

Maxilla to Mandible

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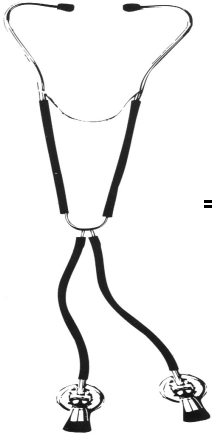
Dr. Gerald B. Wexler, B.Sc., D.D.S.

General Dentistry practice limited to

Temporomandibular Disorders, Orofacial Pain, Oral Reconstruction

2197 Riverside Drive, Suite 105, Ottawa, Ontario K1H 7X3

Phone (613) 731-2149 Fax (613) 731-0558 /www.drgeraldwexler.com



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Editorial

There is a common misconception that bruxism is the same as clenching and grinding due to occlusal dysfunction. Bruxing and occlusal dysfunction are two different entities.

Bruxing is CNS driven and is an inside-out motion. Occlusal dysfunction is an interference in the envelope of function which causes in inefficient use of the chewing system. It is an outside-in movement. Bruxing is parafunctional movement with no useful purpose, is limbic or basal ganglia induced (CNS), related to sleep disorders and occurs irrespective of occlusal fit or misfit. A splint has no effect on stopping, slowing, or changing bruxing episodes or forces by affecting the cause.



It is my opinion that much of what is labeled "bruxism" by many lecturers and practitioners, is actually not bruxism but rather occlusal dysfunction related to interferences in the path of function. Splints don't change the CNS parafunctional bruxism although they can help with behavioural deprogramming. Their role is mostly protective.

However a splint can significantly help occlusal dysfunction. If a person has wear that is actually from a functional interference, that wear is often mislabeled parafunctional bruxism. When the splint seems to improve symptoms and dysfunctional avoidance, it can be mistaken for stopping bruxism, which is a misnomer. In the case of occlusal dysfunction, once the dysfunctional engram is eliminated, the need to make dysfunctional movements to avoid interferences ceases.

In bruxism appliance therapy, symptoms may decrease and teeth are protected from parafunctional wear, but the wear on the splint continues. It will help to reduce damage to joint and teeth.

Bruxing wear tends to be smooth, regular and gashing, like a tornado going through town. Wear from occlusal dysfunction tends to be irregular, more unilateral and anterior, and tends to follow the chewing patterns.

Understanding this nuance will enable us to determine whether there is pure unadulterated parafunctional bruxism, which will not dissipate after appliance therapy although it can reduce to some degree, or occlusal dysfunction which can respond to appliance therapy. Therefore if wear continues in the absence of occlusal dysfunction, it is bruxism. If wear stops after splint therapy it was not from bruxism. Using an acrylic splint can be a method of observing whether wear is from bruxism or from occlusal dysfunction or chewing.

Ultimately bruxism treatment will center on:

- Interrupting episodes by disruption of REM.
- Decreasing forces.
- Medical modulation of basal ganglia or limbic dysfunction and improving quality of sleep.
- Cognitive and behavioural management.
- Splints to protect from tooth wear.

I would like to take this opportunity to wish everyone Happy Holidays and a New Year filled with Health and Happiness!!

Dr. Wexler has 28 years experience in the field of jaw treatment. He is a Diplomate, American Board of Orofacial Pain, member of the American Academy of Craniofacial Pain, American Academy of Orofacial Pain, American Headache Society, and the American Academy of Dental Sleep Medicine. He is a Fellow of Academy of General Dentistry, member of the Canadian and Ontario Dental Associations and the Ottawa Dental Society. His practice is limited to treatment of temporomandibular disorders and orofacial pain.

Non-surgical Treatment of Sports-related TMJ Disorders in Basketball Players

Injuries to the face and teeth are common in sports, ranging from 11-39% of all sports injuries. In this study, 18 basketball players ranging in age from 14 to 32 years were given complete dental and medical histories. Their physical examination included measurement of maximal jaw movements and palpation of the TMJs and masticatory muscles. Joint sounds were also recorded. MRI's confirmed the diagnosis.

Players who were found to have masticatory muscle disorder were given acrylic resin full-arch maxillary stabilization splints. These individuals were told to wear the splints at all times, except when eating and brushing teeth. Players with internal derangement without reduction were given stabilization splints, and manual manipulation was performed. This non-surgical treatment resolved the symptoms in 6-8 months.

Dent Traumatol 20: 338-343.

Profile Changes Associated with Different Orthopedic Treatment Approaches in Class III Malocclusions

Patients with Class III malocclusion are difficult to treat to help achieve a satisfactory soft tissue profile. Early treatment is advised to help these patients avoid seeking orthognathic surgery as adults. After one year of treating patients with a chincup, chincup plus bite plate, or reverse headgear, all three therapies resulted in facial changes and improvements, including an increase in facial heights. In addition, all treatments resulted in an increase in overjet, a decrease in overbite, and protrusion of the upper and retrusion of the lower incisors.

The reverse head group produced a large forward movement of the maxilla and in the mandibular region. Because the reverse headgear and chincup plus bite plate produced similar improvements, treating both jaws instead of a single jaw may be indicated.

Angle Orthod 74: 733-740.

Relationship Between Internal Derangement of the TMJ and Dentofacial Morphology in Women with Anterior Open Bite

Internal derangement (ID) of the temporomandibular joint is the most common form of TMD and is more prevalent in females than males. Numerous imaging

techniques can be used to non-invasively assess TMJ relationships, including transcranial radiography, CT, and MRI. MRI has been shown to provide clinicians with a high degree of reliability in the assessment of articular disc position in the TMJ. ID is thought to be a factor which can influence facial development and morphology.

The purpose of this study was to "determine the relationship between TMJ ID and dentofacial morphology in women with anterior open bite." Fifty-one women with anterior open bite were enrolled in the study. Based on MRI imaging studies of the TMJ, these women were divided into three groups: normal disc position, disc displacement with reduction, and disc displacement without reduction.

Results demonstrated that ID was more commonly associated with small mandibular size, posterior rotation of the mandible, and class II relationships. These patterns were more prevalent in women with disc displacement without reduction as compared to those with normal disc position.

From these data the authors conclude that certain cephalometric characteristics are associated with TMJ ID in women with anterior open bite, including: decreased posterior facial height; decreased ramus height; and backward rotation of the mandible.

Am J orthod Dentofac Orthop 128: 87-95, 2005

Predictors for Class II Treatment Duration

The purpose of this study was to identify any clinical variables that might be useful in predicting treatment length for Class I and Class II, Div I malocclusions. The authors collected information from patient records, model pretreatment lateral cephalograms and treatment notes, and used regression analysis to determine if any description parameters correlated with treatment duration.

In all Class I and Class II cases, age, pretreatment overjet and pretreatment ANB angle were significant predictors of treatment duration. In considering only Class II cases, the type of Class II appliance used for treatment, the number of months the appliance and interarch elastics were worn, maxillary expansion, number of debonds and average time between appointments were all significant variables in predicting treatment length. However, these six variables explained only 56.7% of the variation in Class II treatment duration.

AM J Orthod Dentofac Orthop 127: 293-300, 2005.