

Neuromuscular Dentistry: Transcutaneous Electrical Nerve Stimulation and Orthotic Solutions in Full Mouth Reconstruction

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Temporomandibular disorders (TMD) happen as a result of problems with the jaw, jaw joint, and surrounding facial nerves and muscles that control jaw movement. The main cause of this is injury to the jaw, the joint, or the nerves and muscles of the head and neck. This could also be due to the patient's occlusion not being in the proper position. Transcutaneous electrical nerve stimulation (TENS) currently is a form of electro-analgesia. Hundreds of clinical reports exist concerning the use of TENS for various types of conditions, including myofascial and arthritic pain. It uses electrical currents to stimulate muscle contractions that relieve pain and stiffness while improving jaw movement.

Orthoses is an externally applied device used to modify the structural and functional characteristics of the neuromuscular and skeletal system. They are used to control, guide, and limit joints or body segments for to otherwise correct the shape and/or function of the body, to provide easier movement capacity or reduce pain. Orthoses are also used in dentistry to adjust the patient's occlusion to a more optimum position, which allows the temporomandibular joint and the surrounding neuromusculatures to be relieved.

This Lecture will present two full mouth reconstruction cases which utilized TENS and orthotics in their treatments. In the first case, TENS and Orthosis was used to increase the occlusion of a patient with severe overbite. While in the second case, TENS and orthosis was used to recapture the occlusion of the patient with posterior open bite. Orthoses used on these patients are tooth-colored to preserve the esthetic value of the smile. This Lecture presents to the dental practitioners the importance of restoring a balanced occlusal relationship, and encourages them to incorporate the use of TENS and orthotics in their treatment planning.