is being used in breeding programs for introgressing a new source of nematode resistance and to widen the genetic basis of agronomically adapted peanut lines.

PMID = 24403067

Title = Decorin induces mitophagy in breast carcinoma cells via peroxisome pr

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oliferator-activated receptor γ coactivator-1 α (PGC-1 α) and mitostatin.

Abstract = Tumor cell mitochondria are key biosynthetic hubs that provide macromolecules for cancer progression and angiogenesis. Soluble decorin protein core, hereafter referred to as decorin, potentially attenuated mitochondrial respiratory complexes and mitochondrial DNA (mtDNA) in MDA-MB-231 breast carcinoma cells. We found a rapid and dynamic interplay between peroxisome proliferator-activated receptor γ coactivator-1 α (PGC-1 α) and the decorin-induced tumor suppressor gene, mitostatin. This interaction stabilized mitostatin mRNA with concurrent accumulation of mitostatin protein. In contrast, siRNA-mediated abrogation of PGC-1 α -blocked decorin-evoked stabilization of mitostatin. Mechanistically, PGC-1 α bound MITOSTATIN mRNA to achieve rapid stabilization. These processes were orchestrated by the decorin/Met axis, as blocking the Met-tyrosine kinase or knockdown of Met abrogated these responses. Furthermore, depletion of mitostatin blocked decorin- or rapamycin-evoked mitophagy, increased vascular endothelial growth factor A (VEGFA) production, and compromised decorin-evoked VEGFA suppression. Collectively, our findings underscore the complexity of PGC-1 α -mediated mitochondrial homeostasis and establish mitostatin as a key regulator of tumor cell mitophagy and angiostasis.

PMID = 38151665

Title = Message Framing Strategies to Promote the Uptake of PrEP: Results from Formative Research with Diverse Adult Populations in the United States.

Abstract = There are no evidence-based recommendations for communicating about pre-exposure prophylaxis (PrEP) as part of a broader HIV-prevention messaging approach. To inform future message development related to PrEP uptake, we interviewed 235 individuals across ten locations in the U.S. to explore their understanding and perceptions of draft HIV prevention messages and assess their overall preferences for a broad or PrEP-focused messaging approach. Participants responded favorably to and related to both draft messages. Participants who were not aware of PrEP were more likely to say the broad HIV-prevention message was personally relevant than those aware of PrEP. There were no significant differences in perceived personal relevance for the PrEP-focused message. Qualitative findings suggest that HIV prevention messages should use specific well-defined terms, include links to additional information, and use choice-enhancing language that emphasizes personal agency and frames the call to action as an informed decision among an array of effective prevention options.

PMID = 25063694

Title = Endovascular therapy of extracranial carotid artery pseudoaneurysms: case series and literature review.

Abstract = Experience with endovascular therapy of extracranial carotid artery pseudoaneurysm (ECAP) has been growing, and various results suggest it as a suitable treatment option. We present a consecutive case series of patients with ECAPs treated with endovascular therapy, and a pertinent literature review. A prospectively maintained database of neuroendovascular procedures was retrospectively reviewed for cases of ECAP treated between January 2007 and Dec

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ember 2012. The primary outcome of interest was incidence of periprocedural (within 30 days) neurologic and cardiopulmonary complications. PubMed was searched for relevant endovascular studies from 2000 to 2012 for the review. In our series, 12 patients with 14 ECAPs received stents, with or without coils. No perioperative neurologic or cardiopulmonary complications occurred. Median duration of clinical follow-up was 6.25 months (range 0-50 months), and median duration of imaging follow-up was 6.25 months (range 0-50 months), with eight patients asymptomatic and three showing improved symptoms (one patient with two lesions was lost to follow-up). Literature review revealed an overall primary outcome of 8.6% and no procedure related deaths. Endovascular treatment of ECAP is safe and effective at improving symptoms. There were no perioperative or permanent neurologic sequelae in the 11 patients with follow-up, and all symptomatology related to ECAP improved or resolved with treatment.

PMID = 31464071

Title = Patient-derived in vitro skin models for investigation of small fiber pathology.

Abstract = To establish individually expandable primary fibroblast and keratinocyte cultures from 3-mm skin punch biopsies for patient-derived in vitro skin models to investigate of small fiber pathology. We obtained 6-mm skin punch biopsies from the calf of two patients with small fiber neuropathy (SFN) and two healthy controls. One half (3 mm) was used for diagnostic intraepidermal nerve fiber density (IENFD). From the second half, we isolated and cultured fibroblasts and keratinocytes. Cells were used to generate patient-derived full-thickness three-dimensional (3D) skin models containing a dermal and epidermal component. Cells and skin models were characterized morphologically, immunocyto- and -histochemically (vimentin, cytokeratin (CK)-10, CK 14, ki67, collagen1, and procollagen), and by electrical impedance. Distal IENFD was reduced in the SFN patients (2 fibers/mm each), while IENFD was normal in the controls (8 fibers/mm, 7 fibers/mm). Two-dimensional (2D) cultured skin cells showed normal morphology, adequate viability, and proliferation, and expressed cell-specific markers without relevant difference between SFN patient and healthy control. Using 2D cultured fibroblasts and keratinocytes, we obtained subject-derived 3D skin models. Morphology of the 3D model was analogous to the respective skin biopsy specimens. Both, the dermal and the epidermal layer carried cell-specific markers and showed a homogenous expression of extracellular matrix proteins. Our protocol allows the generation of disease-specific 2D and 3D skin models, which can be used to investigate the cross-talk between skin cells and sensory neurons in small fiber pathology.

PMID = 27873496

Title = Ovarian Clear Cell Carcinoma Sub-Typing by ARID1A Expression.

Abstract = Loss of AT-rich DNA-interacting domain 1A (ARID1A) has been identified as a driving mutation of ovarian clear cell carcinoma (O-CCC), a triple-negative ovarian cancer that is intermediary between serous and endometrioid subtypes, in regards to molecular and clinical behaviors. However, about half of O-CCCs still express BAF250a, the protein encoded by ARID1A. Herein, we ai

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med to identify signatures of ARID1A-positive O-CCC in comparison with its ARID1A-negative counterpart. Seventy cases of O-CCC were included in this study. Histologic grades and patterns of primary tumor, molecular marker immunohistochemistry profiles, and clinical outcomes were analyzed. Forty-eight (69%) O-CCCs did not express BAF250a, which were designated as "ARID1A-negative." The other 22 (31%) O-CCCs were designated as "ARID1A-positive." ARID1A-positive tumors were more likely to be histologically of high grades (41% vs. 10%, $p=0.003$), ER β -positive (45% vs. 17%, $p=0.011$), and less likely to be HNF1 β -positive (77% vs. 96%, $p=0.016$) and E-cadherin-positive (59% vs. 83%, $p=0.028$) than ARID1A-negative tumors. Patient age, parity, tumor stage were not significantly different in between the two groups. Cancer-specific survival was not significantly different either. We classified O-CCCs according to ARID1A expression status. ARID1A-positive O-CCCs exhibited distinct immunohistochemical features from ARID1A-negative tumors, suggesting a different underlying molecular event during carcinogenesis.

PMID = 25923351

Title = Exploring the interactions of nanoparticles with multiple models of the maternal--fetal interface.

PMID = 30155160

Title = Tuneable mechanical and dynamical properties in the ferroelectric perovskite solid solution [NH₃NH₂] list(text = "1-", i = "x") [NH₃OH] list(i = "x") Zn(HCOO)₃.

Abstract = We report how mechanical and dynamical properties in formate-based perovskites can be manipulated by the preparation of an A-site solid-solution. In the series [NH₃NH₂] list(text = "1-", i = "x") [NH₃OH] list(i = "x") Zn(HCOO)₃ with x max = 0.48, the substitution of [NH₃NH₂] + by [NH₃OH] + is accompanied by a series of complex changes in crystal chemistry which are analysed using PXRD, SCXRD, ¹H solid state NMR, DSC and nanoindentation. NMR shows increased motion of [NH₃NH₂] + in [NH₃NH₂] 0.52 [NH₃OH] 0.48 Zn(HCOO)₃, which results in a shift of the ferroelectric-to-paraelectric phase transition temperature from $T_c = 352$ K ($x = 0$) to $T_c = 324$ K ($x = 0.48$). Additionally, the loss of hydrogen bonds directly influences the mechanical response of the framework; the elastic moduli and hardnesses decrease by around 25% from $E_{110} = 24.6$ GPa and $H_{110} = 1.25$ GPa for $x = 0$, to $E_{110} = 19.0$ GPa and $H_{110} = 0.97$ GPa for $x = 0.48$. Our results give an in-depth insight into the crystal chemistry of ABX₃ formate perovskites and highlight the important role of hydrogen bonding and dynamics.

PMID = 23111671

Title = Antipsychotic treatment response in schizophrenia.

Abstract = Research supporting the "early-onset" theory of antipsychotic activity is reviewed, with an emphasis on psychometric assessment of early response to antipsychotic agents as a tool for optimizing schizophrenia treatment outcomes. A growing body of evidence indicates that a poor response to antipsychotic therapy in the first weeks of schizophrenia treatment may justify a pr

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ompt switch to alternative medication in some cases. In placebo-controlled trials of both first- and second-generation antipsychotics, nonresponse at week 1 or 2, as determined with assessment instruments such as the Brief Psychiatric Rating Scale (BPRS) and the Positive and Negative Syndrome Scale (PANSS), was found highly predictive of nonresponse at week 4 or later; however, an early favorable response to a particular antipsychotic agent does not appear to be a similarly strong predictor of continued responsiveness. While the available evidence indicates that the BPRS, PANSS, and other scoring tools can be useful in guiding schizophrenia treatment decisions, it also emphasizes the importance of patient-specific factors (e.g., severity of illness at diagnosis, age at symptom onset, premorbid adolescent functioning) as determinants of both initial and longer-term antipsychotic response. The current evidence suggests that early nonresponse to antipsychotic treatment may predict subsequent non-response, though early response is not necessarily indicative of future response. If patients do not respond to treatment within the first two weeks of an acute exacerbation, clinicians (being cognizant of patient-specific factors) should consider switching antipsychotic agents, except in patients with first-episode psychosis, for whom a longer trial of the initially prescribed therapy appears to be appropriate.

PMID = 29953463

Title = Triclosan and triclocarban exposure, infectious disease symptoms and antibiotic prescription in infants-A community-based randomized intervention. Abstract = Triclosan and triclocarban (TCs) are broad-spectrum antimicrobials that, until recently, were found in a wide variety of household and personal wash products. Popular with consumers, TCs have not been shown to protect against infectious diseases. To determine whether use of TC-containing wash products reduces incidence of infection in children less than one year of age. Starting in 2011, we nested a randomized intervention of wash products with and without TCs within a multiethnic birth cohort. Maternal reports of infectious disease symptoms and antibiotic use were collected weekly by automated survey; household visits occurred every four months. Antibiotic prescriptions were identified by medical chart review. Urinary triclosan levels were measured in a participant subset. Differences by intervention group in reported infectious disease (primary outcome) and antibiotic use (secondary outcome) were assessed using mixed effects logistic regression and Fisher's Exact tests, respectively. Infectious illness occurred in 6% of weeks, with upper respiratory illness the predominant syndrome. Among 60 (45%) TC-exposed and 73 (55%) non-TC-exposed babies, infectious disease reports did not differ in frequency between groups (likelihood ratio test: $p = 0.88$). Medical visits with antibiotic prescriptions were less common in the TC group than in the non-TC group (7.8% vs. 16.6%, respectively; $p = 0.02$). Although randomization to TC-containing wash products was not associated with decreased infectious disease reports by mothers, TCs were associated with decreased antibiotic prescriptions, suggesting a benefit against bacterial infection. The recent removal of TCs from consumer wash products makes further elucidation of benefits and risks impracticable.

PMID = 27581842

Title = Small cisterno-lumbar gradient of phosphorylated Tau protein in geriatric patients with suspected normal pressure hydrocephalus.

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Abstract = The composition of the cerebrospinal fluid (CSF) is not homogeneous, and concentrations of proteins from different origins diverge among ventricular, cisternal and lumbar CSF fractions. Concentrations of blood-derived proteins increase and of brain-derived proteins decrease from ventricular to lumbar fractions. We studied whether the origin of the CSF portion analysed may affect results in CSF analysis for dementia. In 16 geriatric patients with suspected normal pressure hydrocephalus [age 82.5 (76/87) years; median (25th/75th percentile)] a lumbar spinal tap of 40 ml was performed. The CSF was sequentially collected in 8 fractions of 5 ml with the 1st fraction corresponding to lumbar CSF, the 8th to cisterna magna-near CSF. Fractions were analysed for total protein, albumin, Tau protein (Tau), phosphorylated Tau (pTau), Amyloid beta 1-42 (A β 1-42), Amyloid beta 1-40 (A β 1-40), and the A β 1-42/A β 1-40 ratio. The concentrations of total protein and albumin increased from cisternal to lumbar fractions due to diffusion-related accumulation from blood to CSF with significantly higher concentrations in fraction 1 compared to fraction 8. The concentrations of Tau showed a non-significant trend towards decreased values in lumbar samples, and pTau was slightly, but significantly decreased in the lumbar fraction 1 [26.5 (22.5/35.0) pg/ml] compared to the cistern-near fraction 8 [27.0 (24.2/36.3) pg/ml] ($p = 0.02$, Wilcoxon signed rank test). A β 1-42, A β 1-40, and the A β 1-42/A β 1-40 ratio remained almost constant. According to the flow-related diverging dynamics of blood-derived and brain-derived proteins in CSF, the concentrations of Tau and pTau tended to be lower in lumbar compared to cisternal CSF fractions after a spinal tap of 40 ml. The differences reached statistical significance for pTau only. The small differences will not affect clinical interpretation of markers of dementia in the vast majority of cases.

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PMID = 22347986

Title = Causes and imaging features of false positives and false negatives on F-PET/CT in oncologic imaging.

Abstract = BACKGROUND: 18F-FDG is a glucose analogue that is taken up by a wide range of malignancies. 18F-FDG PET-CT is now firmly established as an accurate method for the staging and restaging of various cancers. However, 18F-FDG also accumulates in normal tissue and other non-malignant conditions, and some malignancies do not take up 18F-FDG or have a low affinity for the tracer, leading to false-positive and false-negative interpretations. METHODS: PET-CT allows for the correlation of two separate imaging modalities, combining both morphological and metabolic information. We should use the CT to help interpret the PET findings. In this article we will highlight specific false-negative and false-positive findings that one should be aware of when interpreting oncology scans. RESULTS: We aim to highlight post-treatment conditions that are encountered routinely on restaging scans that can lead to false-positive interpretations. We will emphasise the importance of using the CT component to help recognise these entities to allow improved diagnostic accuracy. CONCL

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USION: In light of the increased use of PET-CT, it is important that nuclear medicine physicians and radiologists be aware of these conditions and correlate the PET and CT components to avoid misdiagnosis, over staging of disease and unnecessary biopsies.

PMID = 38236219

Title = Visual digital data, ethical challenges, and psychological science.

Abstract = Digital visual data afford psychologists with exciting research possibilities. It becomes possible to see real-life interactions in real time and to be able to analyze this behavior in a fine-grained and systematic manner. However, the fact that faces (and other personally identifying physical characteristics) are captured as part of these data sets means that this kind of data is at the highest level of sensitivity by default. When this is combined with the possibility of automatic collection and processing, then the sensitivity risks are compounded. Here we explore the ethical challenges that face psychologists wishing to take advantage of digital visual data. Specifically, we discuss ethical considerations around data acquisition, data analysis, data storage, and data sharing. We begin by considering the challenges of securing visual data from both public space security systems and social media sources. We then explore the dangers of bias and discrimination in automatic data processing, as well as the dangers to human analysts. We set out the ethical requirements for secure data storage, the dangers of "function creep," and the challenges of the right of the individual to withdraw from databases. Finally, we consider the tensions that exist between sensitive visual data that require extra protections and the recent open science movement, which advocates data transparency and sharing. We conclude by offering a practical roadmap for tackling these complex ethical issues in the form of a Privacy and Data Protection Impact Assessment template for researchers. (PsycInfo Database Record (c) 2024 APA, all rights reserved).

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PMID = 25889291

Title = Sexual behaviours of men who inject drugs in northeast India.

Abstract = Promoting safer sex behaviours among people who inject drugs is important as drug-using populations with high HIV prevalence can contribute to transition from a concentrated to a generalised epidemic. This study describes the sexual behaviours of men who inject drugs in two Northeast Indian states (Manipur and Nagaland) where HIV prevalence is high, with a focus on the HIV risks for their regular female sexual partners. Data were obtained from two cross-sectional surveys combined (N = 3,362)-both conducted in 2009 using respondent-driven sampling to recruit men who injected drugs. Both surveys asked about demographics, drug use, sexual and injecting risk behaviours, and interventions. One survey tested participants for HIV and syphilis. Statistical analyses included logistic regression modelling to predict inconsistent condom use with regular sexual partners. Two thirds of participants (68.2%) had a regular female sexual partner. Of these, 78.4% had sex with their regular partner in the last month, on average five times. Only 10.7% reported consistent condom use with regular partners. Unsafe injecting was common among men with r

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regular partners, and 40.2% had more than one sexual partner in the last year. Half of those with regular partners (51.0%) had never had an HIV test, and 14.3% of those tested were HIV positive. After controlling for confounding, inconsistent condom use with regular partners was associated with being illiterate, married, sharing needle and syringe with others, never having had an HIV test and not receiving condoms from an NGO. The findings from this study among men who inject drugs in Manipur and Nagaland highlight the risk of HIV infection for their regular female sexual partners. Promoting better uptake of HIV testing among men who inject drugs will potentially benefit both them and their regular partners. While effectively reaching regular partners is challenging, a number of strategies for improving their situation in relation to HIV prevention are available.

PMID = 22428439

Title = "I've heard some things that scare me". Responding with empathy to parents' fears of vaccinations.

Abstract = The Lancet's 1998 publication of "Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children" by Andrew Wakefield, et. al., positing a causal relationship between MMR vaccine and autism in children, set off a media storm and galvanized the anti-vaccine movement. In this paper, centuries-old fears of vaccination and the history of autism as a medical diagnosis are considered, and an affective, family-centered approach to dealing with parental fears by physicians is proposed.

PMID = 33598358

Title = Reoperation for recurrent glioblastomas: What to expect?

Abstract = The current standard treatment for glioblastoma (GBM) is maximal safe surgical resection followed by radiation and chemotherapy. Unfortunately, the disease will invariably recur even with the best treatment. Although the literature suggests some advantages in reoperating patients harboring GBM, controversy remains. Here, we asked whether reoperation is an efficacious treatment strategy for GBM, and under which circumstances, it confers a better prognosis. We retrospectively reviewed 286 consecutive cases of newly diagnosed GBM in a single university hospital from 2008 to 2015. We evaluated clinical and epidemiological parameters possibly influencing overall survival (OS) by multivariate Cox regression analysis. OS was calculated using the Kaplan-Meier method in patients submitted to one or two surgical procedures. Finally, the survival curves were fitted with the Weibull model, and survival rates at 6, 12, and 24 months were estimated. The reoperated group survived significantly longer ($n = 63$, OS = 20.0 ± 2.3 vs. 11.4 ± 1.0 months, $p < 0.0001$). Second, the multivariate analysis revealed an association between survival and number of surgeries, initial Karnofsky Performance Status, and age (all $p < 0.001$). Survival estimates according to the Weibull regression model revealed higher survival probabilities for reoperation compared with one operation at 6 months (83.74 ± 3.42 vs. 63.56 ± 3.59 , respectively), 12 months (64.00 ± 4.85 vs. 37.53 ± 3.52), and 24 months (32.53 ± 4.78 vs. 12.02 ± 2.36). Our data support the indication of reoperation for GBM, especially for younger patients with g

ood functional status. Under these circumstances, survival can be doubled at 12 and 24 months.

PMID = 25527886

Title = Strategies to minimize complications during intraoperative aneurysmal hemorrhage: a personal experience.

Abstract = The occurrence of intraoperative rupture (IOR) of an aneurysm is one of the most precarious moments in microsurgery, and the management of IOR profoundly affects operative outcomes. The authors describe their personal experiences during the past decade with managing intraoperative aneurysm rupture for microsurgical treatment of complex cerebral aneurysm procedures. Steps to avoid and manage IOR depend on the stage of the operation or phase of dissection and on aneurysm location and configuration. The point at which IOR occurs dictates the management options available. The rupture of the aneurysm itself usually does not cause death or disability, but the subsequent actions performed by the surgeon can make the difference between a good and poor outcome. Major complications are caused by the surgeon's premature reaction placing a permanent clip in the face of torrential bleeding without adequate visualization, leading to vascular and cranial nerve injuries. Short videos are provided to illustrate the technical nuances to minimize complications. Accurate knowledge of the anatomy of the aneurysm and surrounding vasculature is the keystone to prevention and treatment of IOR. Most importantly, the surgeon must not rush prematurely to apply a permanent clip blindly in an effort to stop the hemorrhage.

PMID = 25750131

Title = Comparison of the pre-shaped anatomical locking plate of 3.5 mm versus 4.5 mm for the treatment of tibial plateau fractures.

Abstract = Treatment of tibial plateau fractures is discussed. A retrospective comparative study of fractures treated with an anatomical locking plate of 4.5 mm or 3.5 mm. Our hypothesis is that the 3.5 mm plates give an equivalent hold of fractures with comparable results and better clinical tolerance. From May 2010 to October 2011, 18 patients were operated on using a 4.5-mm LCP™ anatomical plate (group A) and 20 patients received a 3.5-mm LCP™ anatomical plate (group B). Groups were comparable. One fracture was open. For the Group A, 14 patients had a follow up of 35.3 months and for the Group B, 16 patients had a follow up of 27 months. Mobility was comparable in both groups. The Hospital for Special Surgery (HSS) score was 86.4 versus 80.6, the Lysholm score was 83.6 versus 77 for groups A and B respectively. Consolidation was 3.25 months versus 3.35 months and mean axis was 183.1° versus 181.6° for groups A and B. Mechanical axes during revision were statistically different to the controlateral axes. One secondary displacement was noted in group A and one secondary displacement in group B. Group A had eight patients reporting discomfort with the material versus three in group B ($p < 0.05$). The hypothesis is proven. In regards to the results, there is no significant difference between the two groups but the clinical tolerance was better in group B. More time is needed in the long term to better evaluate these severe fractures.

