

The Journal of Pain

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Critical Reviews

855 Systematic Review of Childhood and Adolescent Risk and Prognostic Factors for Recurrent Headaches

Anna Huguet, Michelle E. Tougas, Jill Hayden, Patrick J. McGrath, Christine T. Chambers, Jennifer N. Stinson, and Lori Wozney

Little is known about childhood and adolescent risk and prognostic factors for recurrent headaches. This systematic review examined longitudinal evidence about factors associated with onset and course of recurrent headaches, and evaluated the quality of this evidence. There is moderate-quality evidence that females are at risk of developing recurrent headaches, and of headaches persisting. There is high-quality evidence suggesting that children with negative emotional states manifested through anxiety, depression, or mental distress are not at risk of developing headache. Yet there is moderate-quality evidence suggesting that the presence of comorbid negative emotional states in children with headaches is associated with increased risk of headache persistence.

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ON THE COVER

Drugs interacting with TRP channels are of great therapeutic potential. In this study, the authors established cutaneous pain and hyperalgesia using the TRPA1 agonist trans-cinnamaldehyde. This work showed that the frequently used topical counter-irritant and TRPM8 agonist L-menthol decreased evoked pain, hyperalgesia, and inflammation, indicating both direct and indirect antinociceptive mechanisms. See Andersen et al, page 919.

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Toward Identifying Moderators of Associations Between Presurgery Emotional Distress and Postoperative Pain Outcomes: A Meta-Analysis of Longitudinal Studies

Todd Jackson, Panpan Tian, Yang Wang, Tony Iezzi, and Wenyi Xie

Pre-surgery emotional distress has had variable associations with outcomes of surgery in past narrative reviews. This meta-analysis was designed to evaluate the overall strengths of relations between presurgical emotional distress and key postsurgical pain outcomes (i.e., pain intensity, analgesic use, functional impairment) and to identify moderators that might explain effect size heterogeneity between studies. High presurgery emotional distress levels were associated with significantly more post-surgical pain, analgesic use, and impairment following surgery, with small to medium average effect sizes. Considering emotional distress within presurgical assessment protocols may aid in identifying vulnerable patients who can benefit from interventions targeting distress reductions.

Original Reports

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Alendronate Attenuates Spinal Microglial Activation and Neuropathic Pain

Yao Yao, Yong-Hui Tan, Alan R. Light, Jianren Mao, Albert Cheung Hoi Yu, and Kai-Yuan Fu

Many derivatives of bisphosphonates, which are inhibitors of bone resorption, have been developed as promising agents for painful pathologies in patients with bone resorption-related diseases. The mechanism for pain relief by bisphosphonates remains uncertain. Studies have reported that bisphosphonates could reduce central neurochemical changes involved in the generation and maintenance of bone cancer pain. The authors hypothesized that bisphosphonates would inhibit spinal microglial activation and prevent the development of hyperalgesia caused by peripheral tissue injury. These findings conclude that alendronate could relieve neuropathic pain behaviors in animals by inhibiting the activation of spinal cord microglia and the p38 MAPK cell signaling pathway. Therapeutic applications of alendronate may be extended beyond bone metabolism-related disease.

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The Development of a Technology-Based Hierarchy to Assess Chronic Low Back Pain and Pain-Related Anxiety From a Fear-Avoidance Model

Kristen S. Springer, Steven Z. George, and Michael E. Robinson

Previous studies have not examined the assessment of chronic low back pain and pain-related anxiety from a fear avoidance model through the use of motion-capture software and virtual human technologies. This manuscript describes the development of a computer-based virtual patient system for the assessment of back pain-related fear and anxiety. Results show that both people with back pain as well as physical therapists found the avatar to be realistic, and the depictions of behavior anxiety- and fear-provoking.

911 Repetitive Transcranial Magnetic Stimulation for Phantom Limb Pain in Land Mine Victims: A Double-Blinded, Randomized, Sham-Controlled Trial

Alejandra Malavera, Federico Arturo Silva, Felipe Fregni, Sandra Carrillo, and Ronald G. Garcia

This research evaluated the effects of repetitive Transcranial Magnetic Stimulation (rTMS) in the treatment of phantom limb pain (PLP) in landmine victims. Fifty-four patients with PLP were enrolled in a randomized, double-blinded, placebo-controlled, parallel group single center trial. High-frequency rTMS administered on the contralateral primary motor cortex of traumatic amputees induces a clinically significant pain reduction up to 15 days after treatment without any major secondary effect. These results indicate that rTMS is a safe and effective therapy in patients with phantom limb pain caused by landmine explosions.

919 High-Concentration L-Menthol Exhibits Counter-Irritancy to Neurogenic Inflammation, Thermal and Mechanical Hyperalgesia Caused by Trans-cinnamaldehyde

Hjalte H. Andersen, Parisa Gazerani, and Lars Arendt-Nielsen

The TRPM8 agonist L-menthol has been used traditionally for its topical counterirritant properties. While the use of topical L-menthol for pain is casuistically established, evidence regarding its efficacy is negligible. In this study, the authors established cutaneous pain and hyperalgesia using the TRPA1 agonist trans-cinnamaldehyde. L-menthol decreased evoked pain, hyperalgesia, and inflammation, indicating both direct and indirect antinociceptive mechanisms.

930 Neural Correlates Differ in High and Low Fear-Avoidant Chronic Low Back Pain Patients When Imagining Back-Straining Movements

Antonia Barke, Mira A. Preis, Carsten Schmidt-Samoa, Jürgen Baudewig, Birgit Kröner-Herwig, and Peter Dechent

The fear-avoidance model postulates that in an initial acute phase, chronic low back pain (CLBP) patients acquire a fear of movement that results in avoidance of physical activity and contributes to the pain becoming chronic. This functional magnetic resonance imaging study investigated the neural correlates of imagining back-straining and neutral movements in CLBP patients with high and low fear avoidance, and healthy pain-free participants. Results show that low fear-avoidant back pain patients appear to utilize a strategy or mechanism which enables them to react with less fear in the face of pain. This warrants further investigation, as countering fear and avoidance provide an important advantage.

Letters to the Editor

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Increased Risk of Depression Recurrence After Initiation of Prescription Opioids in Noncancer Pain Patients

Xiulu Ruan, Alan D. Kaye, and Srinivas Chiravuri

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Response to Ruan et al. Letter to the Editor: Increased Risk of Depression Recurrence After Initiation of Prescription Opioids in Noncancer Pain Patients

Jeffrey F. Scherrer, Joanne Salas, Laurel A. Copeland,
Eileen M. Stock, F. David Schneider, Mark Sullivan,
Kathleen K. Bucholz, Thomas Burroughs,
and Patrick J. Lustman

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Erratum

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