“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 increase the likelihood of life-threatening disorders, for life. Jaw and airway related disorders like sleep apnea have recently moved to the forefront of medical attention, due to their serious threat to human health, longevity and quality of life.

Since the upper and lower jawbones and teeth 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 complementary orthopedic and orthodontic results while treatment at later ages increasingly produces less congenital and more orthodontic results.

This article will review some background and present some specific steps clinicians can take to provide earlier orthodontic and Functional Jaw Orthopedic (FJO) diagnosis and treatment. This article will show some early treatment techniques with patient outcomes that exhibit the unique relationship of earlier orthodontic and orthopedic treatment.

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 orthodontic examination, diagnosis and treatment involving the general dentist, pedodontist 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 and move dental care into a future world of medical dentistry that will include airway development, bed-wetting, ear disease, heart disease and longevity.

Early orthodontic treatment is very controversial, even among dentists. Just the definition of early orthodontics causes major conflicts of opinion. General dentists, pedodontists and orthodontists all have different early orthodontic treatment approaches and protocols. Likewise, they all also have different perspectives on the advantages, disadvantages, scope and outcomes of current early treatment, which generally begins in the mixed dentition stage before all adult teeth have erupted.

Some practitioners consider early orthodontic treatment to be inefficient although they increasingly admit it is effective. The current inefficiencies are most likely due to the general approach and protocol more than anything else. Additionally, a lack of understanding of the potential lifelong benefits of earlier orthodontic and orthopedic treatment also suppresses acceptance of earlier multi-phase therapy.

The main goal of all early orthodontic and treatment protocols should always be to provide the highest quality health service to each individual patient. Cost, convenience and efficiency are factors to consider in any health treatment. However, optimal treatment outcomes (good balanced jaws, open airways and stable occlusion) must remain the predominant priority. Early treatment, when indicated, achieves some results that later treatment often cannot. For example, it has been shown that treatment of Class III malocclusion at age 5 results in orthopedic changes while treatment starting at age 9 yields mostly orthodontic tooth movement changes.

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 of growth and development may worsen and become unsightly late. An abnormal jaw. The dramatic difference in effectiveness, as well as long term overall efficiency are factors to consider in any health treatment. However, optimal treatment outcomes (good balanced jaws, open airways and stable occlusion) must remain the predominant priority. Early treatment, when indicated, achieves some results that later treatment often cannot. For example, it has been shown that treatment of Class III malocclusion at age 5 results in orthopedic changes while treatment starting at age 9 yields mostly orthodontic tooth movement changes.

A clubfoot is an abnormal condition of the foot, which is usually present and very visible at birth. 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 deformity grows 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 surgical outcomes vary. Clubfoot deformity will not usually improve on its own. Untreated, it will usually worsen and become unsightly and crippling. At birth, early clubfoot treatment is a medical priority.

Diagnosis of a clubfoot is much easier than diagnosis of an abnormal jaw. The dramatic difference in diagnostic capability results in a major difference in the timing of orthopedic treatment. Early foot exam can help identify clubfoot deformity at an early stage. However, a small, high, narrow, bubble or channel palatine is not as easily recognized or diagnosed. A severely underdeveloped and/or retruded mandible is rather different treatment timing in orthopedic treatment. Early foot exam can help identify clubfoot deformity at an early stage. However, a small, high, narrow, bubble or channel palatine is not as easily recognized or diagnosed. Conversely, an abnormal jawbone can be quite subtle in its irregularity.

Diagnosis of an abnormal jawbone is quite complex. A cleft palate is very visible at birth. However, a small, high, narrow, bubble or channel palatine is not as easily recognized or diagnosed. A severely underdeveloped and/or retruded mandible is rather different treatment timing in orthopedic treatment. Early foot exam can help identify clubfoot deformity at an early stage. However, a small, high, narrow, bubble or channel palatine is not as easily recognized or diagnosed. Conversely, an abnormal jawbone can be quite subtle in its irregularity.
Discharged by the untrained eye. As a result, early upper and lower jaw active treatment protocols often appear unimportant and the true medical need goes unrealized.

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

Avoid in early jaw healthcare, “real” early orthodontic and orthopedic diagnosis and treatment are not performed. Health professionals in general lack the training and ability to recognize deformities in 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 diagnosisa gap and the indispensable need for earlier diagnostic treatment. Orthodontic jaw treatments from birth to age 8 will likely become a health priority once the diagnostic and treatment protocols are better defined and the health 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. J. Daniel Subtelny (D.D.S., M.S.) wrote in his 2006 book, Early Orthodontic Treatment, “Much information needs to be added to our understanding of the reasons for and effects of early orthodontics... long term observations of early orthodontic treatment are lacking, consistent with the fact that such treatment has not been routinely pursued.”

The need for earlier orthodontics and orthopedics is clear. The upper and lower jaw bones form the gateway to the human airway. Both jawbones are about 80% developed by age 6 and over 90% developed by ages 10–12. Jaw treatments from birth to age 8 can establish a plan for future health outcomes that becomes better than the protocols used today on older children after maxillary 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 genetics. Genes play an unquestionable role in normal jaw growth and development. Interestingly, airway, diet and tooth extraction are factors that cause treatment failures in the overall role in determining final abnormal jaw growth outcomes. While 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. Both the 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 1960, the palate of the average newborn was recorded to be approximately 27 mm wide from ridge to ridge at the mid-palate. Other reports confirm the 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. 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, high 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 restrict 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 “concealed” in utero palate, they can also alter the nasal septum, the maxilla and the mandible. Birth pressures have historically been blamed as a major cause of nasal septum deformity and dental malocclusion.

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 retracted — normal 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 during gestation and after delivery it greatly influences proper jawbone development. For example, either a small maxilla or distal forces on a maxilla can distort a mandible.

Abnormal jaw growth can be distinct and has been recorded for both the maxilla and the mandible at birth. A clifft-palate is commonly diagnosed when present at birth. A severely retruded (retrogнатic) mandible is the common abnormal feature of the mandible recorded at birth because it signals a high risk for a blocked airway, breathing difficulties and even sudden infant death. Less distinctive substandard upper and lower jaws are harder to recognize and diagnose.

Abnormal jaw growth 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 B can cause fetal jawbone deformation. 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 jawbone growth, although we are in the early stages of understanding their full impact. Tonsils and mouth breathing greatly contribute to abnormal jaw development often seen as a skeletal open bite. Lack of breathing space, use of pacifiers and bottles, 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 full and flatten, they can remain high and obstruct the nasal space. Small, high vaulted, “peaked” and “double-peeked” 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 development continues 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 ap- pliances instead of extractions for most patients. The past few decades saw a back and forth swing in orthodontics from extraction to non-extraction tech- niques. Just a few decades ago, over 70% of teenage orthodontic patients had numerous teeth re- moved 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 tech- niques. 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 Func- tional 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 treat- ment for many patients. Earlier application of FJO appliance...