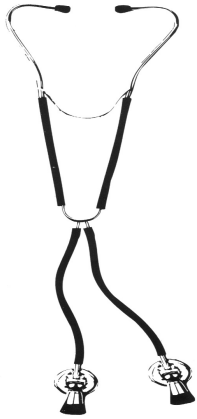


# Maxilla to Mandible

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## Editorial

I have had many inquiries from patients whose children grind their teeth, sometimes severely. There has been a lot of research and theories recently on this subject. Some research points to a relationship between bruxism and anxiety in children. Other researchers consider bruxism in children is a sleep disorder. They show that bruxers also snore and most likely have sleep apnea. Sleep apnea in children is not the same as in adults. Many times they have deep bites and exhibit wear on the teeth. This suggests that we should look at the airway of all bruxing children.

As to the question of childhood bruxers becoming adult ones, some research suggests a lifelong tendency to brux exclusive of occlusal factors. It is thought that if children are still bruxing after 12 years old then it will likely continue.

One treatment especially in the mixed dentition is to bond composite to the Ds and Es on the lower and open the bite. This works very well

to create tongue space, open the vertical and allows the permanent first molars to erupt. There are many articles on this topic now that are available. A soft appliance can be one easy and quick way to go but is limited in its long term beneficial effects. A hard thermoplastic appliance can also be used but must be comfortable. Appliances will need frequent replacement as the jaw grows. Stretching exercises and advice as to how to delay thin jaws is also very helpful. Breathing exercises are good for relaxation. Progressive relaxation techniques are learned easily by children. Even biofeedback has been very effective for young children. Also be aware that there is a high incidence (35%) of psychopathology affecting children who present for TMD treatment. Referral to a child psychologist can be considered.

As with most TMD problems, the answer is likely to be multifactorial. Hopefully further research will be able to clarify these issues, allowing for better treatments.

*I would like to take this opportunity to wish everyone a happy and healthy holiday!*

## Temporomandibular Joint Morphology and Disc Position

The relationship between mandibular morphology, the TMJ, and disc remains unclear. In an attempt to clarify this relationship, the authors examined 44 Class III patients with cephalograms. They then classified the 88 joints into 4 types using magnetic resonance imaging based on the disc position and shape: anteriorly displaced disc, anterior type, fully-covered type, and posterior type. TMJ morphology was also measured tomographically in the sagittal plane. The incidence of internal derangement in asymmetrical class III patients was higher than in symmetrical mandibular prognathism, and this difference is associated with a difference in TMJ morphology of both sides. The fossa ratio on the deviation side was significantly higher than on the nondeviation side in the asymmetry group.

Because MRI showed some asymptomatic joints demonstrating anterior displacement, it is important to examine the TMJ with MRI. The results of a higher incidence of disc displacement in the asymmetry group also suggest that asymmetry can lead to an increase in the occurrence of TMJ disorders with an anteriorly displaced disc. The authors suggest that the fully covered and posterior joint types are actually a TMJ morphology that has adapted itself to individual mandibular morphology because TMJ symptoms are very low and function is normal.

J Cranio-Maxillofac Surg 362-268



## Reduced Neuropsychologic Measures as Predictors of Treatment Outcome in Patients with Temporomandibular Disorders

Up to 30% of TMD patients do not respond to therapy due to a combination of behavioral and psychosocial factors. These factors may help predict the outcome of a patient's treatment. After pretesting patients suffering from TMD prior to treatment for various neuropsychologic, psychosocial, and clinical parameters, visual analog scales for pain and global transitional outcome measures were used to determine treatment success. Treatment response was then correlated with the various test scores. Those that did not respond to treatment had greater memory deficits, sleep disturbances, depression, fatigue, and lower energy levels compared to those who did. The best predictors of treatment outcome were Peterson-Peterson Consonant Trigram Test scores and the California Verbal Learning Test. Other variables that predicted poor outcome were income and pretreatment pain on chewing. However, correction of sleep disturbances does not always improve TMD pain.

Activation of the trigeminothalamocortical pathway may explain why non-responding patients also perceive ongoing muscular and TMJ pain, as well as pain on chewing, when compared to those who respond. Patients with reduced cognitive function may find it difficult to ignore the pain. Pain on chewing could also cause continual activation of the anterior cingulate cortex, leading to chronic pain. Thus, recovery may depend on the ability of a cognitively intact individual to learn to ignore the painful muscles and mandibular limitation rather than eliminating the muscle pain or limited opening.

J Orofac Pain 15: 329-339.

