

# Poor sleep, negative attitude amplify pain in knee osteoarthritis

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A new study reports that patients with knee osteoarthritis (OA) who have poor sleep habits display greater central sensitization—an amplification of clinical pain. Findings published in *Arthritis Care & Research*, a journal of the American College of Rheumatology (ACR), further show OA patients who catastrophize—consumed by thoughts of pain—had increased central sensitization that was associated with greater clinical pain.

OA—a degenerative joint disease that causes pain and swelling of joints in the hand, hips, or knee—affects nearly 27 million Americans 25 years of age and older according to the Centers for Disease Control and Prevention (CDC). Further evidence suggests that roughly one third of older adults have knee OA, a leading cause of pain and disability worldwide. Researchers believe that central sensitization, which is a hypersensitivity to pain, may contribute to the clinical pain amplification in OA.

"Our study is the largest and most comprehensive examination of the relationship between sleep disturbance, catastrophizing and central sensitization in knee OA," said lead author Claudia Campbell, Ph.D. from the Department of Psychiatry & Behavioral Sciences at Johns Hopkins University School of Medicine in Baltimore, Maryland.

The current case-controlled study included 208 participants who were categorized into four groups: OA [patients](#) with insomnia, OA patients with normal sleep habits, healthy controls with insomnia, and healthy

controls without a pain syndrome and normal sleep. Seventy-two percent of the participants were female. Participants completed sleep assessments, psychological and pain evaluations, and sensory testing.

Results show that the subjects with knee OA and insomnia had the greatest degree of central sensitization compared to the controls. The team found patients with poor sleep and high catastrophizing scores reported increased levels of central sensitization. In turn, central sensitization was significantly associated with increased clinical pain.

Dr. Campbell concludes, "While no causal processes may be determined from this study, our data suggest that those with low sleep efficiency and higher catastrophizing have the greatest central sensitization.

Understanding the intricate relationship between [sleep](#), central sensitization, and catastrophizing has important clinical implications for treating those with chronic [pain](#) conditions such as [knee](#) OA."

**More information:** "Sleep, pain catastrophizing and central sensitization in knee osteoarthritis patients with and without insomnia." Claudia M. Campbell, Luis F. Buenaver, Patrick Finan, Sara C. Bounds, Mary Redding, Lea McCauley, Mercedes Robinson, Robert R. Edwards and Michael T. Smith. *Arthritis Care and Research*; Published Online: June 4, 2015. [DOI: 10.1002/acr.22609](https://doi.org/10.1002/acr.22609)

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