

Neuromuscular Dentistry Principles

By

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Technology often allows theory to become relevant and practical. Such is the case with researchers of the 1920's in expanding the perspective of what mechanical measuring and recording instruments allowed for understanding mandibular movements and related them to dental occlusion. From humble beginnings we have progressed to high-speed computers and commercial electronic bioinstrumentation allowing dentists to fully appreciate the deep relationships of the stomatognathic system.

Neuromuscular dentistry considers the entire stomatognathic system that controls the positioning and function of the jaw, the teeth, muscles, and joints. Additionally, appreciation of the postural chain cervically is always a consideration. The bio-physiology theory comes to clinical reality with surface EMG's, 3D jaw tracking, volumetric cone imaging/tomography and electrosonnography of the joints. Establishing an occlusion based upon the most stable position and function of the TMJ and the most relaxed position and function of the masticatory muscles are key components of neuromuscular dentistry.

Through the use of dental orthotics, TENS, coronoplasty, comprehensive dental reconstruction, orthodontics, or oral maxillary facial surgery- an optimal neuromuscular occlusion is achieved. Such a stable skeletal position can solve a variety of temporal mandibular disorders involving pain and dysfunction. Pathology such as headaches, clenching or grinding, facial pain, jaw joint pain, ear congestion, dizziness, ringing in the ears, dysphasia, neck pain, postural problems, tingling of the fingertips and nervousness or insomnia can be potentially treated with correct diagnosis using these techniques.

Often patients have seen numerous health care providers with various craniomandibular symptoms and signs and found no resolution. Occlusal disharmony can be a factor or cause in many types of pain or functional problems because of the inter-relationship of the overall musculoskeletal system. With bioinstrumentation it is possible to obtain a proper resting jaw position that positively affects the facial, head, and neck muscles along with the teeth and the joints. Objective and dynamic real-time measuring tools allow the dentist to visualize physiologic responses and better assess and monitor patients in a manner that surpasses traditional manual manipulative techniques and subjective feelings. Doctors can now "see" the muscles, "see" the joints and bone movements. It is said, "you don't know what you don't know". Thanks to technology, clinical dentists are now able to better assess, diagnose, monitor and treat a variety of maladies of the craniomandibular complex. Such articulations are best considered in the context of the overall functional anatomy of the human head. The head is the most complex structure of the human body due to its integration of so many different functions in a single location.

The field of neuromuscular dentistry aspires to gain increased knowledge and clinical tools to help patients with a variety of head and cervical problems. With a cadre of dedicated professionals we are witnessing a true revolution in dental care as it forges alliances with other medical specialties on complex neuromuscular problems and treatment modalities. The theory and treatment researched by the likes of Bernard and Robert Jankelson, James Garry, Janet Travell, Clayton Chan, and others are allowing for patients, a better quality of life.