Can Caffeine Reduce Post-Surgery Pain?

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Most patients experience some pain after surgery. Now, new findings published in the journal Sleep suggest that lack of sleep before medical procedures factors into postoperative pain and that caffeine may be an unlikely remedy, reports ScienceDaily.

For the study, researchers at Michigan Medicine used a rat model to examine how loss of sleep factors into post-surgery pain and to determine whether caffeine could alleviate the aching. Scientists believed that because insufficient sleep enhances pain perception, caffeine could help reverse the increase in pain caused by not getting enough zzz's. In addition, the study's authors wanted to identify a potential brain mechanism by which disrupted sleep worsened pain.

Researchers found that sleep deprivation prior to surgery increased postoperative suffering and extended recovery time. In addition, caffeine helped diminish surgical pain caused by sleep loss—independent of the compound's analgesic, or pain-relieving, properties.

"Furthermore, it looks like caffeine was effective only in those rats that underwent sleep deprivation before surgery," said Giancarlo Vanini, MD, a research assistant professor in the department of anesthesiology at Michigan Medicine. "We think that caffeine might prevent the increase in pain sensitivity by blocking part of the neurochemical changes induced by sleep deprivation in specific brain areas that control sleep and wakefulness and project to pain-related sites."

Next, researchers plan to assess whether caffeine is effective in reducing pain in humans following surgery.

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