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PMID = 26355880

Title = Evaluation of two human dental pulp stem cell cryopreservation methods.

Abstract = Dental pulp is a promising source of mesenchymal stem cells for use in cell therapy and regenerative medicine. Methods for storing stem cells with minimum compromise of cell viability, differentiation capacity and function should be developed for clinical and research applications. The aim of this study was to evaluate whether human dental pulp stem cells (hDPSCs) isolated and cryopreserved for 1, 7 and 30 days maintain viability and expression of specific stem cell markers. Human dental pulp stem cells were isolated from 23 healthy patients aged 18 to 31 years. Dental pulp was enzymatically dissociated, and CD105+ cells were separated using the Miltenyi™ system. The hDPSCs were cryopreserved using the Kamath and Papaccio methods. Post-cryopreservation viability was measured by flow cytometry (7AAD) and by the expression of the phenotype markers CD105+/CD73+, CD34-/CD45-. The Papaccio method showed greater cell viability for cells that had been frozen for 30 days (59.5%) than the Kamath method (56.2%), while the Kamath method provided better results for 1 day (65.5%) and 7 days (56%). Post-cryopreservation expression of the markers CD105+/CD34- was greater after 1 and 7 days with the Kamath method and CD105+/CD45- were expressed after all 3 cryopreservation times. There was greater expression of CD73+ in the hDPSCs after 1 and 7 days with the Kamath method, and after 30 days with the Papaccio method. These results suggest that hDPSCs express mesenchymal stem cell markers after cryopreservation. However, cryopreservation time may affect marker expression, probably by altering the spatial configuration of cell membrane proteins or by compromising cells at a certain level of differentiation.

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PMID = 23970036

Title = Impact of site-directed mutant luciferase on quantitative green and orange/red emission intensities in firefly bioluminescence.

Abstract = Firefly bioluminescence has attracted great interest because of its high quantum yield and intriguing modifiable colours. Modifications to the structure of the enzyme luciferase can change the emission colour of firefly bioluminescence, and the mechanism of the colour change has been intensively studied by biochemists, structural biologists, optical physicists, and quantum-chemistry theorists. Here, we report on the quantitative spectra of firefly bioluminescence catalysed by wild-type and four site-directed mutant luciferases. While the mutation caused different emission spectra, the spectra differed only in the intensity of the green component ($\lambda_{\text{max}} \sim 560 \text{ nm}$). In contrast, the orange ($\lambda_{\text{max}} \sim 610 \text{ nm}$) and red ($\lambda_{\text{max}} \sim 650 \text{ nm}$) components present in all the spectra were almost unaffected by the modifications to the luciferases and changes in pH. Our results reveal that the intensity of the green component is the unique factor that is influenced by the luciferase structure and other reaction conditions.

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PMID = 31603477

Title = Dural Extranodal Marginal Zone Lymphoma in an XRCC2 Mutation Carrier.
Abstract = Dural extranodal marginal zone lymphoma of mucosa-associated lymphoid tissue (MALT lymphoma) is a rare entity without an associated recurrent genetic abnormality. Only one case has been described in a woman with history of breast carcinoma without a known genetic predisposition. Here, we report a case of a 56-year-old woman heterozygous for XRCC2 mutation with a history of Graves' disease and bilateral breast carcinomas, who was found to have a diffusely infiltrative extra-axial mass in the high parietal convexity with infiltration into the adjacent superior sagittal sinus. The morphologic, immunophenotypic, and molecular findings were diagnostic of MALT lymphoma. Staging bone marrow demonstrated involvement by the neoplasm. Although the study was limited to only the clinically significant laboratory evaluation, it may serve as an important addition to the current knowledge of the pathogenic potential of a loss of function mutation in this rarely reported cancer predisposition gene.

PMID = 36015372

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Title = Enhanced Ocular Anti-Aspergillus Activity of Tolnaftate Employing Novel Cosolvent-Modified Spanlastics: Formulation, Statistical Optimization, Kill Kinetics, Ex Vivo Trans-Corneal Permeation, In Vivo Histopathological and Susceptibility Study.

Abstract = Tolnaftate (TOL) is a thiocarbamate fungicidal drug used topically in the form of creams and ointments. No ocular formulations of TOL are available for fungal keratitis (FK) treatment due to its poor water solubility and unique ocular barriers. Therefore, this study aimed at developing novel modified spanlastics by modulating spanlastics composition using different glycols for enhancing TOL ocular delivery. To achieve this goal, TOL basic spanlastics were prepared by ethanol injection method using a full 3² factorial design. By applying the desirability function, the optimal formula (BS6) was selected and used as a nucleus for preparing and optimizing TOL-cosolvent spanlastics according to the full 3¹.2¹ factorial design. The optimal formula (MS6) was prepared using 30% propylene glycol and showed entrapment efficiency percent (EE%) of 66.10 ± 0.57%, particle size (PS) of 231.20 ± 0.141 nm, and zeta potential (ZP) of -32.15 ± 0.07 mV. MS6 was compared to BS6 and both nanovesicles significantly increased the corneal permeation potential of TOL than drug suspension. Additionally, in vivo histopathological experiment was accomplished and confirmed the tolerability of MS6 for ocular use. The fungal susceptibility testing using *Aspergillus niger* confirmed that MS6 displayed more durable growth inhibition than drug suspension. Therefore, MS6 can be a promising option for enhanced TOL ocular delivery.

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PMID = 37524105

Title = Transadaptation and Validation of the Telugu Version of the Dysphagia Handicap Index.

Abstract = Dysphagia Handicap Index (DHI) is a clinically effective, concise, and user-friendly tool for assessing the functional impact of dysphagia in cl

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inical populations. The present study aims to trans-adapt the DHI in the Telugu language and assesses its psychometric properties. The present study was conducted in two phases. The first phase includes translating and adapting the DHI tool into Telugu (T-DHI). The second phase includes an analysis of the psychometric properties of the trans-adapted Telugu version of the DHI. The DHI was translated into the Telugu language using the forward-backward translation method. The psychometric analysis was done on 100 participants. All the participants underwent a detailed clinical swallow examination after filling the T-DHI. The overall internal consistency and Guttman split-half reliability for the Telugu version of the DHI were good. The correlation between the T-DHI subscales and the self-perceived severity of dysphagia was found to be high. The comparison of the T-DHI scores of the control and experimental groups revealed a significant difference. The T-DHI is a reliable and valid tool to assess the quality of life of the Telugu-speaking dysphagia population.

PMID = 38031407

Title = Physiological measures of operators' mental state in supervisory process control tasks: a scoping review.

Abstract = Physiological measures are often used to assess the mental state of human operators in supervisory process control tasks. However, the diversity of research approaches creates a heterogeneous landscape of empirical evidence. To map existing evidence and provide guidance to researchers and practitioners, this paper systematically reviews 109 empirical studies that report relationships between peripheral nervous system measures and mental state dimensions (e.g. mental workload, mental fatigue, stress, and vigilance) of interest. Ocular and electrocardiac measures were the most prominent measures across application fields. Most studies sought to validate such measures for reliable assessments of cognitive task demands and time on task, with measures of pupil size receiving the most empirical support. In comparison, less research examined the utility of physiological measures in predicting human task performance. This approach is discussed as an opportunity to focus on operators' individual response to cognitive task demands and to advance the state of research.

PMID = 32459746

Title = GOT MILK-ish?

PMID = 31948320

Title = Did Arkansas' Medicaid Patient-Centered Medical Home Program Have Spillover Effects on Commercially Insured Enrollees?

Abstract = Patient-centered medical homes are increasingly being implemented by state Medicaid programs to incentivize high-quality, coordinated care and ultimately lower health care spending. This study examined whether the Arkansas Medicaid Patient-Centered Medical Home Program's practice-wide transformation activities had spillover effects on commercial beneficiaries. We used difference-in-differences to compare utilization and expenditures of commercially insured enrollees as their practices received Medicaid patient-centered med

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ical home certification on a rolling basis between 2014 and 2016. We found a 5.7% increase in outpatient visits and 13% higher expenditures among early adopting practices. Even without associated reductions in costly emergency department visits or inpatient hospital admissions, decisionmakers should not lose sight of the potential value of increased engagement in and coordination of professional services for a population with high unmet health needs. Our results also emphasize that states can leverage Medicaid to spur system-wide transformation, and the investments generate spillover effects beyond those covered directly by Medicaid.

PMID = 27559957

Title = The prevalence of carotid plaque with different stability and its association with metabolic syndrome in China: The Asymptomatic Polyvascular Abnormalities Community study.

Abstract = Few studies have investigated the prevalence of carotid plaque with different stability in Chinese. As is well known, carotid atherosclerosis is tightly associated with metabolic syndrome (MetS); however, the data about the association between the presence of carotid plaque with different stability and MetS was limited. The aim of our study was to investigate the prevalence of carotid plaque with different stability and its potential association with MetS in general Chinese population. The Asymptomatic Polyvascular Abnormalities Community study is a community-based study to investigate the epidemiology of asymptomatic polyvascular abnormalities in Chinese adults. A total of 5393 participants were finally eligible and included in this study. The carotid plaque and its stability were assessed using ultrasonography. The MetS was defined using the criteria from US National Cholesterol Education Program-Adult Treatment Panel III. Data were analyzed with multivariate logistic regression models. Of the 5393 subjects, 1397 (25.9%) participants had stable carotid plaque, 1518 (28.1%) had unstable carotid plaque in participants, and 1456 (27.0%) had a MetS. MetS was, respectively, significantly associated with the prevalence of carotid plaque (odds ratio [OR]: 1.25; 95% confidence interval [CI]: 1.07, 1.47), stable carotid plaque (OR: 1.23; 95% CI: 1.02, 1.48), and unstable carotid plaque (OR: 1.27; 95% CI: 1.03, 1.56) after adjusting for age, gender, level of education, income, smoking, drinking, physical activity, body mass index, low-density lipoprotein, and high-sensitivity C-reactive protein. With the number of MetS components, the prevalence of carotid plaque, stable carotid plaque, and unstable carotid plaque significantly increased (P for trend <0.0001), respectively. In summary, the prevalence of carotid plaque was 54.1%, stable carotid plaque was 25.9%, and unstable carotid plaque was 28.1%. Our study revealed that the prevalence of carotid plaque, stable carotid plaque, and unstable carotid plaque was, respectively, significantly associated with MetS in the general population.

PMID = 26191726

Title = Fibre optic surface plasmon resonance sensor system designed for smartphones.

Abstract = A fibre optic surface plasmon resonance (SPR) sensor system for sm

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artphones is reported, for the first time. The sensor was fabricated by using an easy-to-implement silver coating technique and by polishing both ends of a 400 µm optical fibre to obtain 45° end-faces. For excitation and interrogation of the SPR sensor system the flash-light and camera at the back side of the smartphone were employed, respectively. Consequently, no external electrical components are required for the operation of the sensor system developed. In a first application example a refractive index sensor was realised. The performance of the SPR sensor system was demonstrated by using different volume concentrations of glycerol solution. A sensitivity of $5.96 \cdot 10^{-4}$ refractive index units (RIU)/pixel was obtained for a refractive index (RI) range from 1.33 to 1.36. In future implementations the reported sensor system could be integrated in a cover of a smartphone or used as a low-cost, portable point-of-care diagnostic platform. Consequently it offers the potential of monitoring a large variety of environmental or point-of-care parameters in combination with smartphones.

PMID = 31695028

Title = An engineered human Fc domain that behaves like a pH-toggle switch for ultra-long circulation persistence.

Abstract = The pharmacokinetic properties of antibodies are largely dictated by the pH-dependent binding of the IgG fragment crystallizable (Fc) domain to the human neonatal Fc receptor (hFcRn). Engineered Fc domains that confer a longer circulation half-life by virtue of more favorable pH-dependent binding to hFcRn are of great therapeutic interest. Here we developed a pH Toggle switch Fc variant containing the L309D/Q311H/N434S (DHS) substitutions, which exhibits markedly improved pharmacokinetics relative to both native IgG1 and widely used half-life extension variants, both in conventional hFcRn transgenic mice and in new knock-in mouse strains. engineered specifically to recapitulate all the key processes relevant to human antibody persistence in circulation, namely: (i) physiological expression of hFcRn, (ii) the impact of hFcγRs on antibody clearance and (iii) the role of competing endogenous IgG. DHS-IgG retains intact effector functions, which are important for the clearance of target pathogenic cells and also has favorable developability.

PMID = 26228912

Title = Fingerprint analysis, multi-component quantitation, and antioxidant activity for the quality evaluation of *Salvia miltiorrhiza* var. alba by high-performance liquid chromatography and chemometrics.

Abstract = *Salvia miltiorrhiza* Bge. var. alba C.Y. Wu and H.W. Li has wide prospects in clinical practice. A useful comprehensive method was developed for the quality evaluation of *S. miltiorrhiza* var. alba by three quantitative parameters: high-performance liquid chromatography fingerprint, ten-component contents, and antioxidant activity. The established method was validated for linearity, precision, repeatability, stability, and recovery. Principal components analysis and hierarchical clustering analysis were both used to evaluate the quality of the samples from different origins. The results showed that there were category discrepancies in quality of *S. miltiorrhiza* var. alba samples.

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es according to the three quantitative parameters. Multivariate linear regression was adopted to explore the relationship between components and antioxidant activity. Three constituents, namely, danshensu, rosmarinic acid, and salvianolic acid B, significantly correlated with antioxidant activity, and were successfully elucidated by the optimized multivariate linear regression model. The combined use of high-performance liquid chromatography fingerprint analysis, simultaneous multicomponent quantitative analysis, and antioxidant activity for the quality evaluation of *S. miltiorrhiza* var. *alba* is a reliable, comprehensive, and promising approach, which might provide a valuable reference for other herbal products in general to improve their quality control.

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PMID = 24593846

Title = Upregulation of microRNA-25 associates with prognosis in hepatocellular carcinoma.

Abstract = Accumulating evidence has shown that up-regulation of microRNA-25 (miR-25) is associated with the prognosis of several types of human malignant solid tumors. However, whether miR-25 expression has influence on the prognosis of hepatocellular carcinoma (HCC) is still unknown. The differentially expressed amount of the miR-25 was validated in triplicate by quantitative reverse-transcription polymerase chain reaction (qRT-PCR). Survival rate was analyzed by log-rank test, and survival curves were plotted according to Kaplan-Meier. Multivariate analysis of the prognostic factors was performed with Cox regression model. The expression of miR-25 was significantly upregulated in HCC tissues when compared with adjacent normal tissues ($p < 0.0001$). Patients who had high miR-25 expression had a shorter overall survival than patients who had low miR-25 expression (median overall survival, 31.0 months versus 42.9 months, $p = 0.0192$). The multivariate Cox regression analysis indicated that miR-25 expression (HR=2.179; $p = 0.001$), TNM stage (HR=1.782; $p = 0.014$), and vein invasion (HR=1.624; $p = 0.020$) were independent prognostic factors for overall survival. Our data suggests that the overexpression of miR-25 in HCC tissues is of predictive value on poor prognosis. The virtual slide(s) for this article can be found here: <http://www.diagnosticpathology.diagnomx.eu/vs/1989618421114309>.

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PMID = 32275041

Title = Erector spinae plane block using clonidine as an adjuvant for excision of chest wall tumor in a pediatric patient.

Abstract = Erector spinae plane block has been described to manage post-thoracotomy pain. It is a simple block and shown to be provide effective analgesia. In single shot blocks opioid supplementation may be required to manage pain after the effect of local anesthetic wears off. In this case, we describe a case of chest wall tumor excision in a child who received clonidine in addition to local anesthetic for the erector spinae plane block. This provided long lasting and effective postoperative analgesia and may be considered to prolong the analgesia achieved with erector spinae plane block.

PMID = 39153241

Title = Dual-element substitution induced integrated defect structure to suppress voltage decay and capacity fading of Li-rich Mn-based cathode.

Abstract = Li-rich manganese-based oxide (LRMO) is considered one of the most promising cathode materials for next-generation lithium-ion batteries due to its high energy density. However, many issues need to be addressed before its large-scale commercialization, including significant voltage decay and capacity fading. Herein, a Sn /Na co-doping induced integrated defect structure (oxygen vacancies, stacking faults, and surface spinel phase) strategy is proposed to suppress the voltage decay and enhance the cycling performance of LRMO. The integrated surface defect structures have significantly favorable effects on the LRMO, where the oxygen vacancies remove surface labile oxygen and suppress surface oxygen release, the induced stacking faults alleviate the stress accumulation during cycling, the surface spinel phase promotes the Li diffusion and prevents the outward migration of cations, and the co-doped Sn /Na stabilize the layered structure. As a result, the modified sample Na_{0.9}Sn_{0.1}O₂ (NSO-1) achieves excellent cycling performance (capacity of 207 mAh/g and capacity retention of 96.71 % after 100 cycles at 0.5C) and a smaller voltage decay (less than 1.5 mV per cycle) compared with the unmodified LRMO. This work provides a new valuable strategy to suppress capacity fading and voltage decay of LRMO through dual-element substitution induced surface defect engineering.

PMID = 22287624

Title = Crystal structure of a c-kit promoter quadruplex reveals the structural role of metal ions and water molecules in maintaining loop conformation.

Abstract = We report here the 1.62 Å crystal structure of an intramolecular quadruplex DNA formed from a sequence in the promoter region of the c-kit gene. This is the first reported crystal structure of a promoter quadruplex and the first observation of localized magnesium ions in a quadruplex structure. The structure reveals that potassium and magnesium ions have an unexpected yet significant structural role in stabilizing particular quadruplex loops and grooves that is distinct from but in addition to the role of potassium ions in the ion channel at the centre of all quadruplex structures. The analysis also shows how ions cluster together with structured water molecules to stabilize the quadruplex arrangement. This particular quadruplex has been previously studied by NMR methods, and the present X-ray structure is in accord with the earlier topology assignment. However, as well as the observations of potassium and magnesium ions, the crystal structure has revealed a highly significant difference in the dimensions of the large cleft in the structure, which is a plausible target for small molecules. This difference can be understood by the stabilizing role of structured water networks.

PMID = 39475531

Title = Green and Fast Synthesis of NiCo-MOF for Simultaneous Purification-Immobilization of Bifunctional Enzyme to Catalyze the Synthesis of Ginsenoside Rh2.

Abstract = Traditional metal-organic frameworks (MOFs) preparation is generally time-consuming, polluting, and lacking specificity for enzyme immobilization.

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on. This paper introduced a facile, rapid, and green method to produce three MOFs subsequently employed to purify and coimmobilize recombinant glycosyltransferase (UGT) and recombinant sucrose synthetase (SUSy) using histidine tag (His-tag) for the specific adsorption of Ni²⁺ and Co²⁺ from MOFs. This method simplified enzyme purification from crude extracts and enabled enzymes to be reused. The results demonstrated that NiCo-MOF exhibited a higher enzyme load (115.9 mg/g) than monometallic MOFs. Additionally, the NiCo-MOF@UGT&SUSy demonstrated excellent stability and efficiently produced the rare ginsenoside Rh2 by catalyzing a coupling reaction (95.6 µg/mL), solving the problem of the substrate cost of uridine diphosphate glucose (UDPG). The NiCo-MOF@UGT&SUSy retained 68.97% of the initial activity after 10 cycles. Finally, molecular docking studies elucidated the conversion mechanism of the target product Rh2. This technique is important in the industrialization of ginsenoside production and enzyme purification.

PMID = 18544248

Title = Acute basilar artery occlusion: topographic study of infarcts.

Abstract = To determine the ischemic lesions distribution and extension of patients with basilar artery thrombosis by the means of magnetic resonance imaging (MRI). In 17 patients with thrombosis of the basilar artery, MRI was performed, including T2-weighted, magnetic resonance angiography (MRA) and diffusion-weighted imaging (DWI) sequences in the short-term phase (<48 hours). The shapes of ischemic lesions were obtained by graphic software and overlapped on a representative layer outline background. The MRA showed basilar artery occlusion in all cases and the DWI revealed different patterns of ischemic lesions. Most patients showed multiple lesions within the posterior circulation territory. Lesions more often occurred in pons, cerebellums and mesencephalons than medullas, thalami and occipital lobes. Basilar pons, cerebral crus and cerebellum hemisphere were more susceptible than pontine tegmentum, vermis, midbrain tegmentum and tectum. When the basilar artery is occluded, basilar pons, cerebral crus and cerebellum hemisphere were most susceptible. The branches with smaller lumen of basilar artery, which are easier to be affected, are thought to be the cause of such a phenomenon.

PMID = 30308113

Title = Porous and nonporous silk fibroin (SF) membranes wrapping for Achilles tendon (AT) repair: Which one is a better choice?

Abstract = Two types of silk fibroin (SF) membranes were developed for tendon repair: porous and nonporous SF membranes. The objective of this study was to compare the efficiency of these two films according to the ability of tendon regeneration using a rat Achilles tendon (AT) rupture suture wrapping model. The in vitro tests were conducted, and the SF membranes were proved to be with ultimate-biodegradability, good-biocompatibility and without toxicity. In vivo, 12 Sprague Dawley rats were used to create a rat AT rupture suture model wrapped by SF membranes. They were randomly divided into six groups. The results revealed that the nonporous SF membrane wrapping group was shown to reduce the inflammatory effect and induce the proliferation of fibroblast-like cells

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Commented [AB102]: Acronym

Commented [AB103]: symbol

Commented [AB104]: Medical word

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at one week and four weeks post-operatively. After four weeks, the nonporous SF membrane wrapping group exhibited more organized collagen structures and had increased expression of tendon repair proteins. Hence, our nonporous SF membrane improved the efficacy of tendon regeneration by decreasing inflammatory cells, growing fibroblast-like cells, and promoting extracellular matrix production. Nonporous SF membrane can, therefore, be regarded as a better functional membrane for tendon repair. © 2018 Wiley Periodicals, Inc. J Biomed Mater Res Part B: 00B: 000-000, 2018. © 2018 Wiley Periodicals, Inc. J Biomed Mater Res Part B: Appl Biomater 107B: 733-740, 2019.

