

# The Journal of Pain

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### Critical Review

#### **677** The Outcome of Complex Regional Pain Syndrome Type 1: A Systematic Review

Debbie J. Bean, Malcolm H. Johnson, and Robert R. Kydd

This systematic review examined the outcome of complex regional pain syndrome (CRPS) type 1. The authors searched MEDLINE, Embase, and PsychINFO for relevant studies and included 18 studies, with 3,991 participants. Findings show that many CRPS patients recover within 6 to 13 months, but a significant number experience some lasting symptoms, and some experience chronic pain and disability. This suggests that some CRPS patients make a good early recovery while others develop lasting pain and disability.

### Focus Article

#### **691** Toward a Theoretical Model for Mindfulness-Based Pain Management

Melissa A. Day, Mark P. Jensen, Dawn M. Ehde, and Beverly E. Thorn

Mindfulness, as both a process and a practice, has received substantial research attention across a range of health conditions, including chronic pain. Previously proposed mechanisms underlying the potential health-related benefits of mindfulness and mindfulness-based interventions (MBIs) are based on a strong theoretical background. However, to date, an empirically grounded, integrated theoretical model of the mechanisms of MBIs within the context of chronic pain has yet to be proposed. Accordingly, this article presents an initial framework for an empirically based, theoretical model of the mechanisms of MBIs for chronic pain management. Implications of the framework for refining theory and for future research are addressed.

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#### ON THE COVER

Paclitaxel is the front-line chemotherapeutic agent used to treat many tumors, including those of the breast, ovary, and lung. Peripheral neuropathy is the major dose-limiting side effect of paclitaxel and can force dose reduction or even discontinuation of therapy, thus impacting survival in cancer patients. This research tests the contribution of the toll-like receptors, TLR4 in particular, in the initiation and maintenance of paclitaxel-related chemotherapy-induced peripheral neuropathy. See Li et al, page 712.

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## Original Reports

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### **A Longitudinal Linear Model of Patient Characteristics to Predict Failure to Attend an Inner-City Chronic Pain Clinic**

Naum Shaparin, Robert White, Michael Andrae, Charles Hall, and Andrew Kaufman

Patients often fail to attend appointments in chronic pain clinics for unknown reasons. This study hypothesized that certain patient characteristics predict failure to attend scheduled appointments, pointing to systematic barriers to accessing chronic pain services for certain underserved populations. The results identified certain patient characteristics, specifically Spanish spoken as a primary language and geographic distance from the clinic, that predict failure to attend an inner-city chronic pain clinic. These may be modifiable by simple cost-effective interventions.

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### **Toll-Like Receptor 4 Signaling Contributes to Paclitaxel-Induced Peripheral Neuropathy**

Yan Li, Haijun Zhang, Hongmei Zhang, Alyssa K. Kosturakis, Abdul Basit Jawad, and Patrick M. Dougherty

Paclitaxel is the front-line chemotherapeutic agent used to treat many tumors, including those of the breast, ovary, and lung. Peripheral neuropathy is the major dose-limiting side effect of paclitaxel and can force dose reduction or even discontinuation of therapy, thus impacting survival in cancer patients. Additionally, chemotherapy-induced peripheral neuropathy (CIPN) often persists long after cancer treatment is completed. This research tests the contribution of the toll-like receptors, TLR4 in particular, in the initiation and maintenance of paclitaxel-related CIPN. The results strongly implicate TLR4 signaling in the dorsal root ganglion and the spinal cord in the induction and maintenance of paclitaxel-related CIPN.

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### **Screening the Role of Pronociceptive Molecules in a Rodent Model of Endometriosis Pain**

Pedro Alvarez and Jon D. Levine

Chronic pain is a major symptom in patients with endometriosis, a common gynecologic condition affecting women in their reproductive years. To determine the relative contribution of proalgesic substances to pain associated with endometriosis, this report evaluated the intrathecal administration of oligodeoxynucleotides antisense to mRNA for receptors for 3 pronociceptive mediators. The experimental approach presented here provides a novel method to evaluate for the differential contribution of mediators produced by other painful lesions as well as endometriosis lesions as targets for novel treatment of pain syndromes.

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**The Dynamics of Pain: Evidence for Simultaneous Site-Specific Habituation and Site-Nonspecific Sensitization in Thermal Pain**

Marieke Jepma, Matt Jones, and Tor D. Wager

This article presents novel evidence for simultaneous site-specific habituation and site-nonspecific sensitization in thermal pain, which can be disentangled (and the direction and strength of each process estimated) by a dynamic model. The dissociation of site-specific and site-nonspecific adaptation processes may hold keys to understanding multiple pain-regulatory mechanisms in both healthy and patient populations.

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**Who Uses a Prescription Drug Monitoring Program and How? Insights From a Statewide Survey of Oregon Clinicians**

Jessica M. Irvine, Sara E. Hallvik, Christi Hildebran, Miguel Marino, Todd Beran, and Richard A. Deyo

Prescription drug monitoring programs (PDMPs) are relatively new but potentially useful tools to enhance prudent prescribing of controlled substances. However, little is known about the types of clinicians who make the most use of PDMPs, how they are incorporated into workflow, or how clinicians and patients respond to the information. This study examined differences between PDMP users and nonusers and how clinicians in various specialties use PDMPs in practice.

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**Validation of the Short-Form McGill Pain Questionnaire-2 in Younger and Older People With Cancer Pain**

Lynn R. Gauthier, Alycia Young, Robert H. Dworkin, Gary Rodin, Camilla Zimmermann, David Warr, S. Lawrence Librach, Malcolm Moore, Frances A. Shepherd, Rebecca Pillai Riddell, Alison Macpherson, Ronald Melzack, and Lucia Gagliese

Pain is among the most common symptoms of cancer. Because cancer can occur at any age, it is imperative that pain assessment tools are valid for use across the adult lifespan. This study demonstrated that the Short-Form McGill Pain Questionnaire-2 is valid for use in older and younger people with advanced cancer and pain. This measure could improve cancer pain assessment across the adult lifespan, which may lead to improved pain management.

**771**    **ATP Release Mechanisms of Endothelial Cell–Mediated Stimulus-Dependent Hyperalgesia**

Elizabeth K. Joseph, Paul G. Green, and Jon D. Levine

Endothelin-1 acts on endothelial cells to enhance mechanical stimulation–induced release of adenosine triphosphate (ATP), which in turn can act on sensory neurons innervating blood vessels to contribute to vascular pain, a phenomenon known as stimulus-dependent hyperalgesia (SDH). This study evaluated the role of the major classes of ATP release mechanisms to SDH. This study reports a role of ATP in SDH and suggests novel targets for the treatment of vascular pain syndromes.

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Robert D. Searle

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Soo Ick Cho, Cheol Heon Lee, Gyeong-Hun Park, Chun Wook Park, and Hye One Kim

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