

### Dentistry Today

*“Technological and Clinical  
Advancement in Dentistry”*

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Private dental practice with  
emphasis on evaluation and  
management of orofacial Pain  
TMJ disorders  
USA



#### COLUMN ARTICLE

In the last few decades, the practice of dentistry has been enormously progressing. We have witnessed remarkable technological revolutions from Cone Beam CT scans, restoration milling machinery, digital impression techniques to laser-assisted surgery. Additionally, a deeper understanding of the anatomy and pathophysiology of the dental, oral, and maxillofacial region as well as a wider application of the vast clinically correlated knowledge have increased the dental practitioner's responsibility and participation in total health care.

One of the highly progressing areas is demonstrated in recognition and management of disorders arising from mal-position of the maxillofacial region in relation to the adjacent anatomical structures and the effect of this mal-relation on the body functions.

Currently, dentists are successful in managing several types of head and neck pain and dysfunctions that are related to the biomechanical micro traumatic effect of abnormal Craniomandibular relation. The craniomandibular abnormal relation may cause in a non-compensated situation a myriad of problems when there is tissue impingement. Disturbed condyle-disc assembly of the TMJ, TMJ compression, and inflammation, spasm of the muscles of mastication; torn, strained or over stretched mandibular ligaments, peripheral nerve impingement are examples of cranioman-

dibular disorders. Examples of these symptoms are pain, particularly in the masticatory muscles and/or temporomandibular joint (TMJ), radiating pain in the face, jaw, or neck, jaw muscle stiffness, limited movement or locking of the jaw, painful clicking, popping, or grating in the TMJ when opening or closing the mouth; and many seemingly unrelated symptoms such as tinnitus, dizziness, lightheadedness, sinus-like pain and supraorbital pain.

These problems are managed by repositioning the mandible in physiologic relation to the cranium through the use of mandibular repositioning orthopedic appliances as well as rehabilitating the related soft tissue structures using physical medicine modalities.

In the same time, dentists have been important assets in sharing the care of sleep-disordered breathing particularly snoring, upper airway resistance syndrome (UARS) and obstructive sleep apnea (OSA). Dentists have the opportunity to evaluate the airway of every patient they examine or treat. This is especially true when finding a large retruded tongue or mandible, or narrow maxillary dental arch. Thus, dentists are in an exceptional position to be the first line of recognizing a potential adverse health issue such as constricted airway. Moreover, through reviewing the patient medical history; the dental practitioner may find the presence of related symptoms such as gasping, choking or snorting during sleep, feeling sleepy, drowsy, sluggish or tired, despite a full night's sleep, waking up tired, exhausted or with a headache, unintentional falling asleep in inap-

appropriate situations including watching T.V, lecture hall, or sitting quietly, having memory and concentration problems, behaving with irritability, annoyance, and ill-temper. Constricted airway is proven to be OSA that is found to be associated with risk factors for serious medical conditions including stroke, diabetes, cardiovascular diseases including hypertension, cardiac arrhythmia, heart attack, and erectile dysfunction. In addition, many motor vehicle accidents are attributed to daytime sleepiness as a result of sleep apnea.

The dentists are able to construct a mandibular advancement device (MAD) that allows proper opening of the airway for better breathing during sleep preventing or reducing the incidence of apneas. According to the American Academy of Sleep Medicine and American Academy of Dental Sleep Medicine, Oral Appliances that are constructed by a trained dentist are indicated for use in patients with mild to moderate OSA who prefer them to continuous positive airway pressure (CPAP) therapy, or who do not respond to, are not appropriate candidates for, or who fail treatment attempts with CPAP. They are comfortable, easy to wear, quiet, portable, convenient for travel and easy to care for.

In summary, the clinical and technological advancement in dentistry have positioned the dental practitioner in a unique situation to recognize, manage and care-sharing many health issues that were previously overlooked.

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