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PMID = 34163214

Title = Mitochondrial Dynamics Related Genes - MFN1, MFN2 and DRP1 Polymorphisms are Associated with Risk of Lung Cancer.

Abstract = This study aimed to evaluate the associations between mitochondrial dynamics related genes - and polymorphisms and risk of lung cancer. Six polymorphisms of and were genotyped in 600 cases and 600 controls using a MassARRAY platform. The rs13098637-C and rs879255689-A alleles were associated with an increased risk of lung cancer ($=0.004$, $=0.005$), while rs4240897-A and rs2236058-G were related to a decreased risk of disease (<0.001). The rs13098637-TC/CC and rs879255689-GA/AA were determined as risk genotypes for lung cancer ($=0.014$, $=0.013$), whereas the rs4240897-GA/AA and rs2236058-GG were identified as protective genotypes against lung cancer risk (<0.001). Genetic model analysis showed that rs13098637 was correlated with an elevated risk of lung cancer in dominant and log-additive models ($=0.007$, $=0.004$). Moreover, rs879255689 was associated with an increased risk of disease in all three models ($=0.014$, $=0.028$, $=0.005$). In contrast, rs4240897 and rs2236058 were related to reduced risk of disease in all three models (rs4240897: <0.001 ; rs2236058: $=0.008$, <0.001 , <0.001). In addition, these associations were related to the smoking status and pathological type of lung cancer patients. These results shed new light on the association between mitochondrial dynamics related genes and risk of lung cancer.

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PMID = 29360491

Title = Long-term implant performance and patients' satisfaction in oligodontia.

Abstract = To assess long-term (≥ 10 years) implant survival, peri-implant health, patients' satisfaction and oral health related quality of life (OHQoL) in oligodontia patients rehabilitated with implant-based fixed prosthodontics. All oligodontia patients treated ≥ 10 years previously with implant-based fixed prosthodontics at the University Medical Center Groningen, The Netherlands, were approached to participate. Clinical (plaque index, bleeding index, pocket probing depth) and radiographic (marginal bone level) data were collected between February and May 2016. Surgical implant details (e.g., bone augmentation) and implant loss were recalled from the medical records. Patients completed a satisfaction questionnaire (maximum score 10, high score favourable satisfaction) and the Oral Health Impact Profile (OHIP-NL49, maximum score 196, low score favourable satisfaction) to rate OHQoL. Implant survival was expressed

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ed according to Kaplan Meier. The Mann-Whitney U Test was used for the other analyses. Forty-one patients had been treated with implant-based fixed prosthodontics (n = 258) ≥ 10 years previously. Cumulative 10-year implant survival of these 41 patients was 89.1% (95%CI 85.2-93.0%). Twenty-eight of them (n = 163 implants) were willing to visit us for additional clinical and radiographic assessments. In these 28 patients, highest peri-implant bone loss was observed for implants placed in augmented bone ($p < 0.001$). Peri-implant mucositis (65.4%) and peri-implantitis (16.1%) were rather common. Patients' satisfaction (8.3 ± 1.5) and OHIP-NL49 scores (32.6 ± 30.1) were favourable and not associated with number of agenetic teeth (≤ 10 versus > 10). Long-term survival, satisfaction and OHQoL results reveal that implant treatment is a predictable and satisfactory treatment modality for oligodontia, although peri-implant mucositis and peri-implantitis are common. This study showed unique long-term (≥ 10 years) results about implant survival, peri-implant health, patients' satisfaction and OHQoL in oligodontia patients rehabilitated with implant-based fixed prosthodontics.

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PMID = 28219536

Title = Reply.

PMID = 22316320

Title = Dysfunction of the RAR/RXR signaling pathway in the forebrain impairs hippocampal memory and synaptic plasticity.

Abstract = Retinoid signaling pathways mediated by retinoic acid receptor (RAR)/retinoid \times receptor (RXR)-mediated transcription play critical roles in hippocampal synaptic plasticity. Furthermore, recent studies have shown that treatment with retinoic acid alleviates age-related deficits in hippocampal long-term potentiation (LTP) and memory performance and, furthermore, memory deficits in a transgenic mouse model of Alzheimer's disease. However, the roles of the RAR/RXR signaling pathway in learning and memory at the behavioral level have still not been well characterized in the adult brain. We here show essential roles for RAR/RXR in hippocampus-dependent learning and memory. In the current study, we generated transgenic mice in which the expression of dominant-negative RAR (dnRAR) could be induced in the mature brain using a tetracycline-dependent transcription factor and examined the effects of RAR/RXR loss. The expression of dnRAR in the forebrain down-regulated the expression of RAR β , a target gene of RAR/RXR, indicating that dnRAR mice exhibit dysfunction of the RAR/RXR signaling pathway. Similar with previous findings, dnRAR mice displayed impaired LTP and AMPA-mediated synaptic transmission in the hippocampus. More importantly, these mutant mice displayed impaired hippocampus-dependent social recognition and spatial memory. However, these deficits of LTP and memory performance were rescued by stronger conditioning stimulation and spaced training, respectively. Finally, we found that pharmacological blockade of RAR α in the hippocampus impairs social recognition memory. From these observations, we concluded that the RAR/RXR signaling pathway greatly contributes to learning and memory, and LTP in the hippocampus in the adult brain.

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PMID = 39475088

Title = Cumulative Socioeconomic Status Risk is Associated With Greater Increase in Serum Neurofilament Light Chain Levels Among Middle-Aged Black Adults.
Abstract = This study examined the longitudinal relationship between cumulative socioeconomic status (SES) risk and serum neurofilament light chain (NfL) levels to better understand the association between social factors and a biomarker of neurodegeneration. We used data from the Family and Community Health Study, collecting psychosocial and blood data at 2 waves (2008) and (2019) from 254 Black Americans (43 males and 211 females). Blood samples were analyzed at each wave for serum NfL concentrations. Regression analysis and mixed-effect modeling examined relationships between cumulative SES risk and serum NfL, controlling for covariates and assessing time effects. Utilizing 11-year longitudinal data, serum NfL levels increased with age. Higher cumulative SES risk at baseline correlated with elevated serum NfL at the 11-year follow-up and predicted a greater increase in NfL levels. Clinically, NfL is a sensitive biomarker for axonal injury and neurodegeneration, commonly used to detect early and preclinical stages of conditions such as Alzheimer's disease, multiple sclerosis, and other neurodegenerative disorders. Our results suggest that exposure to cumulative SES risk among Black adults may contribute to elevated levels of NfL, indicating potential early neurodegeneration. Given the established role of NfL in detecting neurodegenerative processes, these findings underscore the importance of interventions that bolster social safety nets and social connectedness to enhance brain health and mitigate neurodegenerative risks.

PMID = 30917492

Title = Comparing the Effects of Road, Railway, and Aircraft Noise on Sleep: Exposure-Response Relationships from Pooled Data of Three Laboratory Studies.
Abstract = Air, road, and railway traffic, the three major sources of traffic noise, have been reported to differently impact on annoyance. However, these findings may not be transferable to physiological reactions during sleep which are considered to decrease nighttime recovery and might mediate long-term negative health effects. Studies on awakenings from sleep indicate that railway noise, while having the least impact on annoyance, may have the most disturbing properties on sleep compared to aircraft noise. This study presents a comparison between the three major traffic modes and their probability to cause awakenings. In combining acoustical and polysomnographical data from three laboratory studies sample size and generalizability of the findings were increased. Data from three laboratory studies were pooled, conducted at two sites in Germany (German Aerospace Center, Cologne, and Leibniz Research Centre for Working Environment and Human Factors, Dortmund). In total, the impact of 109,836 noise events on polysomnographically assessed awakenings was analyzed in 237 subjects using a random intercept logistic regression model. The best model fit according to the Akaike Information Criterion (AIC) included different acoustical and sleep parameters. After adjusting for these moderators results showed that the probability to wake up from equal maximum A-weighted sound pressure levels (SPL) increased in the order aircraft < road < railway noise, the awakening probability from road and railway noise being not significantly

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different ($= 0.988$). At 70 dB SPL, it was more than 7% less probable to wake up due to aircraft noise than due to railway noise. The three major traffic noise sources differ in their impact on sleep. The order with which their impact increased was inversed compared to the order that was found in annoyance surveys. It is thus important to choose the correct concept for noise legislation, i.e., physiological sleep metrics in addition to noise annoyance for nighttime noise protection.

PMID = 18297666

Title = A four-shell, nesting doll-like 3d-4f cluster containing 108 metal ions.

PMID = 19277402

Title = Venous thromboembolism in pregnancy: diagnosis, management and prevention.

Abstract = A pregnant woman has a two- to five-fold higher risk of venous thromboembolism (VTE) than a non-pregnant woman of the same age and, in developed countries, she is more likely to die from fatal pulmonary embolism (PE) than from obstetric haemorrhage. The increased VTE risk is mediated through normal physiological changes of pregnancy including alterations in haemostasis that favour coagulation, reduced fibrinolysis and pooling and stasis of blood in the lower limbs. Thrombophilia, smoking, obesity, immobility and postpartum factors such as infection, bleeding and emergency surgery (including emergency caesarian section) also increase the risk of pregnancy-related VTE. The diagnosis of VTE can be safely established with acceptable radiation exposure to the fetus using readily available imaging modalities such as ultrasound, ventilation perfusion lung scanning and computed tomographic pulmonary angiography. However, the optimal diagnostic strategies still remain to be determined. If there is no contraindication to anticoagulation, commencing treatment prior to objective confirmation should be strongly considered. For the mother and fetus, effective and safe treatment is readily available with low-molecular-weight heparin (LMWH), but optimal dosing of these agents in pregnancy remains controversial. Emerging data support antepartum LMWH prophylaxis for women with previous VTE if the event was unprovoked or in the presence of thrombophilia. On the other hand, women with prior provoked VTE and no thrombophilia or women with asymptomatic thrombophilia (but a family history of VTE) can safely be managed with antepartum surveillance. Postpartum prophylaxis is recommended for women with prior VTE or thrombophilia (and a family history of VTE).

PMID = 26470944

Title = Pathological Features of the Unilateral Favorable Histology Nephroblastoma with Relapse.

Abstract = To evaluate the pathological features of the primary lesion in patients with relapse of unilateral favorable histology nephroblastoma. Fifty-eight patients with unilateral favorable histology nephroblastoma who underwent initial nephrectomy before chemotherapy were categorized into one of two groups: the nonrelapsed group ($n = 52$) and the relapsed group ($n = 6$). The histol

ogical subtypes of both groups and pathological features of the relapsed group were re-evaluated retrospectively. The histological subtypes of all relapsed cases were classified as blastemal predominant. In three of six cases with relapse, sheets of spindle-shaped blastemal cells that were histologically reminiscent of synovial sarcoma were predominant (massive sarcomatoid pattern). The histological blastemal predominant subtype of nephroblastoma is a strong indicator of relapse. In particular, the blastemal predominant subtype with massive sarcomatoid pattern may have a higher risk of relapse.

PMID = 24434228

Title = Yttrium-90 radioembolization of liver tumors: what do the images tell us?

Abstract = Transarterial radioembolization (TARE) with yttrium 90 microspheres is an increasingly popular therapy for both primary and secondary liver malignancies. TARE entails delivery of β -particle brachytherapy and embolization of the tumor vasculature. The consequent biological sequelae are distinct from those of other transarterial therapies for liver tumors, as reflected in the often baffling post-treatment imaging features. As the clinical use of TARE is increasing, more diverse post-treatment radiological findings are encountered with variable overlap among treatment response, residual disease, reactionary changes and complications. Thus, post-TARE image interpretation is challenging. This review provides a comprehensive description of the different findings seen in post-treatment scans, with the aim of facilitating appropriate radiological interpretation of post-TARE pathological changes, notwithstanding their existing limitations.

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PMID = 37286321

Title = Assessing physical inactivity as a risk factor for chronic kidney diseases in Iranian population.

Abstract = Physical inactivity is a major adjustable lifestyle risk factor in renal patients; nevertheless, research on the association of physical activity (PA) with chronic kidney disease (CKD) is unclear. Cross-sectional. We evaluated the secondary care related to the nephrology specialists. We evaluated PA in 3374 Iranian patients with CKD aged ≥ 18 years. Exclusion criteria were current or prior kidney transplantation, dementia, institutionalisation, expected to start renal replacement therapy or leave the area within study duration, participation in a clinical trial or inability to undergo the informed consent process. The renal function parameters were measured and compared with PA, assessed by the Baecke questionnaire. Estimated glomerular filtration rate, haematuria and/or albuminuria were used to estimate decreased kidney function and the incidence of CKD. To estimate the relationship between PA and CKD, we used the multinomial adjusted regression models. In the first model, findings indicate that the patients with the lowest PA score had significantly higher odds of CKD (OR 1.44, 95% CI 1.16 to 1.78; $p=0.01$), adjustment for age and sex attenuated this relationship (OR 1.25, 95% CI 1.56 to 1.78, $p=0.04$). Furthermore, adjusting for low-density lipoprotein, high-density lipoprotein, triglyceride, fasting blood glucose, body mass index, waist circumference, wa

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ist/hip ratio, coexisting diseases and smoking made this relationship insignificant (OR 1.23, 95% CI 0.97 to 1.55; $p=0.076$). After adjusting for potential confounders, we found that patients with lower PA have higher odds of CKD stage 2 (OR 1.62, 95% CI 1.13 to 2.32; $p=0.008$), no association with other CKD stages. These data suggest that physical inactivity contributes to the risk of early CKD, so encouraging patients with CKD to maintain higher PA levels could be used as a simple and useful tool to decrease the risk of disease progression and its related burden.

PMID = 38744505

Title = Assessing the impact of Canadian primary care research and researchers: Citation analysis.

Abstract = To describe the citation impact and characteristics of Canadian primary care researchers and research publications. Citation analysis. Canada. A total of 266 established Canadian primary care researchers. The 50 most cited primary care researchers in Canada were identified by analyzing data from the Scopus database. Various parameters, including the number of publications and citations, research themes, Scopus index, content analysis, journal impact factors, and field-weighted citation impact for their publications, were assessed. Information about the characteristics of these researchers was collected using the Google search engine. On average, the 50 most cited primary care researchers produced 51.1 first-author publications (range 13 to 249) and were cited 1864.32 times (range 796 to 9081) over 29 years. Twenty-seven publications were cited more than 500 times. More than half of the researchers were men (60%). Most were clinician scientists (86%) with a primary academic appointment in family medicine (86%) and were affiliated with 5 universities (74%). Career duration was moderately associated with the number of first-author publications ($0.35; =.013$). Most research focused on family practice, while some addressed health and health care issues (eg, continuing professional education, pharmaceutical policy). Canada is home to a cadre of primary care researchers who are highly cited in the medical literature, suggesting that their work is of high quality and relevance. Building on this foundation, further investments in primary care research could accelerate needed improvements in Canadian primary care policy and practice.

PMID = 21306435

Title = Cytoplasmic inclusions in leukocytes associated to cryoglobulinemia and IgG-kappa monoclonal gammopathy of undetermined significance.

PMID = 18760835

Title = Adhesion forces between Staphylococcus epidermidis and surfaces bearing self-assembled monolayers in the presence of model proteins.

Abstract = Self-assembled monolayers (SAMs) are being developed into coatings to reduce microbial biofilm formation on biomaterials. To test anti-adhesion properties, SAMs can be easily constructed on gold, and used to represent a coated biomaterial. However, coatings that prevent bacterial adhesion must also resist protein adsorption. We explored the competitive effects of bacteria

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and protein for adsorption to SAMs, choosing fetal bovine serum (FBS) to represent protein non-specific binding, and fibronectin (FN) to evaluate ligand/receptor binding. Staphylococcus epidermidis were immobilized on an atomic force microscope (AFM) tip and used as a force probe to detect the interaction forces between bacteria and gold-coated SAMs. The SAMs tested were alkanethiol molecules terminating in isophthalic acid (IPA) or isophthalic acid with silver (IAG). While *S. epidermidis* showed weak interactions with FBS, the bacteria showed strong adhesion with FN, due to ligand/receptor binding. Bacterial retention and viability experiments were correlated with the force measurements. *S. epidermidis* interacting with IAG SAMs showed a loss of viability, due to the mobility of silver ions. For most substrata, there was a link between high adhesion forces with bacteria and a high percentage of dead cells being retained on that substratum (even in the absence of a specific biocidal effect, such as silver). This may suggest that high adhesion forces can cause stress to the bacteria which contributed to their death. The relationship between highly adhesive SAMs and bacterial inactivation may be useful in future biomaterial design. When evaluating coatings for biomaterials, it is important to consider the interplay between bacteria, proteins, and the coating material.

PMID = 25282342

Title = The relationship between emotional intelligence, previous caring experience and mindfulness in student nurses and midwives: a cross sectional analysis.

Abstract = Emotional Intelligence (EI), previous caring experience and mindfulness training may have a positive impact on nurse education. More evidence is needed to support the use of these variables in nurse recruitment and retention. To explore the relationship between EI, gender, age, programme of study, previous caring experience and mindfulness training. Cross sectional element of longitudinal study. 938 year one nursing, midwifery and computing students at two Scottish Higher Education Institutes (HEIs) who entered their programme in September 2013. Participants completed a measure of 'trait' EI: Trait Emotional Intelligence Questionnaire Short Form (TEIQue-SF); and 'ability' EI: Schutte's et al. (1998) Emotional Intelligence Scale (SEIS). Demographics, previous caring experience and previous training in mindfulness were recorded. Relationships between variables were tested using non-parametric tests. Emotional intelligence increased with age on both measures of EI [TEIQue-SF $H(5)=15.157$, $p=0.001$; SEIS $H(5)=11.388$, $p=0.044$]. Females ($n=786$) scored higher than males ($n=149$) on both measures [TEIQue-SF, $U=44,931$, $z=-4.509$, $p<0.001$; SEIS, $U=44,744$, $z=-5.563$, $p<0.001$]. Nursing students scored higher than computing students [TEIQue-SF $H(5)=46,496$, $p<0.001$; SEIS $H(5)=33.309$, $p<0.001$]. There were no statistically significant differences in TEIQue-SF scores between those who had previous mindfulness training ($n=50$) and those who had not ($n=857$) [$U=22,980$, $z=0.864$, $p=0.388$]. However, median SEIS was statistically significantly different according to mindfulness training [$U=25,115.5$, $z=2.05$, $p=0.039$]. Neither measure demonstrated statistically significant differences between those with ($n=492$) and without ($n=479$) previous caring experience, [TEIQue-SF, $U=112,102$, $z=0.938$, $p=0.348$; SEIS, $U=115,194.5$, $z=1.863$, $p=0.063$]. Previous caring experience was not associated with higher emotional intelligence. Mindfulness training was associated with higher 'ability' emotional intelligence. Implications

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tions for recruitment, retention and further research are explored.

PMID = 19237607

Title = NDRG2 expression decreases with tumor stages and regulates TCF/beta-catenin signaling in human colon carcinoma.

Abstract = NDRG (N-Myc downstream-regulated gene)-2 is a member of the NDRG family. Although it has been suggested that NDRG2 is involved in cellular differentiation and tumor suppression, its intracellular signal and regulatory mechanism are not well known. Here, we show the differential expression of NDRG2 in human colon carcinoma cell lines and tissues by reverse transcription-polymerase chain reaction and immunohistochemical analyses with monoclonal antibody against NDRG2. NDRG2 was strongly expressed in normal colonic mucosa and colonic adenomatous tissues (25 of 25) but not in all invasive cancer tissues [44 of 99 (44%)]. Most distinctive results indicated that the high expression level of NDRG2 has a positive correlation with tumor differentiation and inverse correlation with tumor invasion depth and Dukes' stage of colon adenocarcinoma. To investigate the roles of NDRG2 in tumorigenesis, we used in vitro cell culture system. SW620 colon cancer cell line with a low level of intrinsic NDRG2 protein was transfected with NDRG2-expressing plasmid. TOPflash luciferase reporter assay showed that the transcriptional activity of T-cell factor (TCF)/lymphoid enhancer factor (LEF) was reduced by NDRG2 introduction, but not by the introduction of mutant NDRG2 generated by deletion or site-directed mutagenesis. Intracellular beta-catenin levels were slightly reduced in the NDRG2-transfected SW620 cells and this regulation of beta-catenin stability and TCF/LEF activity were mediated through the modulation of glycogen synthase kinase-3beta activity by NDRG2 function. Our results suggest that NDRG2 might play a pivotal role as a potent tumor suppressor by the attenuation of TCF/beta-catenin signaling for the maintenance of healthy colon tissues.

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PMID = 36569749

Title = The paradigm shift: Heartbeat initiation without "the pacemaker cell"

Abstract = The current dogma about the heartbeat origin is based on "the pacemaker cell," a specialized cell residing in the sinoatrial node (SAN) that exhibits spontaneous diastolic depolarization triggering rhythmic action potentials (APs). Recent high-resolution imaging, however, demonstrated that Ca signals and APs in the SAN are heterogeneous, with many cells generating APs of different rates and rhythms or even remaining non-firing (dormant cells), i.e., generating only subthreshold signals. Here we numerically tested a hypothesis that a community of dormant cells can generate normal automaticity, i.e., "the pacemaker cell" is not required to initiate rhythmic cardiac impulses. Our model includes 1) non-excitable cells generating oscillatory local Ca releases and 2) an excitable cell lacking automaticity. While each cell in isolation was not "the pacemaker cell", the cell system generated rhythmic APs: The subthreshold signals of non-excitable cells were transformed into respective membrane potential oscillations electrogenic Na/Ca exchange and further transferred and integrated (computed) by the excitable cells to reach its AP threshold.

hold, generating rhythmic **pacemaking**. Cardiac impulse is an emergent property of the SAN cellular network and can be initiated by cells lacking intrinsic automaticity. Cell heterogeneity, weak coupling, subthreshold signals, and their summation are critical properties of the new pacemaker mechanism, i.e., cardiac pacemaker can operate a signaling process basically similar to that of "temporal summation" happening in a neuron with input from multiple presynaptic cells. The new mechanism, however, does not refute the classical pacemaker cell-based mechanism: both mechanisms can co-exist and interact within SAN tissue.