## Diagnostic Approach in Patients with Temporomandibular Joint Pain

This study involved 150 patients with unilateral TMJ pain, 10 with bilateral TMJ pain, and 34 without TMJ pain. Bilateral sagittal and coronal magnetic resonance images were taken to look for TMJ internal derangement and/or osteoarthritis. The TMJ pain correlated with MRI diagnoses of 2 conditions at ~65% and 45%, respectively. However, because a clear definition of the TMJ pain group was only evident for the disc displacement without reduction and involved only a few TMJs, there may be other factors besides internal derangement and osteoarthritis that contribute to TMJ pain. Further research is needed to determine which additional TMJ related features may be used for diagnosing a disorder with or without risk for pain and dysfunction.

Oral Surg Oral Med Oral Pathol Oral Radiol Endod 93: 39-44.

## Vertical-Split Fracture of Mandibular Condyle and its Sequelae

A 16-year-old female being assessed for orthodontic treatment was found to have an irregular head of the right mandibular condyle, which was attributed to a partially healed intracapsular vertical-split fracture after a panoramic radiograph was taken. The fracture was the result of a fall 10 years earlier but surgical intervention was deemed necessary at the time. Facial growth had been normal and there was no dysfunction since the accident.

It was decided that orthodontic treatment would not affect the stability of the condyle and joint. Although the treatment was completed successfully without any complications, the patient's condition will continue to be closely monitored. This case shows that a complete review of the radiograph, including joints, is important in recognizing such injuries.

Brit Dent 191: 557-558.

## Reports of SSRI-Associated Bruxism

Fluoxetine, fluvoxamine, paroxetine, and sertraline fall into the class of antidepressants called selective serotonin (5-hydroxytryptamine reuptake inhibitors SSRIs). SSRIs have a high selectivity for serotonin reuptake because they enhance serotonin neurotransmission. Because the use of such drugs has been associated with bruxism, a survey was conducted of doctors to determine the prevalence of this type of bruxism. Frequent observations of already registered side effects were found, and 3.2% reported the occurrence of bruxism after using paroxetine and fluoxetine, including clenching and/or grinding and masticatory muscle symptoms. One case report of a female health care worker who had such symptoms after taking paroxetine showed that her symptoms disappeared after taking the drug. No bruxism-related symptoms were reported in association with fluvoxamine and sertraline. These results justify further controlled studies, including testing the effects of buspirone, and antidote for SSRIs.

J Orofac  
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Pain 15: 340-



## Orthodontics and Occlusion

The goals of orthodontic treatment should focus on the patient's needs rather than achieving "optimal" occlusion. Fortunately, these two goals usually coincide.

However, it is important to conduct a full occlusal examination for orthodontic patients, including their habitual bite and ideal jaw relationship. Otherwise a malocclusion cannot be fully assessed and mistakes in treatment can result.

The muscles and TMJs should also be examined for their condition, as well as the periodontal tissues. In general, treatment falls into two categories: camouflage and modification of the skeletal pattern by functional appliances or surgery. Surgery should only be performed in extreme cases.

Regarding TMD, there is some evidence that orthodontic treatment causes TMD, there is no evidence that a treatment plan involving the extraction of teeth is more prone to TMD. In fact, no damage is done to the facial profile or occlusion after teeth are removed. On the other hand, orthodontics is occasionally used to treat TMD. A large discrepancy between centric occlusion and centric relation should not be an outcome of orthodontic treatment.

*Brit Dent J 191: 539-549, 2001*

## Clinical TMD, Pain-Related Disability and Psychological Status

A computerized online real-time TMD diagnostic system, based on research diagnostic criteria developed at the University of Washington, was used to evaluate 107 patients, ranging in age

from 12 to 64 years. About 38% of the patients were moderately to severely depressed and were more distressed by headaches, nausea or upset stomach, and sore muscles when compared with normal patients. Thus, psychological factors may be an important consideration when treating TMD.

The study also found that about 21% of patients had myofascial pain, and only 7.5% had limited mandibular opening associated with such pain. Over 80% did not suffer from disc displacements, and less than 10% had arthralgia. The three most frequent jaw disabilities were eating hard foods, yawning, and chewing.

*J Oral Rehabil 29(4): 374-380, 2002.*

## TMJ Involvement in Rheumatoid Arthritis

High-resolution computerized tomography (HRCT) was used to analyze 15 patients in an effort to determine diagnostic factors. The most common factors found were decreases in joint space, mandibular subchondral cysts, temporal subchondral cysts, degeneration, abnormal shapes and heights of the mandibular condyle, condylar head resorption, erosion of the mandibular condyle, and demineralization. The most common clinical findings were joint pain on palpation, crepitation of two TMJs, and limitation in mouth openings.

Because TMJ involvement was initially detected by HRCT before the symptoms or clinical findings developed, this method may be a useful imaging technique for detecting TMJ involvement in suspicious patients. During follow-up, HRCT or magnetic resonance imaging is also recommended to determine the appropriate treatment and how the disease is progressing.

*J Caniomandib Prac 25(2): 105-110, 2002.*