“Real” Early Orthodontic Treatment: From Birth to Age 8

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A new standard is needed for earlier orthodontic (teeth) and orthopedic (jaw-bone) diagnosis and treatment from birth to age eight. It is warranted because published research increasingly shows that small jaws create small airways and increasingly shows that small jaws create small airways and increasing the likelihood of life-threatening disorders, for life. Jaw and airway related disorders like sleep apnea have recently moved to the forefront of some medical research. Medical attention is drawn to these disorders because direct relationships to hypertension, heart disease and premature death have been discovered. Increasing the size of the jaws and airway during early growth and development may reduce human disease.

Since the upper and lower jawbones form the gateway to the human airway, earlier orthodontic and orthopedic jaw treatment are needed to help more small jaws and airways reach their full growth potential. Although chronological growth of the jaws needs to be better understood, it seems clear that earlier treatments cause complimentary orthodontic and orthopedic jawbones form the gateway to the human airway, a new earlier orthodontic and orthopedic treatment protocol.

Newer multi-phase FJO diagnosis and treatment approaches can increase early treatment effectiveness, as well as long term overall efficiency. A new FJO protocol of routine multi-phase orthopedic examination, diagnosis and treatment involving the general dentist, pediatrician and orthodontist can result in superior unique health benefits for the patient. These new FJO concepts may very well help general dentists, pedodontists and orthodontists move dental care into a future world of medical dentistry and Functional Jaw Orthopedic (FJO) diagnosis and treatment. This article will show some early treatment techniques with patient outcomes that exhibit the very unique results of earlier orthodontic and orthopedic treatment.

A review of current clubfoot pediatric orthopedic protocol which starts at birth, is important to understanding why earlier orthodontic and jaw treatment protocols should also start at birth. Clubfoot bones and malformed jawbones have parallel needs and parallel growth patterns, but rather different treatment timing approaches. Today, clubfoot bones are routinely examined, diagnosed and treated beginning at birth. Conversely, substandard maxilla and mandible jawbones are not routinely examined, diagnosed and treated until about age 6, after about 80% of growth is already finished.

A clubfoot is an abnormal condition of the foot, which is usually present and very visible at birth.3 About one in every 1,000 babies are born with one clubfoot and about one in 2,000 will have both feet affected. The primary cause of a clubfoot remains unknown. A clubfoot is commonly bent downward and inward and may also be rotated. Diagnosis can sometimes be made in utero. Active treatment begins as soon as possible after birth, often within days. Early treatment may involve massage, manipulation, physical therapy, splints, taping, orthopedic casts, braces and even surgery. Some deformities are mild and others are severe, so treatments and braces vary. A clubfoot deformity will not usually improve on its own. Untreated, it will usually worsen and become unsightly and crippling.3 At birth, early clubfoot treatment is a medical priority.

Diagnosis of a clubfoot is much easier than diagnosis of an abnormal jawbone. The dramatic difference in diagnostic capability results in a major difference in the timing of orthopedic treatment. Early foot examination can rather easily lead to early recognition, diagnosis and treatment of a very distinct clubfoot deformity. Conversely, an abnormal jawbone can be quite subtle in its irregularity.

Abstract

This article will introduce new concepts for earlier orthodontic (teeth) and orthopedic (jaw-bone) diagnosis and treatment from birth to age eight. While life-threatening disorders around age 8 is getting some attention, age 8 is still too late to orthopedically guide proper jaw and airway growth and increase the likelihood of life-threatening disorders, for life. Since the upper and lower jawbones form the gateway to the human airway, a new earlier orthodontic and orthopedic protocol and standard is warranted. Unique Functional Jaw Orthopedic concepts will help form a new early orthodontic protocol. These new concepts will help general dentists, pedodontists and orthodontists move dental care into a future world of medical dentistry that will include airway development, heart disease and longevity.
disseminated by the untrained eye. As a result, early upper and lower jaw active treatment protocols often seem better, but the true medical need goes unrealized.

Early jaw treatment is relatively nonexistent for most children under six years of age today because early diagnosis is relatively nonexistent. Hospital professionals in the health fields currently associated with birth and delivery lack orthodox jaw diagnostic and therapy training.

Avoid in early jaw healthcare, "real" early orthodontic and orthopedic diagnosis and treatment are currently associated. Health professionals in general lack the training and ability to recognize abnormal early maxilla and mandible deformity in children less than six years of age.

The current orthodontic specialty protocol that recommends an orthodontic screening by age 7 confirms the early jaw diagnosis gap and the indispensible need for earlier diagnostic training.2 Orthopedic jaw treatments from birth to age 8 will likely become a health priority once the diagnostic and treatment protocols are better defined and the benefits are better understood.

The void in early orthodontic and early jaw knowledge and treatment is wide, even at the research level. The late medical researcher, writer and lecturer Dr. James F. Bosma (M.D.) wrote in his 1989 book, Anatomy of the Infant Head, "the dearth of anatomical information about postnatal anatomical changes continues to handicap understanding of the processes of that development." Moreover, Dr. Daniel Subtelny (D.D.S., M.S.) wrote in his 2000 book, Early Orthodontic Treatment, "Much information needs to be added to our understanding of early orthodontics... long term observations of early orthodontic treatments are needed with the fact that such treatment has not been routinely pursued."5

The need for earlier orthodontics and orthopedics is clear. The upper and lower jawbones form the gateway to the human airway. Both jawbones are about 80% developed by age 6 and over 90% developed by ages 10–12.6 Jaw treatments from birth to age 8 can set the stage for a lifetime of health benefits. Other conditions and treatments to come better than the protocols used today on older children after most jawbone growth has occurred. The formation of a new earlier diagnosis protocol, treatment protocol and standard is warranted.

