

# The Journal of Pain

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Gary J. Bennett

Which is more important – stimulus-evoked pain or spontaneous pain? This review article suggests that to answer the question, it is necessary to distinguish neuropathic “spontaneous” pain from inflammatory “ongoing” pain and to differentiate both from summated allodynic and hyperalgesic pains caused by the stimuli of daily life. This important piece is rounded out by commentary from specialists in the field, as well as a response by the author.

**The Journal of Pain** will publish appropriate images on the journal cover. Selected figures may accompany a submitted manuscript (authors should make a note in the covering letter), or images may be submitted individually. Please present your art for consideration. Visit <http://ees.elsevier.com/jpain> to upload your materials.

#### ON THE COVER

Variation among counties in estimated mean milligrams of opioids dispensed, per county resident, by retail pharmacies in the United States during 2008. County populations are standardized by age and gender; opioids include the eight most commonly prescribed and amounts dispensed are expressed in morphine equivalent units. See MacDonald, et al, page 988.

## Critical Review

936

### **Conditioned Pain Modulation in Populations With Chronic Pain: A Systematic Review and Meta-Analysis**

Gwyn N. Lewis, David A. Rice, and Peter J. McNair

This literature review and meta-analysis were undertaken to determine whether conditioned pain modulation is dysfunctional in populations with chronic pain. Results show that conditioned pain is impaired in populations with chronic pain. The authors suggest that future studies should ensure adequate matching of participant age and gender between patient and control groups, blinding of the assessors obtaining the outcome measures, and more rigorous control for variables known to influence the level of modulation.

## Original Reports

945

### **Role of P2X7 Receptor-Mediated IL-18/IL-18R Signaling in Morphine Tolerance: Multiple Glial-Neuronal Dialogues in the Rat Spinal Cord**

Meng-Ling Chen, Hong Cao, Yu-Xia Chu, Long-Zhen Cheng, Ling-Li Liang, Yu-Qiu Zhang, and Zhi-Qi Zhao

The glial function in morphine tolerance has been explored, but its mechanisms remain unclear. This research shows that glia-neuron interaction via a cascade (P2X7R-IL-18-D-serine-NMDAR-PKC $\gamma$ ) in the spinal cord plays an important role in morphine tolerance. This article may present potential new therapeutic targets for preventing morphine analgesic tolerance in clinical management of chronic pain.

959

### **Pain Is Associated With Short Leukocyte Telomere Length in Women With Fibromyalgia**

Afton L. Hassett, Elissa Epel, Daniel J. Clauw, Richard E. Harris, Steven E. Harte, Anson Kairys, Steven Buyske, and David A. Williams

Telomere length, considered a measure of biological aging, is linked to morbidity and mortality. Psychosocial factors associated with shortened telomeres are also common in chronic pain; yet, little is known about telomere length in pain populations. These findings support a link between premature cellular aging and chronic pain. These preliminary data imply that chronic pain is a more serious condition than has typically been recognized in terms of bodily aging.

970

**Psychometric Properties of the Tampa Scale for Kinesiophobia-11 (TSK-11)**

Gregg A. Tkachuk and Cheryl A. Harris

This study investigated the psychometric properties of an abbreviated version of the Tampa Scale for Kinesiophobia (TSK) in a clinical sample of patients with chronic pain. The analyses indicated that an 11-item, 2-factor structure best fit the data. The TSK-11 scales demonstrated acceptable levels of internal consistency, as well as evidence of discriminant, concurrent criterion-related, and incremental validity. The authors recommend that the TSK-11 be used in future research and in clinical settings.

978

**Pain Tolerance and Pain Perception in Adolescents Born Extremely Preterm**

Bente Johanne Vederhus, Geir Egil Eide, Gerd Karin Natvig, Trond Markestad, Marit Graue, and Thomas Halvorsen

Neonatal pain experiences have been associated with altered processing and perception of pain in later life, but findings tend to vary between studies. This study compared experimental pain tolerance and subjective health complaints in a population-based cohort of adolescents born extremely preterm to that of matched term-born controls. Despite reduced tolerance to experimental pain, subjects born preterm scored their pain experiences similarly to those of term-born controls, these findings show.

988

**Geographic Variation in Opioid Prescribing in the U.S.**

Douglas C. McDonald, Kenneth Carlson, and David Izrael

Despite concerns about geographic variation in health care spending and utilization, little attention has been given to the extent and reasons for geographic differences in prescribing opioid pain relievers in the U.S. In this study, estimates of variation among states and counties are developed using data from a large sample of prescriptions dispensed during 2008. Findings show that counties having the highest prescribing rates were disproportionately located in Appalachia and in Southern and Western states. The number of available physicians was the strongest predictor of amounts prescribed. Low prescription rates may indicate under treatment, while high rates may indicate overprescribing and insufficient attention to risks of misuse.

997

**Preprotachykinin-A Gene Disruption Attenuates Nociceptive Sensitivity After Opioid Administration and Incision by Peripheral and Spinal Mechanisms in Mice**

Peyman Sahbaie, Xiaoyou Shi, Xiangqi Li, Deyong Liang, Tian-Zhi Guo, Yanli Qiao, David C. Yeomans, Wade S. Kingery, and J. David Clark

Preprotachykinin A gene codes for the primary afferent neurotransmitters Substance P (SP) and neurokinin A, with the former having better established roles in nociceptive signaling. Besides being a well-known nociceptive neurotransmitter, SP has roles in wound healing, cell proliferation, and neurogenic extravasation after injury with most of these effects mediated by neurokinin-1 receptors. This report shows that SP signaling modulates enhanced nerve growth factor production and changes in neuronal gene expression seen after incision in mice previously exposed to morphine.

1008

**Activation of Src Family Kinases in Spinal Microglia Contributes to Formalin-Induced Persistent Pain State Through p38 Pathway**

Yong-Hui Tan, Kai Li, Xin-Yi Chen, Ye Cao, Alan R. Light, and Kai-Yuan Fu

Protein tyrosine phosphorylation has been implicated in normal and pathological functions, such as cell proliferation, migration and differentiation. Recently, some studies have shown that Src family kinases were involved in neurological disorders and neuropathic pain states in which microglial activation plays a role. This study presents unique properties of spinal microglial activation in a pain animal model, and could potentially help clinicians to further understand the contributions of spinal microglia to acute and persistent pain state.

1016

**Relationship Between Temporomandibular Disorders, Widespread Palpation Tenderness, and Multiple Pain Conditions: A Case-Control Study**

Hong Chen, Gary Slade, Pei Feng Lim, Vanessa Miller, William Maixner, and Luda Diatchenko

The multiple bodily pain conditions in temporomandibular disorders (TMD) have been associated with generalized alterations in pain processing. The purpose of this study was to examine the relationship between the presence of widespread body palpation tenderness and the likelihood of multiple comorbid pain conditions in TMD patients and controls. Conclusions suggest that pain assessment outside of the orofacial region may prove valuable for the classification, diagnosis, and management of TMD patients.

## Letter to the Editor

### Emerging New Therapeutic Options for Paclitaxel-Induced Neuropathic Pain

Shailendra Kapoor

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