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Title :	[Antibiotic intravenous-to-oral switch guidelines: barriers to adherence and possible solutions](#)
Author :	John Warburton, Karen Hodson and Delyth James
Journal :	International Journal of Pharmacy Practice: Volume 22, Issue 5, pages 345–353, October 2014
Abstract :	Objectives To identify reasons for poor adherence to antibiotic intravenous-to-oral switch guidelines and to explore the possible solutions. To rate the importance of the barriers and solutions identified, as perceived by a multidisciplinary expert panel. Methods Three-round Delphi study in an expert panel comprising doctors, nurses and pharmacists, with concurrent semi-structured interviews. Key findings The three rounds of the Delphi were completed by 13 out of the 30 healthcare professionals invited to participate. No nurses were included in the final round. Consensus was achieved for 28 out of 35 statements, with the most important barrier being that of inappropriate antibiotic review at the weekend, and the most important solution being to raise guideline awareness. The findings from the seven interviews (three doctors, two pharmacists and two nurses) complemented those from the Delphi study, although they provided more specific suggestions on how to improve the adherence to guidelines. Conclusion This study, using a combination of quantitative and qualitative methods, has identified several barriers to explore further and offered many practical solutions to improve practice. The importance of a multidisciplinary approach to address guideline non-adherence was emphasised. Clinical guidelines must be well publicised and well written to prevent a feeling of guideline saturation in the healthcare populous. Novel approaches may have to be investigated in order to further encourage adherence with antibiotic intravenous-to-oral switch guidelines.
Database :	Wiley Online Library

Title :	[Impact of pregabalin treatment on synaptic plasticity and glial reactivity during the course of experimental autoimmune encephalomyelitis](#)
Author :	Gleidy A. A. Silva, Fernando Pradella, Adriel Moraes, Alessandro Farias, Leonilda M. B. dos Santos and Alexandre L. R. de Oliveira
Journal :	Brain and Behavior: Early View, Article first published online: 2 SEP 2014	DOI: 10.1002/brb3.276
Abstract :	Background Multiple sclerosis (MS) is an autoimmune and neurodegenerative disease that affects young adults. It is characterized by generating a chronic demyelinating autoimmune inflammation in the central nervous system. An experimental model for studying MS is the experimental autoimmune encephalomyelitis (EAE), induced by immunization with antigenic proteins from myelin.