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PMID = 36442369

Title = Multi-functional Ti6Al4V-CoCrMo implants fabricated by multi-material laser powder bed fusion technology: A disruptive material's design and manufacturing philosophy.

Abstract = A home-made 3D Multi-Material Laser Powder Bed Fusion (3DMLPBF) technology was exploited to manufacture novel multi-material Ti6Al4V-CoCrMo parts. This multi-material concept aims to bring to life a new and disruptive material's design concept for the acetabular cup. Only using a layer-by-layer approach it is possible to manufacture an acetabular cup capable to combine CoCrMo alloy wear resistance and Ti6Al4V alloy bone-friendly nature, in a single component, fabricated at once. This system works with multiple powder deposition functions and vacuum cleaning procedures allowing to use two different powders (Ti6Al4V and CoCrMo) in each layer and thus, allowing to construct 3D Multi-Material transition between distinct materials, point-by-point and layer-by-layer. In this sense, the manufacturing strategies and the functional transition between Ti6Al4V and CoCrMo with a mechanical interlocking were analyzed and discussed both from mechanical and metallurgical point of view. A small diffusion area and no evidence of defects or cracks can be found in the transition's regions between the distinct materials which are strong evidences of a solid metallurgical bonding at the interfacial regions of Ti6Al4V and CoCrMo materials. A functional transition is also obtained through a design capable to provide a 3D mechanical interlocking with potential of assuring, simultaneously, tensile and compressive strength. This proof of concept might be a step-ahead in Laser Powder Bed Fusion in which the most desired intrinsic of individual materials can be combined in a single component targeting biomedical disruptive solutions.

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PMID = 33928772

Title = Fatal cerebral **haemorrhage** after COVID-19 vaccine.

Abstract = New vaccines against COVID-19 are being rolled out globally. AstraZeneca's vaccine ChAdOx1 nCoV-19 was not known to cause vaccine-induced immune thrombotic thrombocytopenia (VITT) at the time of this case. The patient was a previously healthy woman in her thirties with headaches that developed one week after vaccination with ChAdOx1 nCoV-19. Three days later, her condition deteriorated rapidly, and she presented to the emergency department with slurred speech, uncoordinated movements and reduced consciousness. Symptoms progressed to left-sided hemiparesis and her level of consciousness deteriorated

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. Computed tomography (CT) of the head showed a large right-sided haemorrhage and incipient herniation. She was found to have severe thrombocytopenia $37 \times 10^9/l$, (ref $145 - 390 \times 10^9/l$). In spite of efforts to reduce intracranial pressure, the patient died the following day. Post mortem examination revealed antibodies to PF4, and fresh small thrombi were found in the transverse sinus, frontal lobe and pulmonary artery. Severe thrombocytopenia and antibodies to PF4 make a diagnosis of vaccine-induced immune thrombotic thrombocytopenia (VITT) likely.

PMID = 33851196

Title = Pushing the boundaries of precision nutrition to tackle Alzheimer's disease: is there a role for DHA?

PMID = 37622555

Title = Venous air embolism: Case series of a complication of computed tomography pulmonary angiography (CTPA) in the Emergency Department of Medicine.
Abstract = Venous air embolism (VAE) consists of air entering vascular structures due to a pressure gradient generated during medical-surgical procedures. Most cases of VAE are iatrogenic. Three hospitalised patients aged 23 to 86 years underwent venous air embolism (VAE) in the right heart system after performing CTPA. One of the patients died from a complication of venous thromboembolic disease (PE, coronary sinus thrombosis, mesenteric venous thrombosis). CTPA is a procedure that a priori seems innocuous, but it can be a potential cause of death or serious consequences for patients undergoing radiological procedures where the administration of contrast and the use of an injector could be counterproductive. Radiologists and physicians responsible for the patient should be aware of vascular gas embolism after contrast injection in patients undergoing CTPA.

PMID = 26887740

Title = Re: Use of Phosphodiesterase Type 5 Inhibitors for Erectile Dysfunction and Risk of Malignant Melanoma.

PMID = 35346979

Title = Nurse-led dialogue-driven digital platform-based personalised education programmes may improve diabetes management of patients on basal insulin therapy.

PMID = 31387028

Title = A high resolution LC-MS targeted method for the concomitant analysis of 11 contraceptive progestins and 4 steroids.
Abstract = In the context of hormonal contraception and hormone replacement therapy (HRT), many women are exposed to exogenous hormones. Current use of hormonal contraception with combined ethinyl estradiol and different progestins bestows a breast cancer relative risk (RR) of 1.2- while combined HRT has a RR of 2. Although these exposures present an important public health issue, little is known about the effects of individual progestins on the breast and other

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her tissues. Increasing availability of large scale biobanks, high throughput analyses and data management tools enable ever expanding, sophisticated population studies. In order to address the impact of distinct progestins on various health indicators, it is desirable to accurately quantify progestins in clinical samples. Here we have developed and validated a high resolution liquid chromatography mass spectrometry (LC-MS) targeted method for the simultaneous quantification of 11 synthetic progestins widely used in oral contraceptives, gestodene, levonorgestrel, etonogestrel, chlormadinone acetate, cyproterone acetate, drospirenone, desacetyl norgestimate, medroxyprogesterone acetate, norethindrone, dienogest, norgestrol acetate, and 4 endogenous steroid hormones, progesterone, testosterone, androstenedione, and cortisol in blood samples. This highly specific quantitative analysis with high resolution Orbitrap technology detects and quantifies 15 compounds using their internal standard counterparts in a single 12 min LC-MS run. Sensitivity is attained by the use of the instrument in targeted selected ion monitoring mode. Lower limit of quantitation ranges from 2.4 pg/ml for drospirenone to 78.1 pg/ml for chlormadinone acetate. The method provides comprehensive progestin panel measurements with as little as 50 µl of murine or human plasma.

PMID = 24450414

Title = 2-Methoxystypannone inhibits signal transducer and activator of transcription 3 and nuclear factor-κB signaling by inhibiting Janus kinase 2 and IκB kinase.

Abstract = Constitutive activation of the signal transducer and activator of transcription 3 (STAT3) or the nuclear factor-κB (NF-κB) pathway occurs frequently in cancer cells and contributes to oncogenesis. The activation of Janus kinase 2 (JAK2) and IκB kinase (IKK) are key events in STAT3 and NF-κB signaling, respectively. We have identified 2-methoxystypannone (2-MS) from a traditional Chinese medicinal herb *Polygonum cuspidatum* as a novel dual inhibitor of JAK2 and IKK. 2-MS inhibits both interleukin-6-induced and constitutively-activated STAT3, as well as tumor necrosis factor-α-induced NF-κB activation. 2-MS specifically inhibits JAK and IKKβ kinase activities but has little effect on activities of other kinases tested. The inhibitory effects of 2-MS on STAT3 and NF-κB signaling can be eliminated by DTT or glutathione and can last for 4 h after a pulse treatment. Furthermore, 2-MS inhibits growth and induces death of tumor cells, particularly those with constitutively-activated STAT3 or NF-κB signaling. We propose that the natural compound 2-MS, as a potent dual inhibitor of STAT3 and NF-κB pathways, is a promising anticancer drug candidate.

PMID = 35368968

Title = Deny or bolster? A comparative study of crisis communication strategies between Trump and Cuomo in COVID-19.

Abstract = This study applied the situational crisis communication theory (SCCT) in political crisis communication amidst the COVID-19 outbreak, a "sticky crisis" that is longitudinal and politicized, thereby involving multiple challenges and complexities. Considering the critical role of Twitter in the info

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information transmissions during the ongoing pandemic, this study considered politicians' tweets as a proxy to access their crisis communication strategies and conducted a systematic content analysis to critically evaluate COVID-19 crisis communication strategies of two politicians, Trump and Cuomo, according to their perceived day-to-day circumstances during COVID-19. Three strategies categorized by SCCT, , , and , surfaced with significance for both Trump and Cuomo. A new strategy specific to the political context, , was also identified. In addition, significant differentiation was observed in the strategic narratives between Trump and Cuomo, which reveals the evolving political dynamics in disease representation and crisis messaging. For example, Trump emphasized social exclusion and accusations of Democrats whilst Cuomo stressed care for vulnerable and minority groups and compassion delivery. Moreover, strategy , especially accusing other races, significantly boosted audience engagement for Trump. The results are discussed in relation to the idiosyncrasy of the complex COVID-19 pandemic and crisis communication in the political realm. Our findings demonstrate practical implications including online crisis messaging recommendations that foster public trust during politicized and polarized health emergencies and cultivate grounds for information exchange beyond partisan barriers.

PMID = 26272587

Title = Morphoscopic Trait Expression in "Hispanic" Populations.

Abstract = This study evaluates population variation of eight cranial morphoscopic traits using samples of known southwest Hispanics (n=72), Guatemalans (n=106), American Blacks (n=146), and American Whites (n=218). We applied the support vector machine (SVM) method to build a prediction model based on a subsample (20%) of the data; the remainder of the data was used as a test sample. The SVM approach effectively differentiated between the four groups with correct classification rates between 72% (Guatemalan group) and 94% (American Black group). However, when the Guatemalan and southwest Hispanic samples were pooled, the same model correctly classified all groups with a higher degree of accuracy (American Black=96%; American White=77%; and the pooled Hispanic sample=91%). This study also identified significant differences between the two Hispanic groups in six of the eight traits using univariate statistical tests. These results speak to the unique population histories of these samples and the current use of the term "Hispanic" within forensic anthropology. Finally, we argue that the SVM can be used as a classification model for ancestry estimation in a forensic context and as a diagnostic tool may broaden the application of morphoscopic trait data for the assessment of ancestry.

PMID = 34010311

Title = The impact of urinary incontinence on falls: A systematic review and meta-analysis.

Abstract = Previous studies on the association between urinary incontinence (UI) and falls have reported conflicting results. We, therefore, aimed to evaluate and clarify this association through a systematic review and meta-analysis of relevant studies. We performed a literature search for relevant studies

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in databases including PubMed and EMBASE from inception up to December 13, 2020, using several search terms related to UI and falls. Based on the data reported in these studies, we calculated the pooled odds ratios (ORs) for falls and the corresponding 95% confidence intervals (CIs) using the Mantel-Haenszel method. This meta-analysis included 38 articles and a total of 230,129 participants. UI was significantly associated with falls (OR, 1.62; 95% CI, 1.45-1.83). Subgroup analyses based on the age and sex of the participants revealed a significant association between UI and falls in older (≥ 65 years) participants (OR, 1.59; 95% CI, 1.31-1.93), and in both men (OR, 1.88; 95% CI, 1.57-2.25) and women (OR, 1.41; 95% CI, 1.29-1.54). Subgroup analysis based on the definition of falls revealed a significant association between UI and falls (≥ 1 fall event) (OR, 1.61; 95% CI, 1.42-1.82) and recurrent falls (≥ 2 fall events) (OR, 1.63; 95% CI, 1.49-1.78). According to the UI type, a significant association between UI and falls was observed in patients with urgency UI (OR, 1.76; 95% CI, 1.15-1.70) and those with stress UI (OR, 1.73; 95% CI, 1.39-2.15). This meta-analysis, which was based on evidence from a review of the published literature, clearly demonstrated that UI is an important risk factor for falls in both general and older populations.

PMID = 24256847

Title = An update on a systematic review of the use of geriatric assessment for older adults in oncology.

Abstract = Our previous systematic review of geriatric assessment (GA) in oncology included a literature search up to November 2010. However, the quickly evolving field warranted an update. Aims of this review: (i) provide an overview of all GA instruments developed and/or in use in the oncology setting; (ii) evaluate effectiveness of GA in predicting/modifying outcomes (e.g. treatment decision impact, treatment toxicity, mortality, use of care). Systematic review of literature published between November 2010 and 10 August 2012. English, Dutch, French and German-language articles reporting cross-sectional or longitudinal, intervention or observational studies of GA instruments were included. MEDLINE, EMBASE, PsycINFO, CINAHL and Cochrane Library. Two researchers independently reviewed abstracts, abstracted data and assessed the quality using standardized forms. A meta-analysis method of combining proportions was used for the outcome impact of GA on treatment modification with studies included in this update combined with those included in our previous systematic review on the use of GA. Thirty-five manuscripts reporting 34 studies were identified. Quality of most studies was moderate to good. Eighteen studies were prospective, 11 cross-sectional and 5 retrospective. Three studies examined treatment decision-making impact and found decisions changed for fewer than half of assessed patients (weighted percent modification is 23.2% with 95% confidence interval (20.3% to 26.1%). Seven studies reported conflicting findings regarding predictive ability of GA for treatment toxicity/complications. Eleven studies examined GA predictions of mortality, and reported that instrumental activities of daily living, poor performance status and more numerous GA deficits were associated with increased mortality risk. Other outcomes could not be meta-analyzed. Consistent with our previous review, several domains of GA are associated with adverse outcomes. However, further research examining effectiveness of GA on treatment decisions and oncologic outcomes is needed.

PMID = 23832591

Title = Purification and characterization of transcription factors.

Abstract = Transcription factors (TFs) are essential for the expression of all proteins, including those involved in human health and disease. However, TFs are resistant to proteomic characterization because they are frequently masked by more abundant proteins due to the limited dynamic range of capillary liquid chromatography-tandem mass spectrometry and protein database searching. Purification methods, particularly strategies that exploit the high affinity of TFs for DNA response elements (REs) on gene promoters, can enrich TFs prior to proteomic analysis to improve dynamic range and penetrance of the TF proteome. For example, trapping of TF complexes specific for particular REs has been achieved by recovering the element DNA-protein complex on solid supports. Additional methods for improving dynamic range include two- and three-dimensional gel electrophoresis incorporating electrophoretic mobility shift assays and Southwestern blotting for detection. Here we review methods for TF purification and characterization. We fully expect that future investigations will apply these and other methods to illuminate this important but challenging proteome.

PMID = 22991117

Title = Incidence of gastric extubation of users in a home care program of a university hospital.

Abstract = This quantitative, prospective study, aimed to characterize the profile of users and caregivers and to measure the incidence of gastric extubation, identifying the type and the reasons for the extubation of these users in a Home Care Program of a university hospital. The population consisted of 37 subjects and the data were collected from April to August 2010. For the analysis, descriptive statistics, test of significance of 5% and calculation of indicators were adopted. It was found that 51.4% of the users were female, 67.5% in the age group >60 years and 67.6% presented neurological diseases. Regarding the caregivers 89.2% were female and their mean age was 50.6 years. The incidence of extubation, considering 100 days of intubation, corresponded to 1.08, with 0.26 planned and 0.82 unplanned ($p=0.009$). These results allowed the rates to be calculated of the extubation of patients with gastric intubation for nutritional support in domicile care, providing support in establishing care and management goals for the continuous improvement of quality.

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PMID = 23835000

Title = The mechanistic and evolutionary aspects of the 2'- and 3'-OH paradigm in biosynthetic machinery.

Abstract = The translation machinery underlies a multitude of biological processes within the cell. The design and implementation of the modern translation apparatus on even the simplest course of action is extremely complex, and involves different RNA and protein factors. According to the "RNA world" idea, the critical link in the translation machinery may be assigned to an adaptor

tRNA molecule. Its exceptional functional and structural characteristics are of primary importance in understanding the evolutionary relationships among all these macromolecular components. The 2'-3' hydroxyls of the tRNA A76 constitute chemical groups of critical functional importance, as they are implicated in almost all phases of protein biosynthesis. They contribute to: a) each step of the tRNA aminoacylation reaction catalyzed by aminoacyl-tRNA synthetases (aaRSs); b) the isomerase activity of EF-Tu, involving a mixture of the 2'(3')- aminoacyl tRNA isomers as substrates, thereby producing the required combination of amino acid and tRNA; and c) peptide bond formation at the peptidyl transferase center (PTC) of the ribosome. We hypothesize that specific functions assigned to the 2'-3' hydroxyls during peptide bond formation co-evolved, together with two modes of attack on the aminoacyl-adenylate carbonyl typical for two classes of aaRSs, and alongside the isomerase activity of EF-Tu. Protein components of the translational apparatus are universally recognized as being of ancient origin, possibly replacing RNA-based enzymes that may have existed before the last universal common ancestor (LUCA). We believe that a remnant of these processes is still imprinted on the organization of modern-day translation. Earlier publications indicate that it is possible to select ribozymes capable of attaching the aa-AMP moiety to RNA molecules. The scenario described herein would gain general acceptance, if a ribozyme able to activate the amino acid and transfer it onto the terminal ribose of the tRNA, would be found in any life form, or generated in vitro. Interestingly, recent studies have demonstrated the plausibility of using metals, likely abandoned under primordial conditions, as biomimetic catalysts of the aminoacylation reaction.

PMID = 27198715

Title = Organ siderosis and hemophagocytosis during acute graft-versus-host disease.

PMID = 29863031

Title = Electrochemical Biosensor for Polycyclic Organic Compounds Screening Based on a Methylene Blue-incorporated DNA Polyion Complex Modified Electrode.

Abstract = A reagent-less electrochemical DNA biosensor for rapid non-electroactive polycyclic organic compounds (POCs) screening and detection was proposed. In this method, methylene blue (MB) was incorporated into DNA/chitosan polyion complex membrane and then modified onto a glassy carbon electrode (GCE). The electrochemical analysis for the prepared DNA-MB/chitosan/GCE showed that the modified electrode exhibited high electrochemical activity and stability. The addition of tetracycline hydrochloride (TC), a model analyte of non-electroactive POCs, resulted in an obvious peak current decrease in DNA-MB/chitosan/GCE, and this electrochemical response was affected by the DNA type and MB/DNA ratio in the modified electrodes. Ultraviolet-visible (UV-Vis) absorption spectroscopy was utilized to furthermore investigate the interaction between TC and DNA-MB/chitosan/GCE. As a result, a competitive interaction and displacement effect between TC and the intercalated MB was proposed. In our condition, the prepared DNA-MB/chitosan/GCE showed high sensitivity to POCs and

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had almost no response to common interferences. Besides, the good stability and reproducibility of the prepared electrode made it suitable for practical use.

PMID = 34735232

Title = Scalable Birch reduction with lithium and ethylenediamine in tetrahydrofuran.

Abstract = The Birch reduction dearomatizes arenes into 1,4-cyclohexadienes. Despite substantial efforts devoted to avoiding ammonia and cryogenic conditions, the traditional, cumbersome, and dangerous procedure remains the standard. The Benkeser reduction with lithium in ethylenediamine converts arenes to a mixture of cyclohexenes and cyclohexanes; this is operationally easier than the Birch reduction but does not afford 1,4-cyclohexadienes. Here, we report a Birch reduction promoted by lithium and ethylenediamine (or analogs) in tetrahydrofuran at ambient temperature. Our method is easy to set up, inexpensive, scalable, rapid, accessible to any chemical laboratory, and capable of reducing both electron-rich and electron-deficient substrates. Our protocol is also compatible with organocuprate chemistry for further functionalization.

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PMID = 31280275

Title = Bicycle-related traumatic injury hospitalizations: six years descriptive analysis in Qatar.

Abstract = Bicycle riding is a widely practiced mode of transportation, commuting, competition, fitness and recreation. We aimed to describe the incidence, risk factors and outcomes of Bicycle-Related Traumatic Injury (BRTI) in a Middle Eastern country. Data were extracted from a prospectively collected trauma registry over a period of six years (2010- 2015) from the national trauma center. Demographics and clinical characteristics of patients, and outcomes were analyzed. There were 150 patients with a mean age of 27.2 ± 16.6 years, 98% were males, 86.6% were hit by a car and 8.7% died. The average annual incidence of BRTIs was 1.3 per 100,000 populations. The mean Glasgow Coma Score (GCS) and injury severity score (ISS) were 12.7 ± 4.0 and 13.6 ± 9.8 ; respectively. Almost one-third of cases had an ISS of 9-15. The most commonly injured region was the head (47%) followed by a lower extremity (30%), chest (25%), upper extremity (21.3%), spine (20.7%), abdomen (18.7%) and (7%) pelvis. BRTI is relatively uncommon in Qatar; however, it is characterized by a distinct epidemiology with a considerable mortality. Young male nationals, recreational cyclists and expatriate young commuter cyclists comprise the majority of victims and should be the focus of primary prevention efforts. Complementary prevention should aim at enforcing helmet laws to reduce fatal head injuries, and educating motorists of safer practices around cyclists.

PMID = 39268461

Title = Transcriptome analysis to explore the mechanism of downregulated TNF α influencing the effect of risperidone.

Abstract = Risperidone is one of the most reliable and effective antipsychotics

cs for schizophrenia treatment. However, the mechanism of action of risperidone is not yet fully understood. Traf2 and Nck-interacting protein kinase (), a schizophrenia susceptibility gene, is associated with risperidone treatment response. Our previous experiments confirmed that downregulated TNIK affected the effect of risperidone on downstream targets. However, the effect of downregulated TNIK on risperidone-induced molecular expression remains to be further explored. Transcriptome analysis was performed on U251 cells subjected to risperidone, siRNA, and no treatment, respectively. Compared to the no-treatment group, two groups of DEGs were screened out and then intersected with the schizophrenia-related genes to screen the cross-talk genes. Those DEGs were analyzed using GO and KEGG. STRING and Cytoscape were used to construct a protein-protein interaction (PPI) network for the cross-talk gene. The results showed that the parathyroid hormone synthesis, secretion, and action were significantly enriched after risperidone treatment. Downregulated TNIK could have an impact on the collagen-containing extracellular matrix, signaling receptor activator activity, and PI3K-Akt signaling pathway. Interestingly, bone mineralization function and calcium signaling pathway were enriched in the cross-talk genes. Additionally, FGFR2, FGF1, and FGFR might be the potential targets for affecting the effects of risperidone. The study indicated that risperidone primarily influences functions and/or pathways associated with bone metabolism, potentially contributing to the adverse effect of osteoporosis. Our study may offer a novel perspective on investigating the mechanisms underlying the adverse effects of risperidone.

