

## Oral Appliances for Sleep Apnea Improve Insomnia

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The Mayo Clinic and various medical dictionaries suggest that insomnia is a persistent disorder that can make it hard to fall asleep and/or hard to stay asleep.

In prior YHM articles I have written about the tongue as the dynamic component of the throat, compared to one's tonsils as a static component. I had discussed the muscles that make up the tongue and its anatomical connections to the rest of the body, and concluded that because of these connections, our throat airway is unstable, constantly losing and regaining patency, thus airflow, causing the following body compensations:

- **The “stress response”**: The system is flooded with our adrenaline stress hormone, which re-establishes muscle tone and function, enhances breathing and oxygen circulation, and causes the stress response sensations of the transient-increased rhythm and tempo of the heart beating. This all results in us, both consciously and unconsciously, experiencing “stress” or “anxiety.” This uncomfortable sensation is judged as having a positive or negative effect, depending on the spin.
- **Forward head posture**, which, while you're awake, translates into postural compensations down to the bottom of the feet. This leads to chronic postural changes, musculoskeletal pain, and joint degeneration. While we are asleep, our prone position leads to tossing and turning as the body reacts until airway patency is restored, even if just momentarily.
- **Clenching and grinding of the teeth** is a third form of compensation as it moves the tongue forward and out of the throat.

During sleep, this instability is challenged by the progressive relaxation and loss of muscle tone, which is associated with progression from lighter to deeper stages of sleep until the tongue collapses into the throat, blocking airflow in what is referred to obstructive sleep apnea (OSA). The compensations arouse the body to a lighter sleep stage, restoring airflow until further progressive relaxation into deeper sleep causes repetition of this throughout the night.

During wakefulness, stress response and postural compensations are more often observed than clenching/grinding teeth. Stimuli to our senses and thoughts distract us, destabilizing the muscles that keep our airway open. We experience the stress response as anxiety, which drives us to neutralize excess stress hormones.

Transitioning into sleep has us prone to both distraction and relaxation. These feed into one another, stimulating thinking, until sleepiness overpowers the generated thoughts to neutralize the stress hormones.

Oral appliances designed to treat OSA can help stabilize the airway and make us less prone to insomnia during this transition period.