

# Chronic migraine cases are amplified by jawbone disorder, according to research

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In a new study, researchers at the University of São Paulo's Ribeirão Preto School of Medicine (FMRP-USP) in Brazil find that a higher frequency of migraine attacks correlates with more severe temporomandibular disorder, or TMD. The temporomandibular joint acts like a sliding hinge connecting the jawbone to the skull, and the disorder's symptoms include difficulty chewing and joint tension.

"Our study shows that [patients](#) with chronic [migraine](#), meaning attacks occurring on more than 15 days per month, are three times as likely to report more severe symptoms of TMD than patients with episodic migraine," said Lidiane Florencio, the first author of the study.

Previous studies have indicated that migraine is somehow associated with [pain](#) in the chewing muscles. However, this research was the first to consider the frequency of migraine attacks when analyzing its connection with TMD. Eighty-four women in their early to mid-thirties were assessed; twenty-one were chronic migraine patients, 32 had episodic migraine, and 32 control subjects had no history of migraine. The results were published in the *Journal of Manipulative and Physiological Therapeutics*.

Signs and symptoms of TMD were observed in 54 percent of the control participants without migraine, 80 percent of participants with episodic migraine, and 100 percent of those with [chronic migraine](#).

For Florencio, central sensitization may explain the association between

the frequency of migraine attacks and the severity of TMD.

"The repetition of migraine attacks may increase sensitivity to pain," she said. "Our hypothesis is that migraine acts as a factor that predisposes patients to TMD. On the other hand, TMD can be considered a potential perpetuating factor for migraine because it acts as a constant nociceptive input that contributes to maintaining central sensitization and abnormal pain processes." Nociceptive pain is caused by a painful stimulus on special nerve endings called nociceptors.

Migraine and TMD have similar pathological mechanisms. Migraine affects 15 percent of the general population, and progression to the chronic form is expected in about 2.5 percent of migraine sufferers. On the other hand, TMD is stress-related as much as it has to do with muscle overload. Patients display joint symptoms including joint pain, reduced jaw movement, clicking or popping of the temporomandibular joint, but also develop a muscular condition, including muscle pain and fatigue, and/or radiating face and neck pain.

Which came first?

TMD and migraine are comorbidities. However, while people who suffer from migraine are predisposed to have TMD, people with TMD will not necessarily have migraine.

"Migraine patients are more likely to have signs and symptoms of TMD, but the reverse is not true. There are cases of patients with severe TMD who don't present with migraine," said Débora Grossi, the lead researcher for the study and principal investigator for the Thematic Project.

The researchers believe that TMD may increase the frequency and severity of migraine attacks, even though it does not directly cause

migraine.

"We do know migraine isn't caused by TMD," Florencio said. "Migraine is a neurological disease with multifactorial causes, whereas TMD, like cervicalgia and other musculoskeletal disorders is a series of factors that intensify the sensitivity of migraine sufferers. Having TMD may worsen one's [migraine attacks](#) in terms of both severity and frequency."

The journal article concludes that an examination of TMD signs and symptoms should be clinically conducted in patients with migraine. "Our findings show the association with TMD exists but is less frequent in patients with rare or episodic migraine," Grossi said. "This information alone should change the way clinicians examine patients with migraine. If [migraine sufferers](#) tend to have more severe TMD, then health professionals should assess such patients specifically in terms of possible signs and symptoms of TMD."

**More information:** Lidiane Lima Florencio et al, Association Between Severity of Temporomandibular Disorders and the Frequency of Headache Attacks in Women With Migraine: A Cross-Sectional Study, *Journal of Manipulative and Physiological Therapeutics* (2017). [DOI: 10.1016/j.jmpt.2017.02.006](#)

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