PMID = 30052275

Title = Efficiency of Brazilian public services of kidney transplantation: Benchmarking Brazilian states via data envelopment analysis.

PMID = 31905771

Title = Nanosatellites for Biology in Space: In Situ Measurement of *Bacillus subtilis* Spore Germination and Growth after 6 Months in Low Earth Orbit on the O/OREOS Mission.

Abstract = We report here complete 6-month results from the orbiting Space Environment Survivability of Living Organisms (SESLO) experiment. The world's first and only long-duration live-biology cubesat experiment, SESLO was executed by one of two 10-cm cube-format payloads aboard the 5.5-kg O/OREOS (Organism/Organic Exposure to Orbital Stresses) free-flying nanosatellite, which launched to a 72°-inclination, 650-km Earth orbit in 2010. The SESLO experiment measured the long-term survival, germination, metabolic, and growth responses of *Bacillus subtilis* spores exposed to microgravity and ionizing radiation including heavy-ion bombardment. A pair of radiation dosimeters (RadFETs, i.e., radiation-sensitive field-effect transistors) within the SESLO payload provided an in-situ dose rate estimate of 6-7.6 mGy/day throughout the mission. Microtiter wells containing samples of dried spores of a wild-type *B. subtilis* strain and a radiation-sensitive mutant deficient in Non-Homologous End Joining (NHEJ) were rehydrated after 14, 91, and 181 days in space with nutrient medium containing with the redox dye alamarBlue (AB), which changes color upon reaction with cellular metabolites. Three-color transmitted light intensity measur

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ements of all microwells were telemetered to Earth within days of each 24-hour growth experiment. At 14 and 91 days, spaceflight samples germinated, grew, and metabolized significantly more slowly than matching ground-control samples, as measured both by aB reduction and optical density changes; these rate differences notwithstanding, the final optical density attained was the same in both flight and ground samples. After 181 days in space, spore germination and growth appeared hindered and abnormal. We attribute the differences not to an effect of the space environment per se, as both spaceflight and ground-control samples exhibited the same behavior, but to a pair of ~15-day thermal excursions, after the 91-day measurement and before the 181-day experiment, that peaked above 46 °C in the SESLO payload. Because the payload hardware operated nominally at 181 days, the growth issues point to heat damage, most likely to component(s) of the growth medium (RPMI 1640 containing aB) or to biocompatibility issues caused by heat-accelerated outgassing or leaching of harmful compounds from components of the SESLO hardware and electronics.

PMID = 38399641

Title = Use of Trichoderma in the Production of Forest Seedlings.

Abstract = Forest production has great relevance in the Brazilian economy, characterized by several production sectors, including the production of seedlings. With the focus on maximizing the capacity of survival, development, and adaptation of seedlings, Trichoderma is highlighted as a potentially useful genus of microorganisms for promoting growth and higher product quality. In this sense, this review aims to describe the main mechanisms of fungi action in forest seedlings' production. The different species of the genus Trichoderma have specific mechanisms of action, and the current scenario points to more advances in the number of species. The interaction process mediated by different mechanisms of action begins in the communication with plants, from the colonization process. After the interaction, chemical dialogues allow the plant to develop better because, from colonization, the forest seedlings can maximize height and increase shoot and root development. Fungi promote solubilization and availability of nutrients to seedlings, which show numerous benefits to the development. The use of beneficial microorganisms, such as fungi of the genus Trichoderma, has become a sustainable strategy to enhance seedling development, reducing the use of agrochemicals and industrial fertilizers.

PMID = 26336883

Title = The effects of playing Nintendo Wii on depression, sense of belonging and social support in Australian aged care residents: a protocol study of a mixed methods intervention trial.

Abstract = The proportion of people aged 65 or older is the fastest growing age group worldwide. Older adults in aged care facilities have higher levels of depression, and lower levels of social support and sense of belonging compared with older adults living in the community. Research has begun to assess the effectiveness of interventions to improve the mental health of residents and has found both cognitive and physical benefits of video game playing. The benefits of playing these games in a group may also lead to greater social in

teraction and decreased loneliness. The current study aims to investigate an intervention program designed to foster relationships among older adults in care homes based on shared interests. Residents will be assessed on the effectiveness of a 6 week program of playing Wii bowling in comparison to a control group. Participants will be allocated to the intervention (Wii bowling) or the control group based on their place of residence. Participants in the intervention group will be invited to participate in Wii bowling twice weekly, with up to three other residents for a period of 6 weeks. Residents in both conditions will be assessed for depression, social support, sense of belonging, and current self-rated mood at pre-intervention (0 weeks), post-intervention (6 weeks), and at 2-month follow up (14 weeks). Qualitative data on social interaction between group members will also be collected at weeks 1, 3, and 6. Both groups will receive a Wii console after week 6 to establish if residents and staff engage with the Wii without intervention. The Wii provides a user friendly platform for older adults to use video games, and it incorporates both social and competitive aspects in the game play. Existing research has not extensively investigated the social aspects of using this type of technology with older adults. If found to be effective, incorporating Wii games into an activity schedule may benefit the mental health of older adults living in care by establishing an intervention that is fun, economical, and easy to use. Australian New Zealand Clinical Trials Registry: ACTRN12614000445673.

PMID = 38821715

Title = Chelating and antibiotic locks may be effective in the prevention of central venous access device-associated bloodstream infections in the paediatric population.

PMID = 33711001

Title = A Simulated Prospective Evaluation of a Deep Learning Model for Real-Time Prediction of Clinical Deterioration Among Ward Patients.

Abstract = The National Early Warning Score, Modified Early Warning Score, and quick Sepsis-related Organ Failure Assessment can predict clinical deterioration. These scores exhibit only moderate performance and are often evaluated using aggregated measures over time. A simulated prospective validation strategy that assesses multiple predictions per patient-day would provide the best pragmatic evaluation. We developed a deep recurrent neural network deterioration model and conducted a simulated prospective evaluation. Retrospective cohort study. Four hospitals in Pennsylvania. Inpatient adults discharged between July 1, 2017, and June 30, 2019. None. We trained a deep recurrent neural network and logistic regression model using data from electronic health records to predict hourly the 24-hour composite outcome of transfer to ICU or death. We analyzed 146,446 hospitalizations with 16.75 million patient-hours. The hourly event rate was 1.6% (12,842 transfers or deaths, corresponding to 260,295 patient-hours within the predictive horizon). On a hold-out dataset, the deep recurrent neural network achieved an area under the precision-recall curve of 0.042 (95% CI, 0.04-0.043), comparable with logistic regression model (0.043; 95% CI 0.041 to 0.045), and outperformed National Early Warning Score (0.034; 95% CI, 0.032-0.035), Modified Early Warning Score (0.028; 95% CI, 0.

0.027-0.03), and quick Sepsis-related Organ Failure Assessment (0.021; 95% CI, 0.021-0.022). For a fixed sensitivity of 50%, the deep recurrent neural network achieved a positive predictive value of 3.4% (95% CI, 3.4-3.5) and outperformed logistic regression model (3.1%; 95% CI 3.1-3.2), National Early Warning Score (2.0%; 95% CI, 2.0-2.0), Modified Early Warning Score (1.5%; 95% CI, 1.5-1.5), and quick Sepsis-related Organ Failure Assessment (1.5%; 95% CI, 1.5-1.5). Commonly used early warning scores for clinical decompensation, along with a logistic regression model and a deep recurrent neural network model, show very poor performance characteristics when assessed using a simulated prospective validation. None of these models may be suitable for real-time deployment.

PMID = 29523065

Title = Amyloid Properties of Titin.

Abstract = This review considers data on structural and functional features of titin, on the role of this protein in determination of mechanical properties of sarcomeres, and on specific features of regulation of the stiffness and elasticity of its molecules, amyloid aggregation of this protein in vitro, and possibilities of formation of intramolecular amyloid structure in vivo. Molecular mechanisms are described of protection of titin against aggregation in muscle cells. Based on the data analysis, it is supposed that titin and the formed by it elastic filaments have features of amyloid.

PMID = 21104159

Title = Efficacy of **amifostine** in treating patients with idiopathic thrombocytopenia purpura.

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Abstract = Idiopathic Thrombocytopenic Purpura (ITP) is an autoimmune disease characterized by the production of antibodies against platelet surface antigens, resulting in platelet destruction. ITP is generally treated using glucocorticoids, splenectomy, immunosuppressants, platelet transfusions, and also **rituximab** and **rituximab**. However, as these treatments are not effective in some refractory ITP patients, especially the elderly, who are also at greater risk of cerebral hemorrhage, we have undertaken this study to find a safe and effective way of treating these patients. In a clinical protocol, we have examined the efficacy of the cytoprotective adjuvant, amifostine, on 24 ITP patients, consisting of 21 Chinese (age: 13-92 years), and 3 Caucasians (age: 46-73 years). In order to prevent the side effects associated with amifostine treatment, an alternative dosing and anti-emetic regimen was developed as part of this protocol, which significantly improved patient acceptance. The protocol consisted of daily intravenous infusions of amifostine 5 × 400 mg per week, for a total of 4-5 weeks. All the patients experienced a long-lasting and continuing remission, defined as platelet counts greater than 100,000. Two patients relapsed: one after an upper respiratory tract infection, and another due to *Helicobacter pylori*. However, both these patients had complete remission, after they were treated again with amifostine. In this clinical study, we report for the first time, the successful use of amifostine for ITP treatment in refractory patients. In conclusion, amifostine may have good therapeutic effects.

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ct on ITP patients, especially in refractory and/or elderly. The long-term clinical outcome and the mechanism of action of this drug still need further investigation.

PMID = 19646894

Title = Porphyrin synthesis from aminolevulinic acid esters in endothelial cells and its role in photodynamic therapy.

Abstract = Photodynamic therapy (PDT) may cause tumour cell destruction by direct toxicity or by inducing microcirculatory shutdown. Protoporphyrin IX generated from 5-aminolevulinic acid (ALA) has been widely used as an endogenous photosensitiser in PDT. However, the hydrophilic nature of the ALA molecule limits its penetration through the stratum corneum of the skin and cell membranes and thus, ALA alkyl-esters have been developed to improve ALA permeation. The aim of this work was to study Protoporphyrin IX synthesis from ALA and its derivatives ALA methyl ester (Me-ALA) and ALA hexyl ester (He-ALA) in the microvascular endothelial cell line HMEC-1 derived from normal skin, and to evaluate their response to PDT. We found that lower light doses are required to photosensitise HMEC-1 endothelial cells than to photosensitise PAM212 transformed keratinocytes, showing some possible selectivity of ALA-PDT for vascularisation in skin. Employed at concentrations leading to equal Protoporphyrin IX synthesis, ALA, He-ALA and Me-ALA presented the same efficacy of HMEC-1 photosensitisation. However, He-ALA was a promising compound for the use in the enhancement of Protoporphyrin IX in HMEC-1 cells employed at low concentrations at both short and long time exposures whereas Me-ALA should be employed at high concentrations and longer time periods in order to surpass the Protoporphyrin IX levels obtained with ALA. The advantage of Me-ALA over ALA was based on its lower dark toxicity. This is the first work to report vascular cell photosensitisation employing alkyl-esters of ALA, and we demonstrated that these derivatives could exert the same effect as ALA and under certain conditions enhance photosensitisation of vasculature.

PMID = 29388265

Title = The curli regulator CsgD mediates stationary phase counter-silencing of csgBA in Salmonella Typhimurium.

Abstract = Integration of horizontally acquired genes into transcriptional networks is essential for the regulated expression of virulence in bacterial pathogens. In Salmonella enterica, expression of such genes is repressed by the nucleoid-associated protein H-NS, which recognizes and binds to AT-rich DNA. H-NS-mediated silencing must be countered by other DNA-binding proteins to allow expression under appropriate conditions. Some genes that can be transcribed by RNA polymerase (RNAP) associated with the alternative sigma factor σ or the housekeeping sigma factor σ in vitro appear to be preferentially transcribed by σ in the presence of H-NS, suggesting that σ may act as a counter-silencer. To determine whether σ directly counters H-NS-mediated silencing and whether co-regulation by H-NS accounts for the σ selectivity of certain promoters, we examined the csgBA operon, which is required for curli fimbriae expression and is known to be regulated by both H-NS and σ . Using genetics and in

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vitro biochemical analyses, we found that σ is not directly required for csgB A transcription, but rather up-regulates csgBA via an indirect upstream mechanism. Instead, the biofilm master regulator CsgD directly counter-silences the csgBA promoter by altering the DNA-protein complex structure to disrupt H-N S-mediated silencing in addition to directing the binding of RNAP.

PMID = 39013001

Title = National Cancer Institute's Nanotechnology Characterization Laboratory Assay Cascade Protocols

Abstract = This document describes a protocol for evaluation of nanoparticle effects on the phagocytic function of immune cells. Phagocytosis is a receptor-mediated endocytosis peculiar to the phagocytic cells, e.g. cells of the mononuclear phagocytic system (MPS). Phagocytosis is an active process and requires actin polymerization. There are four primary receptors which mediate phagocytic uptake. Phagocytosis via three of these receptors (complement receptor (CR), FcγR receptor, and mannose receptor (MR)) is accompanied by inflammatory reactions (cytokine secretion). Phagocytosis via the fourth receptor (scavenger receptor (SR)) is not accompanied by inflammatory responses [-5].

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PMID = 25084458

Title = Marine protected area networks: assessing whether the whole is greater than the sum of its parts.

Abstract = Anthropogenic impacts are increasingly affecting the world's oceans. Networks of marine protected areas (MPAs) provide an option for increasing the ecological and economic benefits often provided by single MPAs. It is vital to empirically assess the effects of MPA networks and to prioritize the monitoring data necessary to explain those effects. We summarize the types of MPA networks based on their intended management outcomes and illustrate a framework for evaluating whether a connectivity network is providing an outcome greater than the sum of individual MPA effects. We use an analysis of an MPA network in Hawai'i to compare networked MPAs to non-networked MPAs to demonstrate results consistent with a network effect. We assert that planning processes for MPA networks should identify their intended outcomes while also employing coupled field monitoring-simulation modeling approaches, a powerful way to prioritize the most relevant monitoring data for empirically assessing MPA network performance.

PMID = 31720399

Title = Factors affecting the utilization of Xpert MTB/RIF assay among TB clinic health workers in Addis Ababa.

Abstract = The diagnostic accuracy of Xpert MTB/RIF is well documented but underutilization is a major challenge in most high burden countries. This appears to be linked with insufficient knowledge of health professionals of using the tool. However, this has not been well studied. Our objective was to assess the knowledge of health professionals on Xpert MTB/RIF assay and associated factors in detecting TB/TB drug resistance. An institution based cross-section

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nal study was conducted from April 4 to June 5, 2015, in Addis Ababa that involved 209 healthcare providers working in TB clinics. Structured questionnaire through self-administered interview technique was used to collect the data. We asked them about Xpert on whether they are aware of its place in TB diagnosis, when and for whom it shall be used, its role in treatment monitoring, result interpretation and patient's registration that are diagnosed by Xpert MTB/RIF. We used binary logistic regression analysis to identify associated factors. Odds ratio with 95% CI was computed to assess the strength of the associations. Of the 209 participants interviewed, the majority 151 (72.2%) were nurses. More than a half of the respondents 114 (54.6%) had poor knowledge. Health professionals with age above 35 years (AOR = 6.253, 95% CI (1.1995, 19.604)) and those who read the Xpert guideline (AOR = 4.231, 95% CI (2.011, 8.900)) were more likely to have good knowledge on Xpert. This study revealed that the overall magnitude of knowledge status was found to be low. Health workers above 35 years and those who read the guideline on Xpert had higher knowledge status on Xpert. Distribution of national guideline on Xpert and assigning experienced clinicians in TB DOTs clinics are recommended.

PMID = 38430252

Title = Advancing mental imagery research from an interdisciplinary sport science perspective: a commentary on Frank et al. (2023).

Abstract = Frank et al.'s (2023) perceptual-cognitive scaffold meaningfully extends the cognitive action architecture approach and we support this interdisciplinary advancement. However, there are theoretical and applied aspects that could be further developed within this research to maximise practical impact across domains such as sport. In particular, there is a need to consider how these mechanisms (1) might critically inform or relate to other prominent theories within sport (e.g., constrained action hypothesis and ecological approaches) and, (2) reflect the real-world challenges experienced by athletes. With these ideas in mind, this commentary aims to stimulate discussion and enhance the translational application of Frank et al.'s research.

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PMID = 24957011

Title = The complex interplay among bacterial motility and virulence factors in different *Escherichia coli* infections.

Abstract = Motility mediated by the flagella of *Escherichia coli* is important for the bacteria to move toward host cells. Here, we present the relationship among bacterial motility, virulence factors, antimicrobial susceptibility, and types of infection. A total of 231 clinical *E. coli* isolates from different infections were collected and analyzed. Higher-motility strains (motility diameter ≥ 6.6 mm) were more common in spontaneous bacterial peritonitis (SBP) (SBP 59 %, colonization 32 %, urinary tract infection 16 %, urosepsis 34 %, and biliary tract infection 29 %; $p < 0.0001$). Compared with the higher-motility group, there was a higher prevalence of *afa* and *ompT* genes ($p = 0.0160$ and $p = 0.0497$, respectively) in *E. coli* strains with lower motility. *E. coli* isolates with higher and lower motility were in different phylogenetic groups ($p = 0.018$), with a lower prevalence of A and B1 subgroups in higher-motility strains.

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ins. Also, the patterns of virulence factors and antibiotic susceptibility of *E. coli* isolates derived from various infections were significantly different. This study demonstrates that the prevalence of higher-motility strains was greater in *E. coli* isolates from SBP compared to other types of infection. Various types of *E. coli* infection were associated with differences in bacterial motility, virulence factors, and antibiotic susceptibility. More bacterial virulence factors may be necessary for the development of extraintestinal infections caused by *E. coli* isolates with lower motility.

PMID = 35588382

Title = Adding fuel to the fire: The exacerbating effects of calling intensity on the relationship between emotionally disturbing work and employee health.

Abstract = The burgeoning occupational callings literature has shown that feeling called to a job is associated with an array of positive job-, career-, and health-related outcomes. However, recent studies have begun to indicate that there may also be a "negative side" of callings. The present study builds on this emerging perspective to examine whether feeling called to a job makes helping professionals more vulnerable to the negative effects of acute stressors. Specifically, we integrated identity, cognitive rumination, and psychological detachment theories to explain how feeling called to one's job (i.e., the strength of one's calling intensity) might bolster the negative, indirect relationship between emotionally disturbing work and strain (i.e., mental exhaustion, sleep quality, and alcohol consumption) through negative work rumination. Results from a 10-week diary study with a national U.S. sample of 211 paramedics revealed that on weeks that paramedics experienced more emotionally disturbing work, they engaged in greater levels of negative work rumination, which in turn was associated with greater mental exhaustion and worse sleep quality, but not greater alcohol consumption. In addition, calling intensity moderated the indirect effect of emotionally disturbing work on both mental exhaustion and sleep quality, such that these indirect effects were stronger among those with higher (vs. lower) levels of calling intensity. These results provide evidence that employees who feel most called to their jobs may be particularly vulnerable to short-term negative outcomes associated with emotionally disturbing work. (PsycInfo Database Record (c) 2022 APA, all rights reserved).

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PMID = 34062463

Title = Non-antimicrobial approaches for the prevention or treatment of infectious bovine keratoconjunctivitis in cattle applicable to cow-calf operations: A scoping review.

Abstract = Infectious bovine keratoconjunctivitis (IBK) is a common ocular disease in cattle that causes economic losses to producers and negatively impacts animal welfare. In a 2016 survey of cow-calf producers in California, IBK was identified as the disease for which antimicrobials are most frequently used. The presented scoping review examined the available literature for methods to prevent IBK and for alternatives to antimicrobials to treat the disease.

that can be applied in cow-calf operations. Online databases were searched for publications about IBK in cattle populations that were reported from 1950 to 2020. Citations were systematically evaluated in a multi-stage approach using commercial software and summarized in a scoping review format. For the studies included in the review, most research (n = 50) has focused on the development of vaccines for the prevention of IBK. Although the quality of publications has improved over time, there is a lack of consistent evidence for vaccine efficacy against IBK in post-2000 experimental and conventional vaccine trials. A systematic analysis of vaccine studies is warranted. A limited number (n = 6) of studies evaluated the prevention of IBK through fly control, where most have found efficacy of this control measure. Several treatment options (n = 5) that do not include the use of antimicrobials have been investigated but remain at the preliminary stage of testing. Differences in breed susceptibility has been demonstrated with breeds belonging to the *Bos indicus* subspecies less frequently affected compared to those belonging to the *Bos taurus* subspecies. Hereford cattle and those lacking pigmentation around the eyelid margin are more frequently affected than other breeds. At present, there are few evidence-based measures that producers can utilize to reduce the burden of IBK in their herds and more research into the efficacy of fly control measures, non-antimicrobial treatment options, the continued search for a viable vaccine, as well as identifying genetic markers associated with traits that confer resistance to the disease are needed.

PMID = 32552363

Title = Switching from natalizumab to ocrelizumab in patients with multiple sclerosis.

PMID = 24312858

Title = Electrochemical studies for the determination of quetiapine fumarate and olanzapine antipsychotic drugs.

Abstract = Cyclic voltammetry and differential pulse voltammetry were used to explore the diffusion behavior of two antipsychotic drugs at a glassy carbon electrode. A well-defined oxidation peak was obtained in Britton-Robinson (BR) buffer (pH 2.0). The response was evaluated as a function of some variables such as the scan rate, and pH. A simple, precise, inexpensive and sensitive voltammetric method has been developed for the determination of the cited drugs Olanzapine (OLZ) and Quetiapine fumarate (QUT). A linear calibration was obtained from 3×10^{-8} M to 4×10^{-6} M and 2×10^{-8} M to 5×10^{-6} M, with R. S. D. were 1.6 % and 1.2 % for OLZ and QUT, respectively. The limit of detection (LOD) was 1×10^{-8} M, while the limit of quantification (LOQ) was 3×10^{-8} M. The method was applied to the determination of investigated drugs in urine and serum samples and dosage forms.

