

How the Luco Hybrid OSA Appliance Works

The Luco Hybrid OSA Appliance is designed to treat sleep apnea, snoring, sleep bruxism, tension/migraine type headaches and to control the trigeminal cardiac reflex stimulation associated with sleep bruxism.

It is classified as a mandibular repositioning appliance and treats sleep apnea and snoring by positioning the tongue forward, stabilizing the airway during sleep.

It treats sleep bruxism much differently. The patented forward bite that is unique to this device accomplishes three specific and very important functions:

Even Stress Distribution:

The patented forward bite provides a very even stress distribution through the facial bones (Figure 1) with only the tip of the cuspid demonstrating high stress (blue arrow).

In contrast, when the bite contacts in the molar region (Figure 2), the stress is unfavorably distributed into the mandible, up into the TMJ, under the eyes and down the nasal septum (red arrows).

The prototypes of the Luco Hybrid were designed for night time stabilization of TMD cases and worked very effectively.

Figure 1 Cuspid Bite

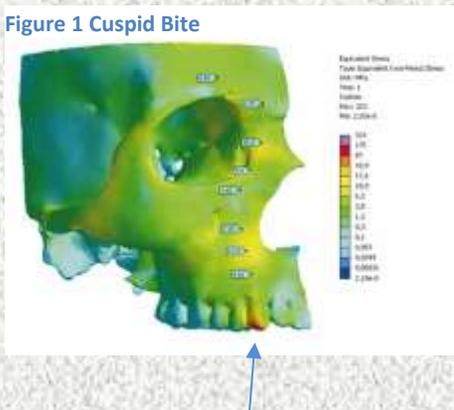
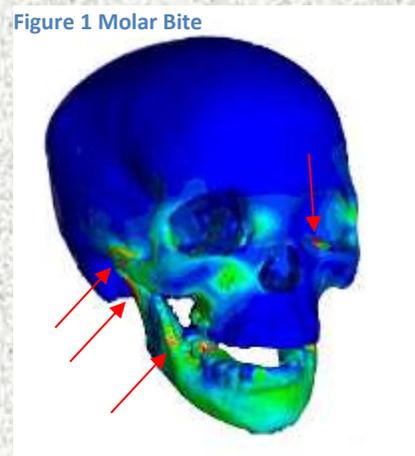


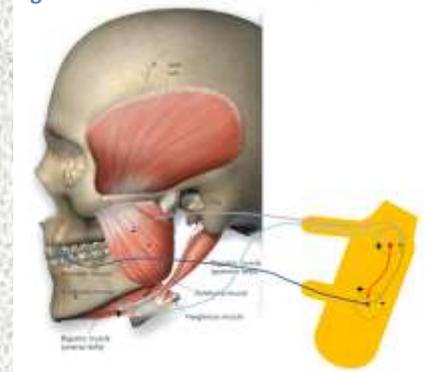
Figure 1 Molar Bite



Activation of the Periodontal-Masseter Reflex (PMR):

In sleep bruxism, the masseter inhibitory reflex is suppressed, resulting in grinding forces far in excess of normal chewing. The cuspid activates the PMR reflex that provides normal inhibition of masseter and temporalis contraction, limiting the bite forces to normal (Figure 3). Stimulation of sensory nerves in the periodontal ligament surrounding the cuspids coalesces with the motor control nuclei of the masseter and temporalis muscles inhibiting contraction, similar to the masseter inhibitory reflex (MIR) that is inactivated with sleep bruxism.

Figure 2 the Periodontal Masseter Reflex



The Trigeminal Cardiac Reflex (TCR):

The TCR is the most powerful cranial reflex that affects heart rate, breathing, blood pressure, intracranial pressure and gastric motility. In sleep bruxism, there is a stimulation of this reflex resulting in tachycardia, tachypnea, hypertension, increased cranial pressure (IPC) and increased gastric motility. Heart rate increases of greater than 75% are common, occurring concurrently with the major sleep bruxism events. The associated GERD results in accelerated wear of the enamel with the bruxism events in the low pH environment. The trigeminal nerve is the primary afferent of the TCR for which it is named.

With pressure on the cuspid and first bicuspid, there is a stimulation of the TCR seen in all regions other than sleep bruxism, and heart rate and blood pressure are lowered, breathing slowed, IPC lowered and gastric motility is slowed.

With the forward bite of the Luco Hybrid, studies have shown that it achieves this reduction, by neutralizing the stimulation seen in sleep bruxism and a normalization of heart rate etc.

In Summary:

The Luco Hybrid is much more than another sleep apnea device. It is the first and only FDA cleared treatment of sleep bruxism. It is the only FDA cleared treatment of sleep apnea and sleep bruxism when occurring together. It is clinically proven and supported by research.

Medically FDA cleared (K130797) for the treatment of sleep apnea and snoring.

Dentally FDA cleared (K160477) for sleep bruxism and associated tension/migraine headaches.



For more information in bringing this advanced treatment to your patients, please contact:



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