	Aims
	The present study investigated the evolution of EAE in pregabalin treated animals up to the remission phase.
	Methods and results
	The results demonstrated a delay in the onset of the disease with statistical differences at the 10th and the 16th day after immunization. Additionally, the walking track test (CatWalk) was used to evaluate different parameters related to motor function. Although no difference between groups was obtained for the foot print pressure, the regularity index was improved post treatment, indicating a better motor coordination. The immunohistochemical analysis of putative synapse preservation and glial reactivity revealed that pregabalin treatment improved the overall morphology of the spinal cord. A preservation of circuits was depicted and the glial reaction was downregulated during the course of the disease. qRT-PCR data did not show immunomodulatory effects of pregabalin, indicating that the positive effects were restricted to the CNS environment.
	Conclusions
	Overall, the present data indicate that pregabalin is efficient for reducing the seriousness of EAE, delaying its course as well as reducing synaptic loss and astroglial reaction.
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Title :	[Neural mechanisms of smooth pursuit eye movements in schizotypy](#)
Author :	Inga Meyhöfer, Maria Steffens, Anna Kasparbauer, Phillip Grant, Bernd Weber and Ulrich Ettinger
Journal :	Human Brain Mapping: Early View, Article first published online: 5 SEP 2014 | DOI: 10.1002/hbm.22632
Abstract :	Patients with schizophrenia as well as individuals with high levels of schizotypy are known to have deficits in smooth pursuit eye movements (SPEM). Here, we investigated, for the first time, the neural mechanisms underlying SPEM performance in high schizotypy. Thirty-one healthy participants [N = 19 low schizotypes, N = 12 high schizotypes (HS)] underwent functional magnetic resonance imaging at 3T with concurrent oculographic recording while performing a SPEM task with sinusoidal stimuli at two velocities (0.2 and 0.4 Hz). Behaviorally, a significant interaction between schizotypy group and velocity was found for frequency of saccades during SPEM, indicating impairments in HS in the slow but not the fast condition. On the neural level, HS demonstrated lower brain activation in different regions of the occipital lobe known to be associated with early sensory and attentional processing and motion perception (V3A, middle occipital gyrus, and fusiform gyrus). This group difference in neural activation was independent of target velocity. Together, these findings replicate the observation of altered pursuit performance in highly schizotypal individuals and, for the first time, identify brain activation patterns accompanying these performance changes. These posterior activation differences are compatible with evidence of motion processing deficits from the schizophrenia literature and, therefore, suggest overlap between schizotypy and schizophrenia both on cognitive-perceptual and neurophysiological levels. However, deficits in frontal motor areas observed during pursuit in schizophrenia were not seen here, suggesting the operation of additional genetic and/or illness-related influences in the clinical disorder.
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Title :	[Subjective ratings of prolonged inspiratory resistive loaded breathing in males and females](#)
Author :	Sarah Miller and Paul W. Davenport
Journal :	Psychophysiology: Early View, Article first published online: 5 SEP 2014 DOI: 10.1111/psyp.12297
Abstract :	Dyspnea and fear of suffocation are burdensome to patients with respiratory disease. Inspiratory resistive loads offer an experimental respiratory stimulus to quantify the discriminative domain of respiratory perception. Resistive (R) load magnitude estimation (ME) and subjective ratings were measured over sustained multiple breaths in healthy subjects. There was no significant group difference between the ME for Breath 1 and 20 for small R loads, but a significant gender difference for large R loads. Subjective responses of fear, fear of suffocation, displeasure, chest pressure, faintness, dizziness, fear of losing control, trembling, and tingling were significantly greater for females. These results demonstrate that ME of large resistive sustained loads elicits nonsignificant increases in ME in females, but a significant decrease in ME for males. The maintenance of ME in females co-occurs with increased aversive processing relative to males.
Database :	Wiley Online Library