PMID = 23741085

Title = Mono- and bimetallic Rh and Pt NSR-catalysts prepared by controlled deposition of noble metals on support or storage component.

Abstract = Mono- and bimetallic Rh and Pt based NO_x storage-reduction (NSR)

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catalysts, where the noble metals were deposited on the Al_2O_3 support or BaCO_3 storage component, have been prepared using a twin flame spray pyrolysis setup. The catalysts were characterized by nitrogen adsorption, CO chemisorption combined with diffuse reflectance infrared Fourier transform spectroscopy, X-ray diffraction, and scanning transmission electron microscopy combined with energy dispersive X-ray spectroscopy. The NSR performance of the catalysts was investigated by fuel lean/rich cycling in the absence and presence of SO_2 (25 ppm) as well as after H_2 desulfation at 750°C . The performance increased when Rh was located on BaCO_3 enabling good catalyst regeneration during the fuel rich phase. Best performance was observed for bimetallic catalysts where the noble metals were separated, with Pt on Al_2O_3 and Rh on BaCO_3 . The Rh-containing catalysts generally showed much higher tolerance to SO_2 during fuel rich conditions and lost only little activity during thermal aging at 750°C .

PMID = 22134688

Title = Could dynamic ventilation waveforms bring about a paradigm shift in mechanical ventilation?

PMID = 28753798

Title = Selection Effects May Explain Smoking-related Outcome Differences After Radical Cystectomy.

Abstract = The impact of smoking on mortality among patients with bladder cancer is subject to controversy. We investigated 1000 patients who consecutively underwent radical cystectomy between 1993 and 2013. Proportional hazards models for competing risks were used to study the combined effects of variables on mortality. Compared to nonsmokers, current smokers were more frequently male (35.7% vs 12.0%, $p < 0.0001$), younger (63.5 vs 70.5 yr, $p < 0.0001$), had a lower body mass index (26.2 vs 27.1 kg/m², $p < 0.0001$), and suffered less frequently from cardiac insufficiency (12.7% vs 19.3%, $p = 0.0129$). Among current smokers there was a trend towards lower bladder cancer mortality and higher competing mortality in comparison to nonsmokers. On multivariable analysis, current smoking was not a predictor of bladder cancer mortality (hazard ratio [HR] in the full model 0.76; $p = 0.0687$) but was a predictor of competing mortality (HR in the optimal model 1.62; $p = 0.0044$). In conclusion, this study did not confirm adverse bladder cancer-related outcome among current smokers after radical cystectomy. With a younger mean age and a male predominance, there was a trend towards lower bladder cancer mortality current smokers that was eventually neutralized by higher competing mortality, illustrating that selection effects may explain some smoking-related outcome differences after radical cystectomy. The single-center design is a study limitation. PATIENT SUMMARY: Current smokers are not at higher risk of bladder cancer after radical cystectomy but have a higher risk of competing mortality.

PMID = 26974182

Title = Pt...H Nonclassical Interaction in Water-Dissolved Pt(II) Complexes: Coaction of Electronic Effects with Solvent-Assisted Stabilization.

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Abstract = The structure of the hydration shell of cisplatin, cis-[Pt(NH₃)₂Cl₂], and its aquated derivatives cis-[Pt(NH₃)₂Cl(H₂O)](+), cis-[Pt(NH₃)₂OH(H₂O)](+), and cis-[Pt(NH₃)₂(H₂O)₂](2+) were studied by a number of density functional molecular dynamics (DFT-MD) simulations (from 30 to 250 ps) in which Pt(II) complexes were immersed in a periodic box with 72 explicit water molecules. Furthermore, Pt(II) complex-water binding energy curves and full DFT optimizations of clusters derived from the lowest potential energy DFT-MD frames offered a deeper insight into the structure of the first hydration shell and electronic changes connected with the formation of a nonclassical Pt...H-O-H (Pt...Hw) hydrogen bond (inverse hydration). The probability of a Pt...Hw interaction decreases with increasing charge of the platinum complex due to disadvantageous electrostatics. The main stabilization comes from the charge transfer being followed by polarization and dispersion. Ligands form a framework for the network of H-bond interactions between the solvent molecules, which play an important role in the promotion/suppression of the formation of the Pt...Hw interactions. In the +2 charged diaqua complex the Pt...Hw interaction is still attractive but cannot compete with classical H bonds between solvent molecules. Thus, the formation of a Pt...Hw interaction is the result of a suitable solvent H-bonding network and the probability of its incidence decreases with increasing flexibility of the solvent.

PMID = 19506673

Title = Tunable external cavity laser employing uncooled superluminescent diode.

Abstract = We have fabricated a tunable external cavity laser (T-ECL) based on a superluminescent diode and a polymeric waveguide Bragg reflector, providing a cost-effective solution for wavelength division multiplexing-passive optical network (WDM-PON) systems. The wavelength of the T-ECL is tuned through 100 GHz-spacing 16 channels by the thermo-optic tuning of the refractive index of the polymer waveguide at a low input power of 70 mW. The maximum output power and the slope efficiency of the uncooled diode at 20 (75) degrees C are 8.83 (3.80) mW and 0.107 (0.061) W/A, respectively. The T-ECL operated successfully in the direct modulation for 1.25 Gbit/s transmissions over 20 km.

PMID = 39226760

Title = SlFSR positively regulates ethylene biosynthesis and lycopene accumulation during fruit ripening in tomato.

Abstract = Transcription factors (TFs) are crucial for regulating fruit ripening in tomato (*Solanum lycopersicum*). The GRAS (GAI, RGA, and SCR) TFs are involved in various physiological processes, but their role in fruit ripening has seldom been reported. We have previously identified a gene encoding GRAS protein named SlFSR (Fruit Shelf-life Regulator), which is implicated in fruit ripening by regulating cell wall metabolism; however, the underlying mechanism remains unclear. Here, we demonstrate that SlFSR proteins are localized to the nucleus, where they could bind to specific DNA sequences. SlFSR acts downstream of the master ripening regulator RIN and could collaborate with RIN to control the ripening process by regulating expression of ethylene biosynthesis

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s genes. In SlFSR-CR (CRISPR/Cas9) mutants, the initiation of fruit ripening was not affected but the reduced ethylene production and a delayed coloring process occurred. RNA-sequencing (RNA-seq) and promoter analysis reveal that SlFSR directly binds to the promoters of two key ethylene biosynthesis genes (SlACO1 and SlACO3) and activates their expression. However, SlFSR-CR fruits displayed a significant down-regulation of key rate-limiting genes (SlDXS1 and SlGGPPS2) in the 2-C-methyl-D-erythritol 4-phosphate (MEP) pathway, which may account for the impaired lycopene synthesis. Altogether, we propose that SlFSR positively regulates ethylene biosynthesis and lycopene accumulation, providing valuable insights into the molecular mechanisms underlying fruit ripening.

PMID = 23367630

Title = Birth in the Netherlands: the current situation.

PMID = 29746633

Title = In vitro study of force decay of latex and non-latex orthodontic elastics.

PMID = 37488654

Title = Correction: Progress in biomechanical stimuli on the cell-encapsulated hydrogels for cartilage tissue regeneration.

PMID = 34839244

Title = Patient Health Questionnaire (PHQ-9): A depression screening tool for people with epilepsy in Vietnam.

Abstract = Depression is a common mental disorder in people with epilepsy. Depression has a negative impact on medical and surgical treatment of epilepsy thus affecting the quality of life. Despite its high prevalence, depression has been under-recognized and treated improperly. It may also lead to missed work, increased healthcare system utilization, and higher direct medical costs. This study aimed to evaluate the accuracy of the Vietnamese Patient Health Questionnaire (PHQ-9) as a screening tool for depression in people with epilepsy. This cross-sectional study was conducted prospectively at epilepsy clinic at Nguyen Tri Phuong hospital, Ho Chi Minh City, Viet Nam from December 2019 to March 2020. A total of 91 adult people with epilepsy were recruited. After completing the Vietnamese PHQ-9 questionnaires, each participant was interviewed in a structured clinical interview for DSM-5 (SCID-5) to establish a diagnosis of major depressive disorder. The diagnostic accuracy of the PHQ-9 was assessed using diagnostic efficiency statistics compared with the gold standard structured interview. The prevalence of major depression in this sample was 25.3%. The areas under receiver operating characteristic (ROC) curve index of PHQ-9 had an estimated value of 0.91. The PHQ-9 at a cutoff point of 8 had the great overall balance of sensitivity (87.0%) and specificity (82.4%). At the cutoff point of 10, PHQ-9 had a higher specificity of 94.1%, but a lower sensitivity of 78.0%. The Vietnamese version PHQ-9 is an efficient and valid screening tool for depression in people with epilepsy in clinic settings.

PMID = 35478912

Title = A rapid analysis of antioxidants in *Sanghuangporus baumii* by online extraction-HPLC-ABTS.

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Abstract = In the present study, a simple and efficient approach based on the online extraction-high performance liquid chromatography coupled with ABTS antioxidant assay (OLE-HPLC-ABTS) was established to quickly and directly analyze the antioxidants in . Through this system, the HPLC mobile phase a guard column packed with a sample was used for online extraction (OLE). The separation was performed on an Agilent Poroshell EC-C18 column with a gradient elution using 0.1% formic acid (A) and 0.1% formic acid-acetonitrile (B) as mobile phase systems and detected at a wavelength of 254 nm. Then, the separated compounds were reacted with the antioxidant solution (ABTS), and the response was recorded at a wavelength of 400 nm. The developed analytical method was successfully applied to samples, and eight antioxidants were identified. The established system integrated the online extraction, separation and online antioxidant detection, which is rapid, efficient, and suitable for the rapid screening of antioxidant compounds from solid sample mixtures.

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PMID = 29058717

Title = ADAM10-mediated ephrin-B2 shedding promotes myofibroblast activation and organ fibrosis.

Abstract = Maladaptive wound healing responses to chronic tissue injury result in organ fibrosis. Fibrosis, which entails excessive extracellular matrix (ECM) deposition and tissue remodeling by activated myofibroblasts, leads to loss of proper tissue architecture and organ function; however, the molecular mediators of myofibroblast activation have yet to be fully identified. Here we identify soluble ephrin-B2 (sEphrin-B2) as a new profibrotic mediator in lung and skin fibrosis. We provide molecular, functional and translational evidence that the ectodomain of membrane-bound ephrin-B2 is shed from fibroblasts into the alveolar airspace after lung injury. Shedding of sEphrin-B2 promotes fibroblast chemotaxis and activation via EphB3 and/or EphB4 receptor signaling. We found that mice lacking ephrin-B2 in fibroblasts are protected from skin and lung fibrosis and that a disintegrin and metalloproteinase 10 (ADAM10) is the major ephrin-B2 sheddase in fibroblasts. ADAM10 expression is increased by transforming growth factor (TGF)- β 1, and ADAM10-mediated sEphrin-B2 generation is required for TGF- β 1-induced myofibroblast activation. Pharmacological inhibition of ADAM10 reduces sEphrin-B2 levels in bronchoalveolar lavage and prevents lung fibrosis in mice. Consistent with the mouse data, ADAM10-sEphrin-B2 signaling is upregulated in fibroblasts from human subjects with idiopathic pulmonary fibrosis. These results uncover a new molecular mechanism of tissue fibrogenesis and identify sEphrin-B2, its receptors EphB3 and EphB4 and ADAM10 as potential therapeutic targets in the treatment of fibrotic diseases.

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PMID = 23527462

Title = The psychological study of anxiety in the era of the Second World War

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Abstract = The mid-twentieth century in Britain ushered in a new age of anxiety with the development of total war and the aerial bombing of civilians. Rather than trying to chart and quantify levels of anxiety and fear on the British home front during the Blitz, this article's goal is to examine how these emotions were conceptualized by psychological experts immediately prior to and during the war. The essay follows the rising problematization of anxiety and fear as new concepts calling for professional knowledge and management. It emphasizes the contribution of psychoanalysts to this development while pointing to gradual change between the two world wars.

PMID = 24825082

Title = Serum insulin-like growth factor-binding protein-3 level correlated with glycemic control and lipid profiles in children and adolescents with type 1 diabetes.

Abstract = Increasing evidence suggests a role of the IGF axis in the maintenance of normal glucose and lipid metabolism. The local IGF-IGFBP environment changes significantly in response to the diabetes milieu. We aimed at determining serum IGF-1 and IGFBP-3 levels in children with type 1 diabetes mellitus (T1DM) and their relationship with clinical variables. Seventy-eight patients with T1DM and 47 healthy control subjects were included in this study. Significant reduction for concentration of serum IGF-1 was observed in patients with T1DM compared to healthy controls. However, serum IGFBP-3 levels were similar in patients with T1DM compared to controls. Both serum IGF-1 and IGFBP-3 levels were significantly correlated with age, BMI, and serum c-peptide levels. In addition, serum IGFBP-3 levels showed significant positive correlation with HbA1c, total cholesterol, and LDL-cholesterol in the uncontrolled diabetic patients. These findings suggest that IGFBP-3 may be involved in the glucose control and lipid metabolism in those with uncontrolled T1DM. Further studies are needed to document their roles on glucose and lipid metabolism in T1DM.

PMID = 33063701

Title = Idiopathic CD4+T lymphocytopenia: A case report.

PMID = 19290947

Title = P-glycoprotein in intestines, liver, kidney and lymphocytes in horse.

Abstract = P-glycoprotein (P-gp) is an important drug transporter, which is expressed in a variety of cells, such as the intestinal enterocytes, the hepatocytes, the renal tubular cells and the intestinal and peripheral blood lymphocytes. We have studied the localization and the gene and protein expression of P-gp in these cells in horse. In addition we have compared the protein sequence of P-gp in horse with the protein sequences of P-gp in several other species. Real time RT-PCR and Western blot showed gene and protein expression of horse P-gp in all parts of the intestines, but there was no strict correlation between these parameters. Immunohistochemistry showed localization of P-gp in the apical cell membranes of the enterocytes and, in addition, staining

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was observed in the intestinal intraepithelial and lamina propria lymphocytes. Peripheral blood lymphocytes also stained for P-gp, and gene and protein expression of P-gp were observed in these cells. There was a high gene and protein expression of P-gp in the liver, with P-gp-immunoreactivity in the bile canalicular membranes of the hepatocytes. Gene and protein expression of P-gp were found in the kidney with localization of the protein in different parts of the nephrons. Protein sequence alignment showed that horse P-gp has two amino acid insertions at the N-terminal region of the protein, which are not present in several other species examined. One of these is a 99 amino acid long sequence inserted at amino acid positions 23-121 from the N-terminal. The other is a six amino acid long sequence present at the amino acid positions 140-145 from the N-terminal. The results of the present study indicate that P-gp has an important function for oral bioavailability, distribution and excretion of substrate compounds in horse.

PMID = 36085757

Title = A Multilayer Monte Carlo Analysis of Optical Interactions in Reflectance Neck Photoplethysmography.

Abstract = This paper presents a multilayer Monte Carlo model of a healthy human neck to investigate the light-tissue interaction during different perfusion states within its dermal layer. Whilst there is great interest in advancing wearable technologies for medical applications, and non-invasive techniques like photoplethysmography (PPG) have been studied in detail, research has focused on more conventional body regions like the finger, wrist, and ear. Alternatively, the neck could offer access to additional physiological parameters which other body regions are unsuitable for. The aim of this work was to investigate the effects of several factors that would influence the optimum design of a reflectance PPG sensor for the neck. These included the source-detector separation on the optical path, penetration depth, and light detection efficiency. The results were generated from a static multilayer model in a reflectance mode geometry at two wavelengths, 660 nm and 880 nm, containing different blood volume fractions with a fixed oxygen saturation. Simulations indicated that both wavelengths penetrated similar depths, where optimal source-detector separation should not exceed 3 mm or 2.4 mm, for red and infrared respectively. Within this range, light interrogates the dermal-fat boundary corresponding to the last neck tissue layer positively contributing to a neck PPG acquisition.

PMID = 35118461

Title = Peptide Nanoarray Scaffold Vaccine for SARS-COV-2 and Its Variants of Concerns.

Abstract = The current vaccine development strategies for the COVID-19 pandemic utilize whole inactive or attenuated viruses, virus-like particles, recombinant proteins, and antigen-coding DNA and mRNA with various delivery strategies. While highly effective, these vaccine development strategies are time-consuming and often do not provide reliable protection for immunocompromised individuals, young children, and pregnant women. Here, we propose a novel modul

ar vaccine platform to address these shortcomings using chemically synthesized peptides and identified based on the validated bioinformatic data about the target. The vaccine is based on the rational design of an immunogen containing two defined B-cell epitopes from the spike protein of SARS-CoV-2 and a universal T-helper epitope PADRE assembled on the DNA scaffold. The results demonstrate that this assembly is immunogenic and generates neutralizing antibodies against SARS-CoV-2 wild type and its variants of concern (VOC). This newly designed peptide nanoarray scaffold vaccine is useful in controlling virus transmission in immunocompromised individuals, as well as individuals who are prone to vaccine-induced adverse reactions. Given that the immunogen is modular, epitopes or immunomodulatory ligands can be easily introduced in order to tailor the vaccine to the recipient. This also allows the already developed vaccine to be modified rapidly according to the identified mutations of the virus.

PMID = 30600550

Title = Tattoos and skin barrier function: Measurements of TEWL, stratum corneum conductance and capacitance, pH, and filaggrin.

Abstract = Initially after tattooing, the skin barrier function is broken. However, the long-term impact of clinically healed tattoos on this has never been studied. The aim was to investigate the long-term effect on the skin barrier function in normal tattoos and examples of tattoos with chronic inflammatory complication. Participants were recruited from the "Tattoo clinic" of the Dermatological Department on Bispebjerg Hospital in Denmark, where patients with complicated tattoo reactions are treated. Transepidermal water loss (TEWL), conductance, capacitance, and pH were measured in tattooed skin with regional control measurements in normal non-tattooed skin. Natural moisturizing factor (NMF) was measured in collected tape strips. Twenty six individuals with 28 tattoos were included, that is, 23 normal tattoos without any pathologic reaction and 5 tattoos with chronic inflammatory complications. No significant differences were found in tattooed versus non-tattooed skin with respect to TEWL (median values 6.6 vs 7.2 g/m²/h), conductance (76 vs 78 a.u.), pH (5.94 vs 5.79), and NMF (0.58 vs 0.59 mmol/g protein). Capacitance (64 vs 57 a.u.) was higher in tattooed skin compared to non-tattooed skin (P = 0.006). Similar results were found in tattoos with inflammatory reactions. Overall, skin tattoos do not affect the long-term skin barrier function markedly. The skin capacitance was, however, affected in tattooed skin areas compared to non-tattooed skin areas.

PMID = 27916699

Title = Results of a feasibility randomised controlled study of the guidelines for exercise in multiple sclerosis project.

Abstract = There is increasing recognition that exercise is an efficacious strategy for managing many consequences of multiple sclerosis (MS), yet persons with MS are not engaging in sufficient exercise for accruing health benefits. Poor exercise uptake might be associated with the design of previous research. We conducted a randomised controlled trial (RCT) for examining the feasibility

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ity of a 4-month home-based, exercise-training program designed based on recent physical activity guidelines for MS and supplemented by behavioural strategies for compliance. Feasibility was assessed in the domains of process (e.g., recruitment), resource (e.g., monetary costs), management (e.g., personnel time requirements) and scientific outcomes (e.g., treatment effect). We recruited persons with mild-to-moderate MS who were randomised into an intervention or wait-list control condition. Intervention participants received a pedometer, elastic resistance bands, DVD, training manual, calendars, log-book, video coaching calls and newsletters. Participants in both conditions completed home-based assessments before and after the 4-month period. Ninety-nine persons with MS were assessed for eligibility, and 57 were randomised. Fifty-one persons completed the study (90%). Total costs of the study were US \$5331.03. Personnel time to conduct the study totaled 263h. Participants in the intervention group complied fully with 71% of all exercise sessions. There was a moderate increase in self-reported exercise behaviour of the intervention participants as measured by the Godin Leisure-Time Exercise Questionnaire ($d \geq 0.5$). The results support the feasibility and acceptability of a home-based exercise intervention based on physical activity guidelines and supplemented with behavioural strategies for adults with mild-to-moderate MS.

PMID = 38630466

Title = Potential Role of Calcitonin Gene-Related Peptide Inhibitors in the Treatment of Rosacea Flushing and Erythema.

PMID = 28836551

Title = Clinical Characteristics of Bloodstream Infections in Pediatric Acute Leukemia: A Single-center Experience with 231 Patients.

Abstract = Acute leukemia is the most common pediatric hematological malignancy. Bloodstream infections (BSIs) are severe complications in these patients during chemotherapy. This study aimed to explore the clinical presentation and etiology of BSI, as well as the common sites of infection, and to provide a basis for the rational regarding antibiotic use. We performed a retrospective chart review of all pediatric patients who had acute leukemia accompanied by a BSI in our hospital from December 2011 to September 2015. All patients were selected based on clinical presentation and had to have at least one positive blood culture for inclusion. The basic clinical characteristics, blood culture results, and antimicrobial susceptibilities were analyzed. All 231 patients had a fever; of them, 12 patients continued to have a fever. Twenty-five patients had nonremitting (NR) leukemia, and 206 patients achieved complete remission (CR). Differences in the duration of fever between the NR and CR groups were significant (9.6 ± 7.9 vs. 5.1 ± 3.8 days, $P = 0.016$). One hundred and eighty patients had agranulocytosis. Differences in fever duration between the agranulocytosis and nonagranulocytosis groups were significant (6.2 ± 5.1 vs. 4.1 ± 2.6 days, $P = 0.001$). The other sites of infection in these 231 patients were the lung, mouth, digestive tract, and rectum. Blood culture comprised 2635 samples. There were 619 samples, which were positive. Of the 619 positive blood culture samples, 59.9% had Gram-negative bacteria, 39.3% had Gram-positive bacteria, and 0.8% had fungus. The primary pathogens were *Pseudomonas aer*

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uginosa, *Enterobacter cloacae*, *Escherichia coli*, and *Klebsiella pneumoniae*. Of these 231 patients, 217 patients were cured. The effective treatment ratio was 94%. Gram-negative bacteria were the main pathogenic bacteria in patients with acute leukemia in our center. NR primary illness, agranulocytosis, and drug-resistant pathogenic bacteria were all risk factors for poor prognosis.

