

Results Testimonial



"Jessica is a master of her craft and has the experience and confidence that comes with that.

She did 2 fillings for me today in less than an hour with no pain or discomfort whatsoever. She knew exactly where to inject the Novocaine (no pain doing that either). I was a little nervous due to past experiences with previous dentists but Dr. Sabo quickly put my anxiety to rest. I feel very fortunate to have her as my dentist.

There is a great feeling that comes when you know you have a dentist you can count on - I went through many years trying to find the right one and I'm happy to say I have. Her staff is excellent as well and I appreciate them very much."

- Todd F.

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changes are not radiologic, are "less harmful than previously reported," and can be mitigated with "careful adaptation, control and follow-ups."⁴ A comprehensive 2014 review on OAT states that most adverse side effects resolve within two months, while TMD symptoms "tend to decrease over time and resolve after 6–12 months in the majority of patients."²

The research overwhelmingly concludes that while pain and transient impairment may occur in the early stages of OAT, symptoms diminish and resolve over time in the majority of cases, especially with careful stewardship.⁷ Clinicians previously hesitant to refer patients struggling with obstructive sleep apnea to an experienced dentist for oral appliance therapy need worry no longer. The myth linking OAT to temporomandibular dysfunction has been roundly debunked in the current literature, and the treatment is primed to safely transform the lives of patients seeking relief.



Physician Update

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Can Oral Appliance Therapy Cause Temporomandibular Joint Dysfunction? Debunking A Persistent Myth in the Sleep Sciences

Obstructive sleep apnea (OSA) is a serious disorder affecting the health and well-being of as many as 1 in 5 Americans.¹ Luckily, as the science of sleep advances, treatment options have diversified to accommodate a wider range of patient needs and preferences, minimizing the number of OSA sufferers who fail to respond to treatment or opt out of it altogether.

Today, oral appliance therapy (OAT) has risen to prominence as not only a powerful alternative to continuous positive airway pressure (CPAP) therapy, but as a preferable first-line treatment in many cases. Titratable mandibular advancement devices (the most commonly used and most effective oral appliances for the treatment of OSA) have repeatedly been shown to result in comparable positive health outcomes to gold standard CPAP therapy.² This is typically attributed to greater treatment adherence among oral appliance users. What's more, a slight majority of patients actually prefer OAT to CPAP, primarily due to factors such as cost, size, visibility of the device, ease of use, and partner preference.²

However, as OAT has become more prevalent, so has a persistent myth among many clinicians: Prolonged use of OAT can cause harmful dentofacial changes, potentially exacerbating, or even causing, temporomandibular joint dysfunction (TMD).³ It's often assumed that even minor pre-existing TMD is a contraindication for OAT, rendering huge swaths of the general population incompatible for treatment.

We contend that the preponderance of evidence fails to support this notion. While OAT certainly does cause dentofacial changes, these changes are minor, and the associated side effects are typically only present during the short-term acclimatization period.²⁻⁴

BREAKING DOWN THE DATA

Oral appliances are usually worn nightly in order to advance the mandible and soft tissues of the jaw during sleep, thereby enlarging the upper airway and decreasing apnea. This process may induce changes in dental occlusion, the temporomandibular joint (TMJ), orofacial function, and masticatory muscles as skeletal and dentoalveolar structures adapt to the resultant redistribution of force over time.⁴ Particularly within the first month of OAT, these changes may cause pain in the TMJ, tenderness in the masticatory muscles, joint sounds, morning jaw pain, and other issues.⁵ There is no evidence that TMJ degeneration or myofascial pain are among these side effects.⁵

Still, these issues remain obstacles to successful treatment. However, with the regular guidance of a trained professional such as an orthodontist or dentist, they are usually minor, manageable, and transient.⁴

One 2009 study examined OAT patients at baseline and after six months of treatment, concluding that "the intensity of TMD symptoms decreased significantly throughout treatment," and that "long-term usage of an [oral appliance] does not cause impairment to the temporomandibular joint."³ Another study published in 2011 examined patients over a two-year period and discovered that while OAT "is associated with increased pain in the temporomandibular complex in the initial period of use," the transient nature of this pain prevents it from being "a reason to contra-indicate an oral appliance" in sleep-disordered breathers.⁶ Another, more recent study concluded that while OAT "might induce changes in the TMJs," these

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¹ Senaratna CV, Perret JL, Lodge CJ, et al. Prevalence of obstructive sleep apnea in the general population: A systematic review. *Sleep Medicine Reviews*. 2017;34:70-81. doi:10.1016/j.smrv.2016.07.002

² Sutherland K, Vanderveken OM, Tsuda H, et al. Oral Appliance Treatment for Obstructive Sleep Apnea: An Update. *Journal of Clinical Sleep Medicine*. 2014. doi:10.5664/jcs.m.3460

³ Giannasi LC, Almeida FR, Magini M, et al. Systematic assessment of the impact of oral appliance therapy on the temporomandibular joint during treatment of obstructive sleep apnea: long-term evaluation. *Sleep and Breathing*. 2009;13(4):375-381. doi:10.1007/s11325-009-0257-3

⁴ Knappe SW, Bakke M, Svanholt P, Petersson A, Sonnesen L. Long-term side effects on the temporomandibular joints and oro-facial function in patients with obstructive sleep apnoea treated with a mandibular advancement device. *Journal of Oral Rehabilitation*. 2017;44(5):354-362. doi:10.1111/joor.12485

⁵ Sheats RD, Schell TG, Blanton AO, et al. Management of Side Effects of Oral Appliance Therapy for Sleep-Disordered Breathing. *Journal of Dental Sleep Medicine*. 2017;04(04):111-125. doi:10.15331/jdsm.6746

⁶ Doff MHJ, Veldhuis SKB, Hoekema A, et al. Long-term oral appliance therapy in obstructive sleep apnea syndrome: a controlled study on temporomandibular side effects. *Clinical Oral Investigations*. 2011;16(3):689-697. doi:10.1007/s00784-011-0555-6

⁷ Basyuni S, Barabas M, Quinnell T. An update on mandibular advancement devices for the treatment of obstructive sleep apnoea hypopnoea syndrome. *Journal of Thoracic Disease*. 2018;10(S1). doi:10.21037/jtd.2017.12.18



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