

Maxilla to Mandible

Winter 2005

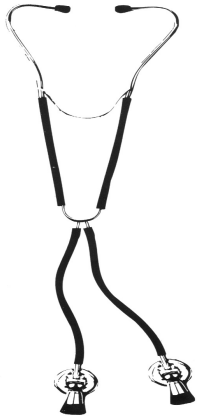
Dr. Gerald B. Wexler, B.Sc., D.D.S.

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



Topics In This Issue

TMD in Children with Primary Dentition.....	2
TMJ Growth Changes in Herbst Treatment.....	2
Prevalence of Signs and Symptoms of TMD.....	2
Jaw-Deviation Dystonia.....	3
Longevity of TMD Improvements After Active Treatment Modalities.....	3
TMJ & Scleroderma.....	3
Oral Parafunctions and Association with Symptoms of TMD.....	3
Determinants of Successful Chincup Therapy in Skeletal Class III Malocclusion.....	4
Shear Properties of TMJ Disc in Relation to Compressive and Shear Strain.....	4

Editorial

We often see news reports of severe weather related catastrophe's. We may pass it off or go as far as thinking - "glad it's not me"! The tropical rain storm of September 9/04 changed that for me and for many others in the Ottawa area who were flooded by sewage backups.

Our office was essentially destroyed and we lost much of our desks, equipment, counters, carpets and flooring. Fortunately we were able to save our files and computer system.

As a result, our office has had to be completely rebuilt! We have been off work for over two months, returning to a full schedule on the 15th of November. It's great to be back being productive again.

We have increased our time in the office by one hour each day and have added an extra day. We

hope to be able to catch up over December and January however some delays in seeing patients are inevitable. Please bear with us and if you have any special needs or concerns, please call and we will do our best to accommodate you and your patients' needs.



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



Dr. Wexler has 25 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.

TMD in Children with Primary Dentition

In 99 children with primary dentition, ~34% presented with signs and/or symptoms of TMD. Of symptomatic patients, 50% presented at least one sign or more: 21.6% of those without symptoms had signs. The most prevalent symptoms was frequent headache, followed by jaw pain, earache and difficulty in swallowing. Jaw deviation was the most prevalent sign, followed by occlusal interferences, asymmetric condylar movement and TMJ sounds.

Occlusal interferences were attributed to deviation of long axis of teeth, crossbite and open bite. Earache could be from a deep over bite or retruded anterior teeth. Even though the prevalence of these signs and symptoms were relatively low (ranging from 3-18%), a routine dental examination of the TMJ and masticatory system of young children is recommended to identify high-risk patients so that they can be monitored for later treatment.

J Clin Pediatr Dent 28: 53-58, 2003.

TMJ Growth Changes in Herbst Treatment

The long-term effects of continuous (24 hours/day) mandibular protrusion during a fixed time period (7.5 months) on TMJ growth were evaluated. Herbst treatment was found to temporarily stimulate condylar growth and direct it posteriorly. There was also only a temporary effect on physiologic posterior glenoid fossa growth displacement in the anterior direction.

The effective TMJ changes mainly reflected the changes in condylar growth. However, the amount and direction of these TMJ changes may be affected by fossa displacement changes and possible condyle-fossa relationship changes during and after treatment.

Angle Orthod 73: 493-501.

Prevalence of Signs and Symptoms of TMD

In this study of adults 20 years or older, although half showed one or more clinical signs of TMD, less than 3% were aware of any pain symptoms. In general, women 20 years or older showed higher prevalence for all signs and symptoms.

TMJ sounds such as clicking and crepitation were found in ~25% of all subjects, with women having joint sounds almost twice as often as men. In the 40-to-59-age group, women exhibited limited mouth opening and pain upon movement of the mandible more frequently than did men. Crepitation and limited maximum mouth opening significantly increased with age in both genders.

Quintessence Int 35: 143-150, 2004.