Title :	[Individual differences in the shape bias in preschool children with specific language impairment and typical language development: theoretical and clinical implications](#)
Author :	Beverly Anne Collisson, Bernard Grela, Tammie Spaulding, Jay G. Rueckl and James S. Magnuson
Journal :	Developmental Science: Early View, Article first published online: 27 AUG 2014 | DOI: 10.1111/desc.12219
Abstract :	We investigated whether preschool children with specific language impairment (SLI) exhibit the shape bias in word learning: the bias to generalize based on shape rather than size, color, or texture in an object naming context ('This is a wek; find another wek') but not in a non-naming similarity classification context ('See this? Which one goes with this one?'). Fifty-four preschool children (16 with SLI, 16 children with typical language [TL] in an equated control group, and 22 additional children with TL included in individual differences analyses but not group comparisons) completed a battery of linguistic and cognitive assessments and two experiments. In Experiment 1, children made generalization choices in object naming and similarity classification contexts on separate days, from options similar to a target object in shape, color, or texture. On average, TL children exhibited the shape bias in an object naming context, but children with SLI did not. In Experiment 2, we tested whether the failure to exhibit the shape bias might be linked to ability to detect systematicities in the visual domain. Experiment 2 supported this hypothesis, in that children with SLI failed to learn simple paired visual associations that were readily learned by children with TL. Analyses of individual differences in the two studies revealed that visual paired-associate learning predicted degree of shape bias in children with SLI and TL better than any other measure of nonverbal intelligence or standard assessments of language ability. We discuss theoretical and clinical implications.
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Title :	Gene therapies for cancer: strategies, challenges and successes
Author :	Swadesh K Das, Mitchell E. Menezes, Shilpa Bhatia, Xiang-Yang Wang, Luni Emdad, Devanand Sarkar and Paul B. Fisher
Journal :	Journal of Cellular Physiology: Accepted manuscript online: 6 SEP 2014 03:27AM EST | DOI: 10.1002/jcp.24791
Abstract :	Gene therapy, which involves replacement of a defective gene with a functional, healthy copy of that gene, is a potentially beneficial cancer treatment approach particularly over chemotherapy, which often lacks selectivity and can cause non-specific toxicity. Despite significant progress pre-clinically with respect to both enhanced targeting and expression in a tumor-selective manner several hurdles still prevent success in the clinic, including non-specific expression, low-efficiency delivery and biosafety. Various innovative genetic approaches are under development to reconstruct vectors/transgenes to make them safer and more effective. Utilizing cutting-edge delivery technologies, gene expression can now be targeted in a tissue- and organ-specific manner. With these advances, gene therapy is poised to become amenable for routine cancer therapy with potential to elevate this methodology as a first line therapy for neoplastic diseases. This review discusses recent advances in gene therapy and their impact on a pre-clinical and clinical level.
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Title :	Differential PI3-kinase signal transduction in obesity-associated cardiac hypertrophy and response to ischemia
Author :	Bernhard Unsöld, Eva Bremen, Michael Didié, Gerd Hasenfuss and Katrin Schäfer
Journal :	Obesity: Article first published online, 30 AUG 2014 | DOI: 10.1002/oby.20888
Abstract :	Objective Elevated insulin and inflammatory cytokine levels in obesity may chronically activate signaling pathways regulating cardiac growth and contractility. Our aim was to examine the effect of obesity on cardiac PI3K isoform and Akt activation during left ventricular (LV) hypertrophy and heart failure. Methods Wildtype mice were fed normal chow or high-fat diet (HFD) for 2, 4, or 6 months. A subset of mice was subjected to chronic myocardial ischemia (MI). Results Echocardiography revealed a progressive increase in LV mass, wall thickness and diameters in obese mice. Systolic pump function was not impaired. Increased cardiac levels of PI3K[gamma], phosphorylated Akt, GSK3β and Epac were observed after HFD for 2 months, but gradually declined and were normal or reduced after 6 months, paralleled by elevated PP2A and SOCS3 levels. MI resulted in heart failure, independent of obesity, but compensatory LV hypertrophy was absent in obese mice. Histochemical analyses revealed similar increases in cardiac fibrosis, inflammation, apoptosis, and angiogenesis in lean and obese mice. Conclusions Our findings suggest that activation of Akt initially contributes to cardiac hypertrophy and that chronic metabolic and inflammatory stimulation and overexpression of inhibitory mediators decreases PI3K[gamma]-mediated Akt

	signaling and blunts compensatory hypertrophy after MI.
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Title :	Effect and mechanisms of action of vinegar on glucose metabolism, lipid profile, and body weight
Author :	Eleni I Petsiou, Panayota I Mitrou, Sotirios A Raptis and George D Dimitriadis
Journal :	Nutrition Reviews: Early View Article first published online, 28 AUG 2014 | DOI: 10.1111/nure.12125
Abstract :	The aim of this review is to summarize the effects of vinegar on glucose and lipid metabolism. Several studies have demonstrated that vinegar can help reduce hyperglycemia, hyperinsulinemia, hyperlipidemia, and obesity. Other studies, however, have shown no beneficial effect on metabolism. Several mechanisms have been proposed to explain these metabolic effects, including delayed gastric emptying and enteral absorption, suppression of hepatic glucose production, increased glucose utilization, upregulation of flow-mediated vasodilation, facilitation of insulin secretion, reduction in lipogenesis, increase in lipolysis, stimulation of fecal bile acid excretion, increased satiety, and enhanced energy expenditure. Although some evidence supports the use of vinegar as a complementary treatment in patients with glucose and lipid abnormalities, further large-scale long-term trials with impeccable methodology are warranted before definitive health claims can be made.
Database :	Wiley Online Library

