EDITORIAL

http://dx.doi.org/10.15331/jdsm.7364

Oral Appliances and Malocclusions

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In our ongoing effort to optimize protocols for oral appliances in the treatment of snoring and obstructive sleep apnea (OSA), we have consistently prioritized case selection and appliance design. Now our focus has increasingly included combination therapy to help deliver optimal outcomes for patients. However, effective oral appliance therapy goes beyond simply selecting the best patients, appliances and therapy options.

In 2017, the AADSM published an extensive and rigorous review of the literature on side effects.[1] This paper concluded that while tooth and jaw movements do occur, they are not a significant concern in carefully selected cases. Nevertheless, malocclusions can be one of the few notable side effects encountered during therapy. Across the globe,[2] the issue of tooth and associated jaw movement is a challenge.

Clinicians employ a variety of strategies to mitigate these movements. Many rely on morning repositioning devices to monitor and correct any mandibular displacement. Others, as outlined in this issue of JDSM,[3] use innovative techniques that are tailored to individual patient needs. While these methods are generally effective, more research is needed on how to identify patients most likely to have such side effects and best prevent and manage such side effects.

If malocclusion prevention is central to treatment protocols, tooth and jaw movements should be viewed as acceptable trade-offs, provided they help patients manage their condition and improve both health span and lifespan. Patients should also be informed that CPAP therapy, despite its benefits, can cause tooth movements alongside its other inconveniences. [4,5]

Orthodontic and orthopedic forces on the teeth and jaw can indeed result from mandibular advancement. Studies estimate that each millimeter of advancement generates approximately 118 grams of force.[6] By keeping advancement to less than 50% of maximum protrusion, research has indicated that the clinician can maintain therapeutic efficacy while minimizing the risk of movement .[7] Optimal treatment should aim to balance these forces to achieve desired outcomes without unnecessary side effects.

With advancements in sleep monitoring technologies, clinicians should prioritize a conservative approach in regard to initial protrusion. By defining a cutoff beyond which further protrusion yields diminishing returns, clinicians could improve the treatment process. This may necessitate shorter—but not necessarily simpler—treatment plans, possibly incorporating options like temporary appliances. Complementary treatments such as CPAP can then be integrated, as demonstrated in the recently published CHOICE study.[8]

Fascinatingly, some research indicates that disease resolution can occur even without protrusion,[9] likely by creating space for the tongue and preventing posterior jaw movement. Although a newer technique, lip taping,[10,11] may be a promising adjunctive therapy to oral appliance therapy. However, due to potential misinformation on social media, lip taping should be used cautiously and only within evidence-based frameworks.[12]

As we embark on 2025, these insights provide valuable considerations for shaping the future of oral appliance therapy. This year promises exciting developments that will undoubtedly advance our field.

Happy New Year!

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CITATION

Masse, JF. Oral Appliances and malocclusions. *J Dent Sleep Med*. 2025;12(1)

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SUBMISSION AND CORRESPONDENCE INFORMATION

Submitted in final revised form January 2, 2025.

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