



# DENTAL IMPLANTS *and* BRUXISM

by Tarkan Sidal, DDS, MD



## *What is bruxism?*

Bruxism is a movement disorder of the jaws defined by teeth grinding and clenching during sleep or while awake. Bruxism is considered a factor in causing temporomandibular disorders, excessive tooth and restoration wear, and failure of dental restorations, creating excessive pressure on native teeth, dental restorations, and dental implants – resulting in bone loss around the implants or even their failure.

## *Why are your dental implants at risk?*

As expected, excessive bruxism significantly affects the longevity and function of dental implants. The implant complex is composed of multitudes of structures: bone tissue, implant, abutment, various screws, etc., and all these structures are typically under the forces of mastication (chewing). An implant's lack of compressible structure highlights the risks of heavily bruxing patients. Dental implants do not behave like natural teeth. Due to their design and positioning to the bone, native teeth absorb forces similar to a suspension.

Natural teeth in the back of the jaw also have more roots, enabling them to withstand heavy chewing. Dental implants do not have multiple roots, and this has to be compensated by increasing the diameter and the length of the implant. In addition, the human jaw is designed like a Class III lever, with the force of biting on the front teeth, far from the fulcrum and thus protecting it. When there is bite irregularity in the back of the jaws, along with bruxing and clenching, the jaw acts like a Class II lever where the load is closer to the fulcrum, transmitting more force to the joint. In simpler terms, picture a nutcracker device: the joint is the fulcrum of the device and if you move the food item to the back, it is easier to crush it with smaller force.

In addition to their multi-rooted structure, natural teeth in the back position have larger crowns to withstand the forces of chewing. A dental implant crown is kept smaller than a natural tooth to minimize the forces of chewing transmitted directly to the bone since there is no suspension present. Another clever design with natural teeth is proprioception, meaning that a natural tooth is an organ connected to one's body through the jaw, possessing a feedback mechanism to the brain, which can adjust bite force without conscious thinking. With dental implants, this ability is limited due to a lack of periodontal ligament, making the implants compatible with normal chewing forces but vulnerable to heavy abnormal forces like bruxism.

Dental implant dentistry is a state-of-the-art technology that has proven itself since the time of its advent and it is here to stay. In a sense it is similar to but much easier than hip and knee replacements – they both help us overcome the wear and tear of our bodies. Now that more people are choosing dental implant dentistry – a hybrid dentition of natural and implanted teeth functioning together – as an answer for tooth loss, it highlights the importance of bruxism and its effects.

## *How can you protect your dental implants and preserve a healthy smile?*

A prescription orthotic bite splint can ensure that your dental implant complex functions properly with the rest of your native teeth. The splint enables the distribution of the excessive force over the entire dental arch rather than focusing the force to a specific area. Need for an orthotic bite splint can be determined after the patient's bite analysis, traditionally observed by the family dentist or a dentist who specializes in that particular area. ■

**TORREY PINES ORAL & MAXILLOFACIAL SURGERY**

858-793-3393 | [www.torreypinesoms.com](http://www.torreypinesoms.com) | [info@torreypinesoms.com](mailto:info@torreypinesoms.com)

Scripps Medical Building, 12395 El Camino Real Suite 304, San Diego, CA 92130

