



JAW PAIN: 3 LITTLE KNOWN CAUSES OF TMJ

By: Kelsey Marksteiner, RD
[Website article](#)

For years doctors and dentists believed that malocclusion (teeth that don't line up correctly) cause pain in the TMJ. However, newer research shows that while structural abnormalities may be part of the picture, this disorder is also associated with biological, behavioral and cognitive factors.

Temporomandibular joint disorders (TMD) cause pain in the temporomandibular joint (TMJ), and those with TMD usually have difficulty opening their mouths widely and may experience clicking or popping of the joint. TMD is also associated with neck and tooth pain, as well as dizziness and tinnitus.

In this article, I'll describe some of the current theories regarding TMD and what you should do to improve your symptoms if you suffer from this painful condition.

HPA Axis Dysregulation

Anyone with TMD can attest that stress tends to make their symptoms worse. When you're stressed your muscles tense, and in the case of TMD, this clenching can cause pain. But stress also causes physiological changes in the body that can lead to symptoms.

Those with TMD have been shown to have altered cortisol rhythms indicative of HPA axis dysregulation (i.e. "adrenal fatigue"). They have high levels of cortisol in the morning, and also exhibit an enhanced release of cortisol when stressed. Pain itself is a stressor, so it's important to note that there have also been studies looking at TMD patients who had resolved their pain that also show elevated levels of cortisol, indicating that it is not just the pain causing higher levels of this stress hormone.

While the normal response to acute stress is an increase in pain tolerance, researchers have shown in rat TMD models that chronic stress causing HPA axis dysregulation can actually decrease pain tolerance.

Sadly, stress not only increases pain in those with TMD; it actually changes the structure of the temporomandibular joint. It is vital to keep your stress under control if you want healthy temporomandibular joint structure and function.

If you suffer from TMD, it's a good idea to check up on your adrenal health – if you suffer from HPA axis dysregulation it's likely that improving your adrenal status will improve your symptoms. You can learn more about HPA axis dysregulation and what to do about it in Laura's and my free [eBook](#), but one of the best ways to improve your HPA axis activity is to implement mind-body activities like yoga, deep breathing, meditation, etc. These are simple things to incorporate and can often be done in the comfort of your own home. Here are some of my favorite resources if you're new to mind-body activities:

- [Yoga with Adrienne](#)
- [Headspace](#)
- [Stress Doctor](#)

Inflammation in TMD

When you are subject to chronic stress, your body becomes resistant to the effects of cortisol. When this happens, inflammation is allowed to run rampant as the normal processes that keep it in check don't function as they should.

Inflammation and oxidative stress are associated with TMD, and it is thought that these inflammatory processes that takes place within the TMJ may be a cause of the pain patients experience.

To decrease your inflammation, it is first crucial to get your HPA axis functioning normally, as HPA dysregulation increases inflammation. You can learn more about how to get tested for HPA axis dysregulation and how to treat it naturally in our [eBook and video series](#).

It is also important to eat a healthy diet high in antioxidants – a Paleo diet is a perfect place to start, but make sure to get lots of fruits and vegetables of different colors to increase your antioxidant intake.

There have been limited studies on supplements that can help alleviate TMD. However, one study showed that N-acetyl-cysteine (NAC) helped to alleviate oxidative stress on TMJ cells. This has yet to be studied in animals or humans, but it's likely that supplemental NAC may reduce the oxidative stress associated with TMD and help to relieve symptoms.

Sleep deprivation has also been shown to increase pain in those with TMD, which is thought to be because sleep deprivation increases inflammatory markers as well as estrogen (that part will make more sense in the next section). To reduce inflammation in the body, it's vital to get enough sleep. Make sure to listen (or read) Chris' podcast with Dan Pardi on sleep to learn how to get restful sleep.

Mind-body activities are also great for not only improving HPA axis function but also lowering inflammation. Both yoga and meditation have been shown to lower inflammatory markers. Yet another reason to practice!



Hormone Balance

The prevalence of TMD is 1.5 times higher in women than in men. This, coupled with the fact that other pain disorders like fibromyalgia are also much more common in women, made researchers believe that hormones may play a part in these diseases.

Both male and female TMD patients show high levels of estrogen, and estrogen seems to have a damaging effect on the TMJ while testosterone seems to inhibit damage. Research also shows that women who have genetic polymorphisms in a specific estrogen receptor are more likely to have TMD than controls. In addition to this, women who are exposed to estrogen via hormone replacement after menopause or through oral contraceptive use are more likely to suffer from TMD than those who haven't been exposed to exogenous estrogen.

Because estrogen seems to have such a significant impact on damage and pain in TMD, it's crucial for both men and women suffering from TMD to make sure their hormones are balanced. Hormone balance is a topic unto itself and is best done with the help of a practitioner, but Chris gives a great primer on the topic in [this podcast](#).

To help balance your hormones yourself, you'll want to make sure:

You're at a healthy weight

You avoid estrogen-like compounds in your environment as much as possible (BPA, birth control, soy, fat from non-pastured animals, etc)

Your HPA axis is functioning properly and you keep stress to a minimum

Your gut is healthy and you eat adequate fiber

TMD is a multifactorial disease that can be complicated and difficult to treat. However, with newer research we have a better understanding of the many factors that lead to the development of this condition. Given this newer research, it's likely that treating HPA axis dysregulation, controlling inflammation, and balancing hormones will bring relief to those that suffer from TMD.