Jaw -Deviation Dystonia

Jaw-deviation dystonia involves the lateral shift of the mandible due to involuntary masticatory muscle contraction, causing difficulties in speech or chewing. A 36-year-old female patient was evaluated by recording movement-related cortical potentials and treated with muscle afferent block by intramuscular injection of lidocaine and ethanol. The deviation found with left lateral movements disappeared and problems with speech and chewing significantly improved. There were no significant side effects.

J Craniomandib Prac 21: 295-300, 2003

Longevity of TMD Improvements after Active Treatment Modalities

With follow-up averaging 41 months after TMD and craniofacial treatment, patients who underwent the treatment showed long-term beneficial results. Also, the study showed that gender did not play a role in symptom levels and outcomes.

J Craniomandib Prac 22: 110-114, 2004.



TMJ & Scleroderma

Scleroderma is a rare condition, where hardening and tightening of the skin, subcutaneous tissues and muscle may occur. The most common form found in children is localized scleroderma, which though benign can cause significant deformity if it occurs on the face.

This case involved a 9-year-old girl with facial localized scleroderma who was having difficulty in performing normal mandibular movements. There was also a reduction in mouth opening with a deviation of the midline, resulting in TMJ pain on the right side.

The patient was treated with a functional appliance, which increased the mouth opening to 37 mm after 8 months and eliminated the deviation and pain. However, the patient stopped wearing the appliance because she was satisfied with the results. Three years later the patient developed a malocclusion with facial asymmetry, accompanied by atrophy of the masticatory muscles on the right side.

The patient is undergoing a fixed orthodontic treatment combined with functional appliance therapy. The authors recommend that such patients should wear an activator as many hours a day as possible for at least two years to prevent these conditions from occurring, with mandatory monitoring to make sure the patients are following instructions.

J Clin Pediat Dent 27: 33-38, 2003.



Oral Parafunctions and Association with Symptoms of TMD

In 3557 university students between 18 and 26 years old, chewing on one side caused an increased risk of TMJ noise, pain, and impaired mouth opening. Teeth clenching also increased the risk of TMJ noise and reduced mouth opening. Females were more prone to TMD.

Overall, reported TMJ noise, TMJ pain and impaired mouth opening were 41.7%, 16% and 16.3%, respectively. Gum chewing might also eventually become a factor in TMD in this population, if this habit becomes more popular.

J Oral Rehabil 31: 518-523, 2004.

Determinants of Successful Chincup Therapy in Skeletal Class III Malocclusion

Successful chincup therapy depends on a variety of factors, including facial skeletal pattern, age, treatment timing and duration, and growth characteristics of the patient. In this study of 40 patients who underwent chincup therapy and orthodontic treatment, chincup therapy resulted in backward rotation of the mandible, with more rotation in the group with poor results. This group also showed more forward rotation and forward growth of the mandible. Differences in skeletal and dental morphology were also found between the two groups, including upper gonial angle, articular angle, and facial convexity angle. The poor results group also showed more skeletal Class II malocclusion tendency and concave lateral facial profile.

During fixed orthodontic treatment and retention, the mandible rotated forward as growth

continued in both groups. However, the amount of mandibular body and ramus growth was greater in the group with poor results, which indicates that the mandible was more anteriorly positioned. The anterioposterior jaw discrepancy also became significantly worse in this group, which was attributed to more forward rotation and growth in the mandible. Open bite tendency also prevented the therapy from being successful.

Am J Orthod Dentofac Orthop 126: 33-41, 2004.

Shear Properties of TMJ Disc in Relation to Compressive and Shear Strain

Understanding how mechanical forces affect the disc is important for treating TMD. For instance, shear stresses may occur during loading since the articular surfaces are not parallel, resulting in different deformation paths.

In this study, the dynamic shear moduli increased in loading frequency, which was attributed to water movement within the matrix of the disc. The resistance to shear was also dependent on the amount of compression of the disc. Shear softening occurred at very low shear strain amplitudes (0.5% to 1.5%), which was believed to be due to a larger viscosity at low shear rates than at high rates.

J Dent Res 83: 476-479, 2004



*Please visit us
at our website:*

www.drgeraldwexler.com