Title :	Inhibitory effect of Cinnamomum cassia oil on non-O157 Shiga toxin-producing Escherichia coli
Author :	Lina Sheng, Mei-Jun Zhu
Journal :	Food Control: Volume 46, December 2014, Pages 374–381 (DOI: 10.1016/j.foodcont.2014.05.050)
Abstract :	Shiga toxin-producing Escherichia coli (STEC) have caused numerous foodborne outbreaks. Compared with the most well-known STEC E. coli O157:H7, importance of non-O157 STEC has been underestimated and they have gained far less attention till increasing outbreaks recently. Using natural plant materials as antimicrobial agents is a heated area. Therefore in this study, Cinnamomum cassia, a widely used spice in cuisine, was tested for its antibacterial efficacy on CDC "top six" non-O157 STECs including O26, O45, O103, O111, O121, O145. Gas chromatography-mass spectrometry analysis showed that the major component of C. cassia oil was cinnamaldehyde (59.96%). The disk diffusion assay indicated that 20 µL 4% (v/v) C. cassia oil per disk resulted in inhibition zones of 15.0 mm, 18.5 mm, 15.7 mm, 19.3 mm, 18.8 mm, and 25.3 mm for O26:H11, O45:NM, O103:H2, O111:H2, O121:H19, and O145:NT, respectively. Minimum inhibitory concentration for all tested non-O157 STECs were 0.025% (v/v). Minimum bactericidal concentration was strain dependent, which was 0.05% (v/v) for O26:H11, O121:H19, O145:NT, while 0.1% (v/v) for O45:NM, O103:H2 and O111:H2. Growth kinetics showed that at the low inoculation of approximate 2.5×10^5 CFU/mL, C. cassia oil at the concentration of 0.01875% (v/v) completely inhibited the growth of O26:H11 and O145:NT for at least 24 h, and increased the duration of lag phase of O45:NM, O103:H2, O111:H2, O121:H19 by18, 12, 6, and 16 h, respectively. Including 0.025% (v/v) C. cassia oil completely inhibited the growth of all tested non-O157 STECs for at least 24 h. At high inoculation of $5 \times$

	106 CFU/mL, inhibition effect of C. cassia oil decreased. Death curve showed that including as low as 0.05% (v/v) C. cassia oil could kill non-O157 STECs. 0.1% (v/v) C. cassia oil showed bactericidal effects on all tested non-O157 STECs within 15 min. C. cassia oil at the concentration of 0.15% (v/v) killed all O26:H11, O121:H19 and O145:NT within 30 min, while O45:NM, O103:H2 and O111:H2 at 120, 60, and 60 min, respectively. In conclusion, C. cassia oil can effectively inhibit the growth of non-O157 STECs at concentration as low as 0.025% (v/v). Our data suggest that C. cassia oil has the potential to be used as a natural antibacterial agent in food industry.
Database :	ScienceDirect

Title :	[A Secreted Tyrosine Kinase Acts in the Extracellular Environment](#)
Author :	Mattia R. Bordoli, Jina Yum, Susanne B. Breitkopf, Jonathan N. Thon, Joseph E. Italiano Jr., Junyu Xiao, Carolyn Worby, Swee-Kee Wong, Grace Lin, Maja Edenius, Tracy L. Keller, John M. Asara, Jack E. Dixon, Chang-Yeol Yeo, Malcolm Whitman
Journal :	Cell: Volume 158, Issue 5, p1033–1044, 28 August 2014
Abstract :	Although tyrosine phosphorylation of extracellular proteins has been reported to occur extensively in vivo, no secreted protein tyrosine kinase has been identified. As a result, investigation of the potential role of extracellular tyrosine phosphorylation in physiological and pathological tissue regulation has not been possible. Here, we show that VLK, a putative protein kinase previously shown to be essential in embryonic development, is a secreted protein kinase, with preference for tyrosine, that phosphorylates a broad range of secreted and ER-resident substrate proteins. We find that VLK is rapidly and quantitatively secreted from platelets in response to stimuli and can tyrosine phosphorylate coreleased proteins utilizing endogenous as well as exogenous ATP sources. We propose that discovery of VLK activity provides an explanation for the extensive and conserved pattern of extracellular tyrosine phosphophorylation seen in vivo, and extends the importance of regulated tyrosine phosphorylation into the extracellular environment.
Database :	Publisher: Cell Press, Elsevier Inc.

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