PMID = 23981504

Title = A topical microemulsion for the prevention of allergic rhinitis symptoms: results of a randomized, controlled, double-blind, parallel group, multicentre, multinational clinical trial (Nares study).

Abstract = Since barrier protection measures to avoid contact with allergens are being increasingly developed, we assessed the clinical efficacy and tolerability of a topical nasal microemulsion made of glycerol esters in patients with allergic rhinitis. Randomized, controlled, double-blind, parallel group, multicentre, multinational clinical trial in which adult patients with allergic rhinitis or rhinoconjunctivitis due to sensitization to birch, grass or olive tree pollens received treatment with topical microemulsion or placebo during the pollen seasons. Efficacy variables included scores in the mini-RQLQ questionnaire, number and severity of nasal, ocular and lung signs and symptoms, need for symptomatic medications and patients' satisfaction with treatment. Adverse events were also recorded. Demographic characteristics were homogeneous between groups and mini-RQLQ scores did not differ significantly at baseline (visit 1). From symptoms recorded in the diary cards, the ME group showed statistically significant better scores for nasal congestion (0.72 vs. 1.01; $p = 0.017$) and mean total nasal symptoms (0.7 vs. 0.9; $p = 0.045$). At visit 2 (pollen season), lower values were observed in the mini-RQLQ in the ME group, although there were no statistically significant differences between groups in both full analysis set (FAS) and patients completing treatment (PPS) populations. The results obtained in the nasal symptoms domain of the mini-RQLQ at visit 2 showed the highest difference (-0.43; 95% CI: -0.88 to 0.02) for the ME group in the FAS population. The topical microemulsion was safe and well tolerated and no major discomforts were observed. Satisfaction rating with the treatment was similar between the groups. The topical application of the microemulsion is a feasible and safe therapy in the prevention of allergic symptoms, particularly nasal congestion. ClinicalTrials.gov Identifier: NCT01478425.

PMID = 19513033

Title = Boardroom tensions rise as investors push for liquidation.

PMID = 26918579

Title = Psychosocial Assessment of Self-Harm Patients and Risk of Repeat Presentation: An Instrumental Variable Analysis Using Time of Hospital Presentation.

Abstract = Clinical guidelines have recommended psychosocial assessment of self-harm patients for years, yet estimates of its impact on the risk of repeat self-harm vary. Assessing the association of psychosocial assessment with risk

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k of repeat self-harm is challenging due to the effects of confounding by indication. We analysed data from a cohort study of 15,113 patients presenting to the emergency departments of three UK hospitals to investigate the association of psychosocial assessment with risk of repeat hospital presentation for self-harm. Time of day of hospital presentation was used as an instrument for psychosocial assessment, attempting to control for confounding by indication. Conventional regression analysis suggested psychosocial assessment was not associated with risk of repeat self-harm within 12 months (Risk Difference (RD) 0.00 95% confidence interval (95%CI) -0.01 to 0.02). In contrast, IV analysis suggested risk of repeat self-harm was reduced by 18% (RD -0.18, 95%CI -0.32 to -0.03) in those patients receiving a psychosocial assessment. However, the instrument of time of day did not remove all potential effects of confounding by indication, suggesting the IV effect estimate may be biased. We found that psychosocial assessments reduce risk of repeat self-harm. This is in-line with other non-randomised studies based on populations in which allocation to assessment was less subject to confounding by indication. However, as our instrument did not fully balance important confounders across time of day, the IV effect estimate should be interpreted with caution.

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PMID = 36186020

Title = Host plant resistance, foliar insecticide application and natural enemies play a role in the management of *Melanaphis sorghi* (Hemiptera: Aphididae) in grain sorghum.

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Abstract = The invasive (Theobald; = Zehntner) is a serious pest of sorghum production in the southern USA. Demonstration of technologies that provide effective control is key to management of this pest. Here, we investigated the effect of host plant resistance (resistant cultivar: DKS37-07 and susceptible cultivar: DKS53-53) and a single foliar insecticide (flupyradifurone: Sivanto Prime) application on infestations and the role of natural enemy populations in grain sorghum production across five locations in four states in southeastern USA. Foliar insecticide application significantly suppressed infestations on both the resistant and susceptible sorghum cultivars across all locations. Planting the host plant resistant cultivar (DKS37-07) significantly reduced aphid infestation across all locations. Plant damage ratings did not vary widely, but there was generally a positive association between aphid counts and observed plant damage, suggesting that increasing aphid numbers resulted in corresponding increase in plant damage. Planting a host plant resistant cultivar and foliar insecticide application generally preserved grain yield. Both sorghum hybrids supported an array of different life stages of natural enemies (predators [lady beetle larvae and adults; hoverfly larvae and lacewing larvae] and parasitoids [a braconid and aphelinid]) for both the sprayed and non-sprayed treatments. We found a strong and significant positive relationship between the natural enemies and the infestation. Results suggest that planting a host plant resistant cultivar and the integration of natural enemies with insecticide control methods in the management of is central to the development of an effective pest management strategy against this invasive pest.

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PMID = 30360405

Title = Fast Adaptive RNN Encoder-Decoder for Anomaly Detection in SMD Assembly Machine.

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Abstract = Surface Mounted Device (SMD) assembly machine manufactures various products on a flexible manufacturing line. An anomaly detection model that can adapt to the various manufacturing environments very fast is required. In this paper, we proposed a fast adaptive anomaly detection model based on a Recurrent Neural Network (RNN) Encoder-Decoder with operating machine sounds. RNN Encoder-Decoder has a structure very similar to Auto-Encoder (AE), but the former has significantly reduced parameters compared to the latter because of its rolled structure. Thus, the RNN Encoder-Decoder only requires a short training process for fast adaptation. The anomaly detection model decides abnormality based on Euclidean distance between generated sequences and observed sequence from machine sounds. Experimental evaluation was conducted on a set of dataset from the SMD assembly machine. Results showed cutting-edge performance with fast adaptation.

PMID = 21695383

Title = Cost-effectiveness of cataract surgery in Japan.

Abstract = To evaluate the cost-effectiveness of cataract surgery through measurement of the cost per quality-adjusted life-year (QALY) in Japan. A total of 549 patients scheduled for cataract surgery at 12 clinical sites from November 2008 through February 2010 were included in the study. Prospective assessment of patient preference-based quality of life (utility) was performed before and after the surgery using the time tradeoff method, EuroQol, and Health Utilities Index Mark 3. Multiple regression analysis was used to determine the correlation between utility and visual acuity. The QALYs gained through cataract surgery were estimated, and cost-utility analysis was performed. The utilities significantly correlated with the visual acuity in the better seeing eye. In all the subgroups (first eye surgery, second eye surgery, and bilateral surgery), mean utility improvement was statistically significant. Average QALYs for unilateral cataract surgery and bilateral cataract surgery were 2.40 and 3.40, respectively. The cost per QALY gained from surgery was estimated at ¥122,472 (US \$1,307) for unilateral surgery and ¥145,562 (US \$1,553) for bilateral surgery. Routine cataract surgery in Japan is highly cost-effective. Factors that contribute to this are the high clinical effectiveness of the surgery, the substantial improvement in patient-perceived quality of life, and the reasonable cost of the surgery.

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PMID = 34241752

Title = Causally Interpretable Meta-analysis: Application in Adolescent HIV Prevention.

Abstract = Endowing meta-analytic results with a causal interpretation is challenging when there are differences in the distribution of effect modifiers among the populations underlying the included trials and the target population where the results of the meta-analysis will be applied. Recent work on transparency methods has described identifiability conditions under which the c

collection of randomized trials in a meta-analysis can be used to draw causal inferences about the target population. When the conditions hold, the methods enable estimation of causal quantities such as the average treatment effect and conditional average treatment effect in target populations that differ from the populations underlying the trial samples. The methods also facilitate comparison of treatments not directly compared in a head-to-head trial and assessment of comparative effectiveness within subgroups of the target population. We briefly describe these methods and present a worked example using individual participant data from three HIV prevention trials among adolescents in mental health care. We describe practical challenges in defining the target population, obtaining individual participant data from included trials and a sample of the target population, and addressing systematic missing data across datasets. When fully realized, methods for causally interpretable meta-analysis can provide decision-makers valid estimates of how treatments will work in target populations of substantive interest as well as in subgroups of these populations.

PMID = 27202515

Title = A macro Economic Analysis of 65 Year-Old 'Rendez-vous Vaccinal' in France: What is the Return on Investment?

PMID = 19270233

Title = Clinical advantages of peritoneal dialysis.

Abstract = Chronic peritoneal dialysis (PD) continues to be an option in the treatment of end-stage renal disease (ESRD). Medical, social, and logistic considerations are needed to determine the most suitable dialysis option for an ESRD patient. Peritoneal dialysis has been advancing in terms of technique, new exchange systems, and a new generation of solutions. A survival advantage for PD patients has been noted over the first 1 - 2 years after the onset of the dialysis. Most patients may need both dialytic modalities in time, and therefore the sequence of the treatment options is important. Compared with hemodialysis patients, PD patients seem much more satisfied in most of the studies that evaluate quality of life during treatment. A preference for PD may be more advantageous in the pre-transplantation period. Moreover, much lower doses of erythropoietin have been shown to be sufficient for PD patients. Also, PD has been reported to protect residual renal functions better in many studies.

PMID = 21551214

Title = Risk prediction of incident coronary heart disease in The Netherlands : re-estimation and improvement of the SCORE risk function.

Abstract = To re-estimate the SCORE risk function using individual data on risk factors and coronary heart disease (CHD) incidence from the Dutch Cardiovascular Registry Maastricht (CAREMA) population-based cohort study; to evaluate changes that may improve risk prediction after re-estimation; and to compare the performance of the resulting CAREMA risk function with that of existing risk scores. The cohort consisted of 21,148 participants, born in 1927-1977 a

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nd randomly sampled from the Maastricht region in 1987-1997. After follow-up (median 10.9 years), 783 incident CHD cases occurred. Model performance was assessed by discrimination and calibration. The additional value of including other risk factors or current risk factors in a different manner was evaluated using the net reclassification index (NRI). The c statistic of the re-estimated SCORE model was 0.799 (95% CI 0.782-0.816). Separating the total/high-density lipoprotein (HDL) cholesterol ratio into total and HDL cholesterol levels did not improve the c statistic ($p = 0.22$), but reclassified 6.0% of the participants into a more appropriate risk category ($p < 0.001$) compared with the re-estimated model. The resulting CAREMA function reclassified 28% of the participants into a more appropriate risk category than the Framingham score. Compared with the SCORE functions for high- and low-risk regions, the NRIs were 28% and 35%, respectively, which can largely be explained by the difference in outcome definition (CHD incidence vs. CHD mortality). In this Dutch population, a re-estimated SCORE function with total and HDL cholesterol levels instead of the cholesterol ratio can be used for the risk prediction of CHD incidence.

PMID = 22212485

Title = (-)-Epigallocatechin-3-gallate increases the number of neural stem cells around the damaged area after rat traumatic brain injury.

Abstract = A major component of green tea is (-)-epigallocatechin gallate (EGCG), which has strong antioxidant properties. Here, we investigated the effect of EGCG on neural stem cell (NSC) proliferation around the damaged area following traumatic brain injury (TBI). In this study, male Wistar rats that had access to normal drinking water, or water containing 0.1% (w/v) EGCG, ad libitum received TBI at 10 weeks of age. Immunohistochemistry revealed that the number of nestin-positive cells around the damaged area after TBI in the EGCG treatment group increased significantly compared with the normal water group ($P < 0.05$). However, the number of 8-hydroxy-2'-deoxyguanosine-, 4-hydroxy-2-nonenal-, single-stranded DNA (ssDNA)-positive cells and the level of peroxidation around the damaged area after TBI significantly decreased in the EGCG treatment group when compared with the water group ($P < 0.05$). Furthermore, in contrast to the EGCG group, almost all ssDNA-positive cells in the water group co-localized with NeuN and nestin-staining. Ex vivo studies revealed that spheres could only be isolated from injured brain tissue in the water group at 3 days following TBI. However, in the EGCG group, spheres could be isolated at both 3 and 7 days following TBI. A greater number of spheres could be isolated from the EGCG group, which differentiated into neurons and glia in culture without basic fibroblast growth factor. These results indicate that consumption of water containing EGCG pre- and post-TBI inhibits free radical-induced degradation of NSCs, which have the potential to differentiate into neurons and glia around the area of damage following TBI.

PMID = 31479792

Title = Adult Spinal Arteriovenous Malformations: Natural History and a Multicenter Study of Short-Term Surgical Outcomes.

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Abstract = Spinal arteriovenous malformations (SAVMs) are a very rare and complex spinal cord pathology that require high clinical acumen to diagnose and treat. Management includes both nonoperative and operative paradigms. A review of the literature yields a paucity of data regarding the surgical outcomes of SAVMs, with the majority of data limited to single-center outcomes and/or small sample sizes. The purpose of this study was to use a multi-institutional international database to study the natural history of SAVMs. We used the American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) database to select patients that underwent laminectomy for surgical excision of a SAVM between 2008 and 2017. The data from 196 patients were studied (65.8% male, 34.2% female). A majority of cases were in the thoracic region (53.6%), followed by thoracolumbar (31.6%) and cervical (14.8%) regions. The mean age was 57.4 years and 52.5% patients were graded ASA class 3-5 before the operation. The mean operation time was 215 minutes, with a significantly lower operative time for thoracic arteriovenous malformations (195.6 minutes) when compared with cervical (266.6 minutes) and thoracolumbar (223.7 minutes). The mean length of hospital stay was 6.4 days. Patients had a 6.6% readmission rate and a 4.6% reoperation rate within 30 days. This study presents the largest analysis of patients undergoing surgery for SAVMs and 30-day postoperative outcomes. Operative time differed based on SAVM location. The three most frequent complications (deep vein thrombosis, wound infection, and UTI) occurred at rates of 3.6% or less.

PMID = 24019815

Title = Oral health during pregnancy: A study from women with pregnancy.

PMID = 39227219

Title = Diagnostic Performance of Multiparametric MRI for the Detection of suspected Prostate Cancer in Biopsy-Naïve Patients: A Systematic Review and Meta-analysis.

Abstract = This meta-analysis aimed to assess the diagnostic accuracy of multiparametric MRI (mpMRI) in detecting suspected prostate cancer (PCa) in biopsy-naïve men. PubMed, Scopus, and the Cochrane Library databases were systematically searched for studies published from January 2013 to April 2024. Sixteen studies comprising 4973 patients met the inclusion criteria. Data were extracted to construct 2x2 contingency tables for sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV). A random-effects model was used for pooled estimation, and subgroup analyses were conducted. Summary receiver operating characteristic (SROC) curves were generated to summarize overall diagnostic performance. The overall detection rate of PCa across studies was 57.3%. For detecting any PCa, mpMRI showed pooled sensitivity of 82% (95% CI, 80-83%) and specificity of 62% (95% CI, 60-64%), with positive likelihood ratio (LR) of 1.97 (95% CI, 1.71-2.26), negative LR of 0.28 (95% CI, 0.24-0.34), and diagnostic odds ratio (DOR) of 7.34 (95% CI, 5.60-9.63), and an area under the SROC curve of 0.81. For clinically significant PCa (csPCa), mpMRI had pooled sensitivity of 88% (95% CI, 87-90%) and specificity of 64% (95% CI, 63-66%), with positive LR of 2.49 (95% CI, 2.03-3.05), negative LR of 0.20 (95% CI, 0.16-0.25), DOR of 13.83 (95% CI, 9.14-20.9), and area

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under the curve of 0.90. This meta-analysis suggests that mpMRI is effective in detecting PCa in biopsy-naive patients, particularly for csPCa. It can help reduce unnecessary biopsies and lower the risk of missing clinically significant cases, thereby guiding informed biopsy decisions.

PMID = 38899186

Title = Best Practice of Peritoneal Dialysis-Associated Gram-Negative Peritonitis in Children: Insights From the International Pediatric Peritoneal Dialysis Network Registry.

Abstract = Gram-negative peritonitis (GNP) is associated with significant morbidity in children receiving long-term peritoneal dialysis (PD) and current treatment recommendations are based on limited data. Analysis of 379 GNP episodes in 308 children (median age 6.9 years, interquartile range [IQR]: 3.0-13.6) from 45 centers in 28 countries reported to the International Pediatric Peritoneal Dialysis Network registry between 2011 and 2023. Overall, 74% of episodes responded well to empiric therapy and full functional recovery (FFR) was achieved in 82% of cases. Bacterial susceptibility to empiric antibiotics and lack of severe abdominal pain at onset were associated with a good initial response. Risk factors for failure to achieve FFR included severe abdominal pain at onset and at 60 to 72 hours from treatment initiation (odds ratio [OR]: 3.81, 95% confidence interval [CI]: 2.01-7.2 and OR: 3.94, 95% CI: 1.06-14.67, respectively), spp. etiology (OR: 1.73, 95% CI: 1.71-4.21) and bacterial resistance to empiric antibiotics (OR: 2.40, 95% CI: 1.21-4.79); the risk was lower with the use of monotherapy as definitive treatment (OR: 0.40, 95% CI: 0.21-0.77). Multivariate analysis showed no benefit of dual antibiotic therapy for treatment of peritonitis after adjustment for age, presenting symptomatology, 60 to 72-hour treatment response, and treatment duration. Monotherapy with ceftazolin in susceptible *Enterobacterales* peritonitis resulted in a similar FFR rate (91% vs. 93%) as treatment with ceftazidime or cefepime monotherapy. Detailed microbiological assessment, consisting of patient-specific and center-specific antimicrobial susceptibility data, should guide empiric treatment. Treatment "deescalation" with the use of monotherapy and narrow spectrum antibiotics according to susceptibility data is not associated with inferior outcomes and should be advocated in the context of emerging bacterial resistance.

PMID = 22873209

Title = Physical-chemical and microbiological changes in Cerrado Soil under differing sugarcane harvest management systems.

Abstract = Sugarcane cultivation plays an important role in Brazilian economy, and it is expanding fast, mainly due to the increasing demand for ethanol production. In order to understand the impact of sugarcane cultivation and management, we studied sugarcane under different management regimes (pre-harvest burn and mechanical, unburnt harvest, or green cane), next to a control treatment with native vegetation. The soil bacterial community structure (including an evaluation of the diversity of the ammonia oxidizing (*amoA*) and denitrifying (*nirK*) genes), greenhouse gas flow and several soil physicochemical properties

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erties were evaluated. Our results indicate that sugarcane cultivation in this region resulted in changes in several soil properties. Moreover, such changes are reflected in the soil microbiota. No significant influence of soil management on greenhouse gas fluxes was found. However, we did find a relationship between the biological changes and the dynamics of soil nutrients. In particular, the burnt cane and green cane treatments had distinct modifications. There were significant differences in the structure of the total bacterial, the ammonia oxidizing and the denitrifying bacterial communities, being that these groups responded differently to the changes in the soil. A combination of physical and chemical factors was correlated to the changes in the structures of the total bacterial communities of the soil. The changes in the structures of the functional groups follow a different pattern than the physicochemical variables. The latter might indicate a strong influence of interactions among different bacterial groups in the N cycle, emphasizing the importance of biological factors in the structuring of these communities. Sugarcane land use significantly impacted the structure of total selected soil bacterial communities and ammonia oxidizing and denitrifier gene diversities in a Cerrado field site in Central Brazil. A high impact of land use was observed in soil under the common burnt cane management. The green cane soil also presented different profiles compared to the control soil, but to a lesser degree.

PMID = 37903993

Title = Unmanipulated haploidentical hematopoietic stem cell transplantation for mixed phenotype acute leukemia: a single center study.

PMID = 31295224

Title = Use of Whole Genome Sequencing for the Molecular Comparison of *Neisseria gonorrhoeae* Isolates With Decreased Susceptibility to Extended Spectrum Cephalosporins From 2 Geographically Different Regions in America.

Abstract = *Neisseria gonorrhoeae* isolates with reduced susceptibility or resistance to the recommended first-line antimicrobial therapy have been described in several countries. The purpose of this study was to use genome analyses to compare the molecular characteristics of *N. gonorrhoeae* isolates with decreased susceptibility to extended-spectrum cephalosporin from Ontario, Canada, and Argentina. A total of 128 *N. gonorrhoeae* isolates, collected in 2015, were included. The susceptibility to penicillin G, tetracycline, ciprofloxacin, cefixime, ceftriaxone, and azithromycin was determined using the agar dilution method. Isolates were subjected to whole genome sequencing, and an in silico analysis was performed to identify antimicrobial resistance determinants and for genotyping. Decreased susceptibility to extended-spectrum cephalosporin was mainly associated with *penA* mosaic allele 34.001, together with an *mtrR* promoter A deletion and *porB1b* alterations G120K/A121N. *N. gonorrhoeae* multiantigen sequence typing ST1407 or closely related genotypes were identified circulating in both regions. An international multi-drug resistant clone of *N. gonorrhoeae* was associated with decreased susceptibility to extended-spectrum cephalosporin (ESC) in 2 different regions in America. Evidence of clonal dissemination of the organism in some regions suggests that the strength of surveillance programs and establishment of collaborative projects are essential.

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PMID = 27011756

Title = A review of ethanol wet-bonding: Principles and techniques.

Abstract = Conventional water wet-bonding technique has been advocated by many scientists, but the excess water will induce suboptimal polymerization of dental adhesives, phase separation, and nanoleakage, which will influence the longevity of resin-dentin interfaces. Recent studies have put forward a new concept, ethanol wet-bonding. This technique can increase in dentin bond durability. This review focuses on the principles of ethanol wet-bonding, its surface treatment methods.

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PMID = 25740892

Title = An out-of-body experience: the extracellular dimension for the transmission of mutualistic bacteria in insects.

