

EARLY ORTHODONTIC TREATMENT KEY TO LONG TERM HEALTH

How children's malocclusions are treated in the mixed dentition can affect their long term health. Nasal breathing is extremely important as the child gets 20% more oxygen compared to mouth breathing. Constricted maxillary arches frequently causes crowding problems. The maxillary lateral incisors erupt on the palate and the cuspids erupt labially (fang look). Orthodontic clinicians who believe in the functional philosophy prefer to use arch expansion appliances to develop the upper arches to normal size. This increases the width as well as the height of the nasal cavity which enhances the child's ability to breathe through their nose.



CONSTRICTED MAXILLA



**MAXILLA EXPANDED
6 MONTHS**



**MX SCHWARZ APPLIANCE
MIDLINE EXPANSION SCREW**

The other treatment approach is to leave the maxillary arch constricted; the malocclusion worsens and wait until all the permanent teeth erupt. Unfortunately this is the approach the majority of the orthodontic clinicians prefer. To correct the crowding problems and the overjet problems the treatment is often the extraction of the upper bicusps. This can have serious health consequences for some patients in the future.

Approximately 70% of all malocclusions are Class II skeletal with normally positioned maxillas and underdeveloped mandibles. The majority of these Class II patients have their condyles posteriorly displaced.

The problems develop when the condyles are posteriorly displaced and cause compression of the nerves and blood vessels distal to the condyles. This also causes numerous unpleasant symptoms including headaches, tinnitus, ear pain, stuffiness in the ears, fainting, dizziness, numbness in the hands, pain behind the eyes, shoulder, neck and back pain.

Some children can have undesirable symptoms at an early age but this becomes a much more serious problem after age 20 especially for females. When the condyles are posteriorly displaced and the lower jaw is retruded the treatment of choice would be to utilize functional jaw repositioning appliances such as a Rick-A-Nator, Twin Block or MARA appliance. These appliances will reposition the lower jaw to the correct position which will significantly improve the patients profile as well as their health. It will also move the condyles down and forward to their correct position to eliminate or prevent TM dysfunction. Before you can reposition the lower jaw forward with functional appliances the maxilla must be developed to its normal width. Otherwise when the lower jaw is advanced this will create a buccal crossbite which is unstable and the treatment will not be successful.

Early orthodontic treatment with functional appliances can help improve the long term health of patients.



**PRETREATMENT
RETRUDED MANDIBLE**



**FUNCTIONAL APPLIANCE
9 MONTHS LATER
STRAIGHT PROFILE**

Some orthodontic clinicians prefer to wait until all the permanent teeth erupt prior to treatment. They employ the retraction technique and extract upper bicuspid and retract 6 anterior teeth in order to correct the overjet. The result is a concave profile, retrusive upper lips which make the nose appear to be longer.

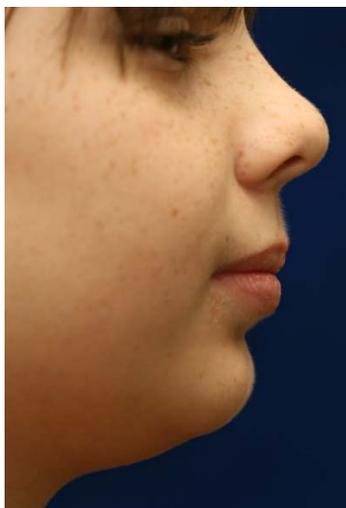
Functional clinicians are not in agreement with this treatment approach for Class II skeletal patients. When the profile and cephalometric measurements clearly indicate that the mandible is underdeveloped and the maxilla is in an ideal position, why would anyone want to retract the maxilla? This also does not address the problem of an underdeveloped mandible. In fact, at the end of treatment now we have an underdeveloped maxilla and mandible. This extraction-retraction technique does not change the position of the condyle

in the fossa which continues to compress the nerves and blood vessels and cause TM dysfunction.

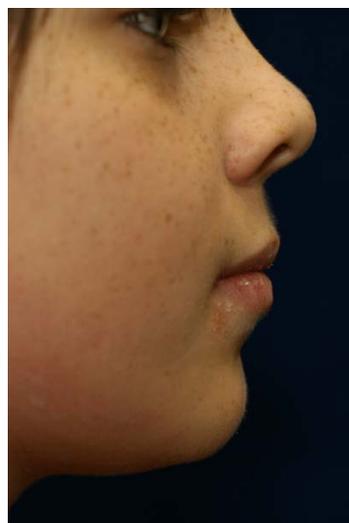


**CONCAVE PROFILE
BICUSPID EXTRACTION
OBSTRUCTIVE SLEEP APNEA**

Recently many general dentists are taking courses and learning to fabricate oral appliances to treat snoring and obstructive sleep apnea (OSA). The consequences of undiagnosed and untreated OSA are an increased risk of high blood pressure, heart attacks, strokes, Type 2 Diabetes, impotence, memory loss, depression, dementia and acid reflux (GERD).



**MALE AGE 10 HEADACHES
UNDERDEVELOPED LOWER JAW**



**ELIMINATE HEADACHES
RICK-A-NATOR
LOWER JAW REPOSITIONED FORWARD**



DEEP OVERBITE 6 mm



**RICK-A-NATOR
DEEP OVERBITE CORRECTED**



**RICK-A-NATOR
MOLAR BANDS
INCISAL RAMP
.050 S.S. CONNECTOR WIRES**

The dental profession needs to become more involved in treating approximately 20% of the adult population that has OSA. Although obesity plays a role in causing OSA a large number of untreated Class II patients with large overjets and retrognathic mandibles have OSA.

One of the common causes of OSA is when the tongue falls back and blocks the airway for 10 seconds or more. Some OSA patients can have 30 or more of these apneic events per hour which can have serious long term health consequences. The treatment for OSA by the dental profession is to fabricate an oral appliance that advances the mandible and the tongue to open the pharyngeal airway. As patient's age and they put on weight, the fat in the neck decreases the size of the airway. Also, as we age we lose tonality in the pharyngeal muscles surrounding the airway. Class II skeletal patients treated with bicuspid extractions have an increased incidence of OSA. Patients treated with the functional philosophy to advance the mandible are less likely to get OSA as their mandibles were advanced with functional appliances when they were actively growing.

If the early use of functional appliances can help prevent TM dysfunction and obstructive sleep apnea (OSA), then clinicians should consider offering this treatment philosophy to their younger patients. Orthodontic clinicians must consider the consequences of choosing the retractive technique to treat Class II skeletal patients.