Normal jaw growth and development depends upon many factors, including a good airway, diet, habits and growth. Early growth and development play an unquestionable role in normal jaw growth and development. Interestingly, airway, diet and habits are the first to develop and become the overall role in determining final abnormal jaw growth outcomes. Whole good jaws are important to having a good airway, a good airway is important to maintaining proper jaw growth and development, and in preventing jaw deformity. Defects pre- and postconception are well known to affect normal bone development. Almost half (50%) of jaw bone growth occurs before birth, especially in the maxilla. At birth, the tongue is also about 50% grown. The palate of a newborn is relatively short and high vaulted compared to the adult. As early as 1900, the palate of the average newborn was reported to be approximately 27 mm wide from ridge to ridge at the mid-palate.7 Other studies have shown at birth an average palate at birth is over 50% of an adult mid-palate width of 40–50 mm.

At birth, palates come in a number of different but rather specific shapes and sizes. The preferred palatal shape at birth could be called a "U" palate because it resembles a broad "U" shaped horseshoe. Substandard palate shapes such as the narrow palate, bubble palate, channel palate or high peaked palate would be non-preferred shapes. These "non-U" shaped palates commonly cause a number of problems. Non-U shaped palates can interfere with breastfeeding, which is needed for early jaw and fetal development. Non-U shaped palates can reduce nasal breathing space, which reduces healthful nasal breathing, promotes harmful mouth breathing and deforms jaws. Untreated non-U shaped palates can re-strict and prevent full growth and development of both the maxilla and mandible for life.

The forces of birth (contractions and forces) often produce undiagnosed asymmetrical maxillae and mandibles. Just as the forces of delivery are strong enough to produce a "cone-headed" infant, they can also alter the nasal septum, the maxilla and the mandible. Birth pressures have also been blamed as a major cause of nasal septum deformation10 and dental malocclusion.11

After birth, the maxilla and mandible must grow forward and position down and forward in order to attain full size during their 20-plus year growth cycle. It is essential to understand that the maxilla and mandible interact throughout life, especially during the early stages of development. The size and position of either jawbone can affect the other jawbone during growth and development, and continue to do so for life. If either jawbone is distorted — too small, too narrow, too large, too wide, too protruded or too retruded — abnormal jaw growth of both bones can be negatively affected. The earliest possible jaw treatment can have the greatest effect on jawbone growth. The type of early orthodontic treatment matters because treatment continues throughout life and will affect the other. For example, either a small maxilla or distal forces on a maxilla can distalize a mandible.

Abnormal substandard jaws can develop for many reasons. Jaw bones need a good start like other bones in the body. Maternal diet preconception, during gestation and after delivery can greatly influence proper jawbone development. It has been shown that a maternal lack of both Vitamin A and Vitamin B1 can cause fetal jawbone deforma-
mation. Malnutrition can alter normal maxilla growth so severely that a fetal cleft-palate forms. Too many vitamins can also deform bone. Food, drugs and smoking can also affect fetal jawbone growth, although we are in the early stages of understanding their full impact. Tonsils and mouth breathing most likely promote abnormal jaw development often seen as a skeletal open bite. Lack of breastfeeding, use of pacifiers and botules, and the very associated finger sucking habits also can deform jaws, especially the maxilla.

Abnormal maxilla shape can promote continuous abnormal upper and lower jaw growth. When the palatal shelves join in utero but do not fall and flatten, they can remain high and obstruct the nasal space. Small, high vaulted, "peaked" and "doub-le-peaked" palates promote jaw deforming mouth breathing as they restrict volume of the nasal space. It is well documented that mouth breathing promotes upper and lower jaw deformation and malocclusion. Since mandible growth depends to a great degree upon normal maxilla growth, achieving early normal maxilla shape should be a priority. When abnormal growth and underdevelopment is unabated, the maxilla often takes on a "V" palate shape, which is quite different from the preferred "U" palate. Functional mechanisms of occlusion devens that a "V" palate restricts the mandible to a greater degree than a "U" palate.

Upper and lower jaw growth can best be guided with early appliance instead of extractions for most patients. The past few decades saw a back and forth swing in orthodontics from extraction to non-extraction techniques. Just a few decades ago, over 70% of teenage orthodontic patients had numerous teeth removed in order to align crowded dental arches. Now less than 25% have the need for such extensive extractions because of dental arch and jaw development techniques. Serial extractions, a form of guided dental arch collapse, have declined dramatically. Phased orthodontic treatments have increased and so have the end-sizes of dental arches and related airways. Guided jaw growth is becoming the norm for progressive practitioners, to the benefit of their patients.

Lifelong interceptive Functional Jaw Orthopedics (FJO) can help develop and maintain good airways, good jaw balance and changing dental occlusions. Multi-phase FJO treatments have contributed dramatically to the decline in extractions and re-duced overall lengths of treatment for many patients. Earlier application of FJO appliance...