Abstract = Across animals and plants, numerous metabolic and defensive adaptations are a direct consequence of symbiotic associations with beneficial microbes. Explaining how these partnerships are maintained through evolutionary time remains one of the central challenges within the field of symbiosis research. While genome erosion and co-cladogenesis with the host are well-established features of symbionts exhibiting intracellular localization and transmission, the ecological and evolutionary consequences of an extracellular lifestyle have received little attention, despite a demonstrated prevalence and functional importance across many host taxa. Using insect-bacteria symbioses as a model, we highlight the diverse routes of extracellular symbiont transfer. Extracellular transmission routes are unified by the common ability of the bacterial partners to survive outside their hosts, thereby imposing different genomic, metabolic and morphological constraints than would be expected from a strictly intracellular lifestyle. We emphasize that the evolutionary implications of symbiont transmission routes (intracellular versus extracellular) do not necessarily correspond to those of the transmission mode (vertical versus horizontal), a distinction of vital significance when addressing the genomic and physiological consequences for both host and symbiont.

PMID = 25378133

Title = Off-target assessment of CRISPR-Cas9 guiding RNAs in human iPS and mouse ES cells.

Abstract = The CRISPR-Cas9 system consists of a site-specific, targetable DNA nuclease that holds great potential in gene editing and genome-wide screening applications. To apply the CRISPR-Cas9 system to these assays successfully, the rate at which Cas9 induces DNA breaks at undesired loci must be understood. We characterized the rate of Cas9 off-target activity in typical Cas9 experiments in two human and one mouse cell lines. We analyzed the Cas9 cutting activity of 12 gRNAs in both their targeted sites and ~90 predicted off-target sites per gRNA. In a Cas9-based knockout experiment, gRNAs induced detectable Cas9 cutting activity in all on-target sites and in only a few off-target sites genome-wide in human 293FT, human-induced pluripotent stem (hiPS) cells, a

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nd mouse embryonic stem (ES) cells. Both the cutting rates and DNA repair patterns were highly correlated between the two human cell lines in both on-target and off-target sites. In clonal Cas9 cutting analysis in mouse ES cells, biallelic Cas9 cutting was observed with low off-target activity. Our results show that off-target activity of Cas9 is low and predictable by the degree of sequence identity between the gRNA and a potential off-target site. Off-target Cas9 activity can be minimized by selecting gRNAs with few off-target sites of near complementarity.

PMID = 39173068

Title = The ion channel Anoctamin 10/TMEM16K coordinates organ morphogenesis across scales in the urochordate notochord.

Abstract = During embryonic development, tissues and organs are gradually shaped into their functional morphologies through a series of spatiotemporally tightly orchestrated cell behaviors. A highly conserved organ shape across metazoans is the epithelial tube. Tube morphogenesis is a complex multistep process of carefully choreographed cell behaviors such as convergent extension, cell elongation, and lumen formation. The identity of the signaling molecules that coordinate these intricate morphogenetic steps remains elusive. The notochord is an essential tubular organ present in the embryonic midline region of all members of the chordate phylum. Here, using genome editing, pharmacology and quantitative imaging in the early chordate *Ciona intestinalis* we show that Anol10/Tmem16k, a member of the evolutionarily ancient family of transmembrane proteins called Anoctamin/TMEM16 is essential for convergent extension, lumen expansion, and connection during notochord morphogenesis. We find that Anol10/Tmem16k works in concert with the plasma membrane (PM) localized Na⁺/Ca²⁺ exchanger (NCX) and the endoplasmic reticulum (ER) residing SERCA, RyR, and IP3R proteins to establish developmental stage specific Ca²⁺ signaling molecular modules that regulate notochord morphogenesis and Ca²⁺ dynamics. In addition, we find that the highly conserved Ca²⁺ sensors calmodulin (CaM) and Ca²⁺/calmodulin-dependent protein kinase (CaMK) show an Anol10/Tmem16k-dependent subcellular localization. Their pharmacological inhibition leads to convergent extension, tubulogenesis defects, and deranged Ca²⁺ dynamics, suggesting that Anol10/Tmem16k is involved in both the "encoding" and "decoding" of developmental Ca²⁺ signals. Furthermore, Anol10/Tmem16k mediates cytoskeletal reorganization during notochord morphogenesis, likely by altering the localization of 2 important cytoskeletal regulators, the small GTPase Ras homolog family member A (RhoA) and the actin binding protein Cofilin. Finally, we use electrophysiological recordings and a scramblase assay in tissue culture to demonstrate that Anol10/Tmem16k likely acts as an ion channel but not as a phospholipid scramblase. Our results establish Anol10/Tmem16k as a novel player in the vertebrate molecular toolkit that controls organ morphogenesis across scales.

PMID = 30095548

Title = Association of pre-operative troponin levels with major adverse cardiac events and mortality after noncardiac surgery: A systematic review and meta-analysis.

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Abstract = Circulating cardiac troponin levels are powerful predictors of prognosis in many clinical settings, but their association with outcomes after noncardiac surgery is unclear. The aim of this systematic review was to summarise current evidence on the association of pre-operative troponin elevation with postoperative major adverse cardiac events (MACE) and mortality in patients undergoing noncardiac surgery. Systematic review of observational studies with meta-analysis. PubMed, EMBASE and Science Citation Index Expanded (ISI Web of Science) from their inception to 1 October 2017. Observational studies reporting the associations between pre-operative troponin levels and MACE and all-cause mortality after noncardiac surgeries were included. Ten studies met the eligibility criteria. The entire body of evidence addressing the research question was based on a total of 10 371 patients: 4.7 to 68.3% (median 23.8%) of patients had elevated troponin levels before surgery. Elevated pre-operative troponin was significantly associated with short-term MACE (seven studies, 5180 patients: odds ratio (OR) 6.92, 95% confidence interval (CI) 3.85 to 12.42), short-term mortality (five studies, 6103 patients: OR 4.23, 95% CI 2.27 to 7.89) and long-term mortality (two studies, 760 patients: OR 2.51, 95% CI 1.47 to 4.29). The associations remained significant when only multivariate-adjusted results were analysed. Overall, the reviewers' certainty about the summary estimates of the associations was very low. Current evidence suggests that pre-operative high troponin levels are significantly associated with adverse cardiac events and mortality after noncardiac surgery. This systematic review was registered in the International Prospective Register of Systematic Reviews (Centre for Reviews and Dissemination 42017077837).

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PMID = 30231422

Title = Dose-Response Determination in Multistage Endpoint Clinical Trials.
Abstract = Improper dose selection remains one of the key drivers of the large attrition rates observed in confirmatory studies in clinical drug development. Many factors contribute to this problem, such as insufficient resources allocated to dose-ranging studies and the use of statistical methods better suited for phase 3 studies than for dose selection. This paper describes a model-based dose-finding method that leverages all longitudinal data collected in the trial to estimate the dose-response relationship at any desired visit, using it to estimate target doses of interest, such as the minimum dose producing a desired clinical benefit. The approach uses a Markov chain model to account for correlation in the repeated measures obtained on the same patient. An actual phase 2 study and simulations are used to illustrate the methodology.

PMID = 24474266

Title = Tear meniscus volume changes in dacryocystorhinostomy evaluated with quantitative measurement using anterior segment optical coherence tomography.
Abstract = To evaluate tear meniscus (TM) changes in external dacryocystorhinostomy (ex-DCR) with quantitative measurement of tear meniscus height (TMH), area (TMA), and volume (TMV) using anterior segment optical coherence tomography (AS-OCT). Twenty-five eyes from 21 patients (11 males and 10 females) with primary acquired nasolacrimal duct obstruction (PANDO) who received ex-DCR

from May 2010 to April 2011 were evaluated prospectively on their TMH, TMA, and TMV changes by AS-OCT. Measurements were performed before surgery (Pre) and 2 weeks (2W), 2 months (2M), and 6 months (6M) after surgery. Data were analyzed using Kruskal-Wallis test, Wilcoxon signed-rank test with Bonferroni adjustment, and Spearman's rank correlation coefficient. All patients had a good clinical course, and there were significant differences in the values of each TM parameter before and after surgery ($P < 0.0001$). The median values of TMH (mm) throughout the observation period were 0.707 (Pre), 0.334 (2W), 0.278 (2M), and 0.277 (6M). The TMA median values (mm(2)) were 0.1097 (Pre), 0.0483 (2W), 0.0255 (2M), and 0.0224 (6M). The TMV median values (mm(3)) were 0.7799 (Pre), 0.1614 (2W), 0.1071 (2M), and 0.1553 (6M). There were significant differences in TMH, TMA, and TMV reduction at each postoperative visit as compared to preoperative values ($P < 0.001$). In addition, TMH change 6 months after ex-DCR showed a significant positive correlation with age ($r = 0.4434$, $P = 0.0264$). The perioperative TM changes in ex-DCR can be evaluated noninvasively and quantitatively by using AS-OCT.

PMID = 35532020

Title = Ecological characterization of a cutaneous leishmaniasis outbreak through remotely sensed land cover changes.

Abstract = In this work we assessed the environmental factors associated with the spatial distribution of a cutaneous leishmaniasis (CL) outbreak during 2015-2016 in north-eastern Argentina to understand its typical or atypical eco-epidemiological pattern. We combined locations of human CL cases with relevant predictors derived from analysis of remote sensing imagery in the framework of ecological niche modelling and trained MaxEnt models with cross-validation for predictors estimated at different buffer areas relevant to CL vectors (50 and 250 m radii). To account for the timing of biological phenomena, we considered environmental changes occurring in two periods, 2014-2015 and 2015-2016. The remote sensing analysis identified land cover changes in the surroundings of CL cases, mostly related to new urbanization and flooding. The distance to such changes was the most important variable in most models. The weighted average map denoted higher suitability for CL in the outskirts of the city of Corrientes and in areas close to environmental changes. Our results point to a scenario consistent with a typical CL outbreak, i.e. changes in land use or land cover are the main triggering factor and most affected people live or work in border habitats.

PMID = 18695105

Title = Determinants of the optic cup to disc ratio in an Asian population: the Singapore Malay Eye Study (SiMES).

Abstract = To describe the distribution and determinants of the optic cup to disc ratio (CDR) in Malay adults in Singapore. This population-based, age-stratified study examined 3280 Malay people aged 40 to 80 years in Singapore. Participants underwent a standardized interview and an ocular examination. A slitlamp examination measured the vertical dimensions of the disc and cup, excluding areas of peripapillary atrophy and the Elschnig scleral ring. Vertical

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Commented [AB210]: acronym

Commented [AB211]: Could be better with a space

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CDR was recorded for 3228 right eyes and 3237 left eyes. The mean (SD) CDR was 0.40 (0.15) in both eyes. The CDR in the right eye increased with age ($P < .001$) and was greater in men vs women (age-adjusted CDR, 0.42 vs 0.39; $P < .001$). In multiple linear regression, significant determinants of greater CDR were increasing age, male sex, higher intraocular pressure (IOP), lower diastolic blood pressure, lower body mass index, and previous cataract surgery. Of these, higher IOP was the most important determinant of the CDR. After excluding 149 persons with glaucoma, male sex, higher IOP, lower diastolic blood pressure, lower body mass index, and diabetes mellitus were significant predictors of greater CDR. Greater vertical CDR was related to male sex, higher IOP, lower diastolic blood pressure, and lower body mass index.

PMID = 32925889

Title = Erratum: A Semiautomated ChIP-Seq Procedure for Large-scale Epigenetic Studies.

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Abstract = An erratum was issued for: A Semiautomated ChIP-Seq Procedure for Large-scale Epigenetic Studies. An author's name was updated. The name was corrected from: Pandurangan Vijayanad to: Pandurangan Vijayanand.

Commented [AB214]: Misspelled name, but deliberate

PMID = 32142220

Title = Response to "Aligning Clinical Practice with Residency Education in Psychiatry".

PMID = 27632181

Title = Neuro-otology- some recent clinical advances.

Abstract = Vestibular disorders manifesting as vertigo, chronic dizziness and imbalance are common problems in neurological practice. Here, we review some recent interesting and important advances in diagnosis of vestibular disorders using the video head impulse test and in the management of benign positional vertigo and migrainous vertigo.

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PMID = 23322112

Title = Flupirtine, a re-discovered drug, revisited.

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Abstract = Flupirtine was developed long before K(V)7 (KCNQ) channels were known. However, it was clear from the beginning that flupirtine is neither an opioid nor a nonsteroidal anti-inflammatory analgesic. Its unique muscle relaxing activity was discovered by serendipity. In the meantime, broad and intensive research has resulted in a partial clarification of its mode of action. Flupirtine is the first therapeutically used K(V)7 channel activator with additional GABA(A)ergic mechanisms and thus the first representative of a novel class of analgesics. The presently accepted main mode of its action, potassium K(V)7 (KCNQ) channel activation, opens a series of further therapeutic possibilities. One of them has now been realized: its back-up compound, the bioisostere retigabine, has been approved for the treatment of epilepsy.

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PMID = 34309656

Title = Thoughts on the Long-Term Effects of Platelet-Rich Fibrin on Fat Graft Survival.

PMID = 28902489

Title = Oral siRNA Delivery to Treat Colorectal Liver Metastases.

Abstract = Convenient multiple dosing makes oral administration an ideal route for delivery of therapeutic siRNA. However, hostile GI environments and non-specific biological trafficking prevent achieving appropriate bioavailability of siRNA. Here, an orally administered AuNP-siRNA-glycol chitosan-taurocholic acid nanoparticle (AR-GT NPs) was developed to selectively deliver Akt2 siRNA and treat colorectal liver metastases (CLM). AR-GT NPs are dual padlocked non-viral vectors in which the initially formed AuNP-siRNA (AR) conjugates are further encompassed by bifunctional glycol chitosan-taurocholic acid (GT) conjugates. Covering the surface of AR with GT protected the Akt2 siRNA from GI degradation, facilitated active transport through enterocytes, and enhanced selective accumulation in CLM. Our studies in CLM animal models resulted in the reduction in Akt2 production, followed by initiation of apoptosis in cancer cells after oral administration of Akt2 siRNA-loaded AR-GT. This therapeutic siRNA delivery system may be a promising approach in treating liver-associated diseases.

PMID = 39501250

Title = Nutrition and diet in children with orofacial clefts in Africa: a scoping review.

Abstract = The burden of orofacial clefts (OFCs) has declined globally except in sub-Saharan Africa, with a great disease burden in North Africa. Children with OFCs have a high risk of malnutrition, and African countries have some of the highest malnutrition rates. This scoping review assessed the status of research on OFCs and nutrition and feeding among children living in African countries. We followed the Joanna Briggs Institute guidelines for conducting scoping reviews. We searched eleven databases for articles on malnutrition and feeding among children with OFCs living in African countries. No restriction was done by type of study or publication date. Books, book chapters, and reviews were excluded. Only publications in English language were included. We extracted information about the publication year, study design, setting, location, participants' age, data collection methods, international collaboration, and funding. We classified articles into studies assessing (1) the impact of nutritional deficiencies during pregnancy on OFCs, (2) the impact of OFCs on malnutrition, (3) feeding problems in children with OFCs, and (4) the impact of nutritional status on OFCs repair outcomes. We calculated frequencies and used bar charts and a map. Out of 208 search results, 36 were duplicates, and 25 eventually fit the inclusion criteria, with 52% retrieved from Google Scholar. About 80% of the studies were from four countries: Nigeria, South Africa, Ghana, and Uganda; 72% were hospital-based and 52% were cross-sectional. The most frequent data collection method was clinical examination and questionnaires. Most studies focused on feeding problems in children with OFCs (44%) and the impact of OFCs on malnutrition (32%). International collaboration was

observed in six studies, with one study showing South-South collaboration. Only two studies were funded. There is a predominance of under-funded descriptive research not indexed by international databases. Minimal research has been directed to population-level OFC preventive programs in primary healthcare settings and assessing interventions supporting children with OFCs. A research agenda is needed to prioritize research needs and secure funds to support South-South collaboration to address the nutrition and feeding-related problems associated with OFCs.

PMID = 36372578

Title = Dynamic predictors of in-hospital and 3-year mortality after traumatic brain injury: A retrospective cohort study.

Abstract = Mortality risks after Traumatic Brain Injury (TBI) are understudied in critical illness. We sought to identify risks of mortality in critically ill patients with TBI using time-varying covariates. This single-center, six-year (2006-2012), retrospective cohort study measured demographics, injury characteristics, and daily data of acute TBI patients in the Intensive Care Unit (ICU). Time-varying Cox proportional hazards models assessed in-hospital and 3-year mortality. Post-TBI ICU patients (n = 2664) experienced 20% in-hospital mortality (n = 529) and 27% (n = 706) 3-year mortality. Glasgow Coma Scale motor subscore (hazard ratio (HR) 0.58, p < 0.001), pupil reactivity (HR 3.17, p < 0.001), minimum glucose (HR 1.44, p < 0.001), mSOFA score (HR 1.81, p < 0.001), coma (HR 2.26, p < 0.001), and benzodiazepines (HR 1.38, p < 0.001) were associated with in-hospital mortality. At three years, public insurance (HR 1.78, p = 0.011) and discharge disposition (HR 4.48, p < 0.001) were associated with death. Time-varying characteristics influenced in-hospital mortality post-TBI. Socioeconomic factors primarily affect three-year mortality.

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PMID = 39465402

Title = Mitral Annular Disjunction Associated with Ventricular Dilation in Pediatric Marfan Syndrome: A Cardiovascular Magnetic Resonance Study.

Abstract = Mitral annular disjunction (MAD) has increasingly been recognized as a marker for adverse cardiovascular events in Marfan syndrome (MFS). As recent adult data links MFS with left ventricular (LV) dilation and reduced ejection fraction (LVEF), we hypothesized that MAD may be associated with LV dilation in pediatric MFS patients. A retrospective analysis was performed among MFS patients < 19 years old at initial cardiac MRI (CMR). MAD and mitral valve prolapse (MVP) were assessed by CMR or most proximate echo. CMR-derived left ventricular end-diastolic (LVEDV) and end-systolic (LVESV) volumes were measured. Indexed volumes, absolute and indexed z-scores, and LVEF were calculated. The combined volume load from mitral and aortic regurgitation was indexed to LV stroke volume, allowing exclusion of patients with greater than mild volume load or prior MV intervention. MAD association with LV volumes and z-scores was then assessed. Forty-two patients were analyzed (median age 13.5 years old, IQR [10.9, 15.3]). MAD was present in 28 patients (66.7%), and MVP was present in 13 patients (31.0%). Absolute LVEDV z-score was > 2 in 35.7% of patients, LVESV z-score was > 2 in 42.9%, and LVEF was < 55% in 45.2%. In multi

variable analysis including MVP, MAD remained independently associated with elevated absolute LVESV z-score > 2 (RR 3.88, 95% CI 1.02-14.69, p = 0.046). MAD was associated with CMR-derived volume-load-independent LV dilation among pediatric MFS patients. Prospective studies are needed to further understand this association and its relationship with LV dilation over time.

PMID = 34981311

Title = Clinical Significance of Surgical Resection Timing from Endoscopic Stenting for Left-Sided Large-Bowel Obstruction in Colorectal Cancer.

Abstract = The optimal interval between self-expanding metallic stent (SEMS) insertion and surgery remains controversial in malignant left-sided large-bowel obstruction (MLLO), especially with respect to oncologic aspects. The aim of this study is to examine whether the time interval to surgery is related to oncologic outcomes. Prospectively collected database of MLLO between January 2005 and December 2017 were reviewed. They were divided according to established cut-off value of 14 days for the time interval to surgery. The two groups (early and late groups) were compared with respect to disease-free survival (DFS) and overall survival (OS). Additional subgroup analysis was performed using the established cut-off values for patients with stage II and III tumors. A total of 149 patients underwent surgery after SEMS insertion. There were no significant differences between the early and late groups in the 5-year DFS (78.0% vs 72.4%; P = 0.513) and the OS (74.2% vs 75.7%; P = 0.864) rates in all MLLO. Subgroup analysis showed that there were significant differences between the two groups for DFS and OS in stage II MLLO. The multivariate Cox regression analysis in stage II MLLO demonstrated that the time to surgery was a prognostic factor for DFS (HR, 2.051; 95% CI, 1.528-42.136; P = 0.014) and for OS (HR, 4.947; 95% CI, 1.520-16.107; P = 0.008). The time to surgery was demonstrated not to be a significant prognostic factor in all MLLO. However, it was a prognostic factor for patients with stage II MLLO.

PMID = 36686164

Title = Yeast derivatives as a source of bioactive components in animal nutrition: A brief review.

Abstract = With a long history of inclusion within livestock feeding programs, yeast and their respective derivatives are well-understood from a nutritional perspective. Originally used as sources of highly digestible protein in young animal rations in order to offset the use of conventional protein sources such as soybean and fish meal, application strategies have expanded in recent years into non-nutritional uses for all animal categories. For the case of yeast derivatives, product streams coming from the downstream processing of nutritional yeast, the expansion in use cases across species groups has been driven by a greater understanding of the composition of each derivative along with deeper knowledge of mechanistic action of key functional components. From improving feed efficiency, to serving as alternatives to antibiotic growth promoters and supporting intestinal health and immunity while mitigating pathogen shedding, new use cases are driven by a recognition that yeast derivatives contain specific bioactive compounds that possess functional properties. This

review will attempt to highlight key bioactive categories within industrially applicable yeast derivatives and provide context regarding identification and characterization and mechanisms of action related to efficacy within a range of experimental models.

PMID = 30137235

Title = Plea for Standardized Reporting and Justification of Propensity Score Methods.

PMID = 34490459

Title = Travel vaccination examined through the tourism lens.

PMID = 25351429

Title = Inflammatory optic disc edema due to Sarcoidosis mimicking malignant hypertension.

Abstract = A common ocular manifestation of sarcoidosis is anterior uveitis. Posterior uveitis is uncommon and optic disc edema is rare. We report one such case in which the initial presentation was mimicking malignant hypertension as the patient had a recent record of high blood pressure. However, the painful progressive vision loss due to optic disc edema, along with anterior uveitis, and histological proof of non-caseating granulomas on transbronchial lung biopsy clinched the diagnosis of ocular sarcoidosis. There was complete resolution of signs and symptoms with institution of steroids. There was also probable cardiac involvement. This case highlights the fact that all disc edemas in a diabetic and hypertensive patients is not just due to malignant hypertension, even if there is a recent history of elevated blood pressure.