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 many medical research journals.

Since the upper and lower jawbones form the gateway to the human airway, earlier orthodontic and orthopedic jaw treatments are needed to help more small jaws and airways reach their full growth potential. Although chronological growth of the jaws needs to be understood, it seems clear that earlier treatments cause complementary orthodontic and orthopedic results while treatment at later ages increasingly produces less orthodontic and more orthopedic 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 earlier treatment techniques with patient outcomes that exhibit the very unique results 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 move dental care into a future world of medical dentistry that will include the airway, breathing, bed-wetting, ear disease, heart disease and longevity.

Early orthodontic treatment is a very controversial, even among dentists. Just the definition of early orthodontics can cause 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 perceived inefficiency is 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 diagnosis 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, optimally timed 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 orthodontic changes while treatment starting at age 9 yields mostly orthodontic tooth movement changes.

A review of current clubfoot pediatric orthopedic protocols 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 growth patterns, but rather different treatment timing approaches. Today, clubfoot bones are routinely examined, diagnosed and treated beginning at birth. Conversely, standard maxilla and mandible jawbones are not routinely examined, diagnosed and treated until after 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. 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 is not known. 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 outcomes vary. A 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 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.

Diagnosis of an abnormal jawbone is quite complex. A cleft palate is very visible at birth. However, a small, high, narrow, bubble or channel palate is not as easily recognized or diagnosed. A severely undeveloped and/or retracted mandible is rather visible at birth. However a small, short or moderately undeveloped mandible is not as easily recognized or diagnosed. Consequently, diagnosis of a substandard maxilla or mandible is not as easily recognized and treated and the need for treatment can be
disallowed by the untrained eye. As a result, early upper and lower jaw active treatment protocols often appear incorrect and 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 fields currently associated with birth and delivery lack orthopedic jaw diagnostic and therapy training.

A void in early jaw healthcare, “real” early orthodontic and orthopedic diagnosis and treatment is widespread. Health professionals in general lack the training and ability to recognize abnormal jaw growth outcomes. 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 diagnostics gap and the indisputable need for earlier diagnostic training.

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 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. Bosna (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, the processes of that development." Moreover, Dr. J. Daniel Subtelny (D.D.S., M.S.) wrote in his 2000 book, Early Orthodontic Treatment, "Much information is needed to be added to our understanding of early orthodontics... long term observations of early orthodontic treatments are lacking, and management needs to be decided that such treatment has not been routinely pursued."

The need for earlier orthodontics and orthopedics is clear. For example, 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.

Jaw treatments from birth to age 8 can stop abnormal jawgrowth outcomes 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. These factors play an unquestionable role in normal jaw growth and development. Interestingly, airway, diet and changing dental occlusions are the greatest 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. Most orthodontic protocols 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 described to be approximately 27 mm wide from ridge to ridge at the mid-palate.

Other conditions, such as cleft palate, where 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 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 "cone-headed" infant, they can also alter the nasal septum, the maxilla and the mandible. Birth pressures have been blamed as a major cause of nasal septum deformaition and dental malocclusion. Abnormal maxilla shape can commonly diagnosed when present at birth. A severely retruded (retratonic) 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 standard upper and lower jaws are harder to recognize and diagnose.

Abnormal jaw growth can be distinct and has been recorded for both the maxilla and the mandible at birth. A cleft-palate is commonly diagnosed when present at birth. A severely retruded (retratonic) 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 standard upper and lower jaws are harder to recognize and diagnose.

Abnormal substandard jaws can develop for many reasons. Jaw bones need a good start because early orthodontic treatment matters because early diagnosis is relatively nonexistent for most children.

Malnutrition can alter jawbone growth, although we 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 firmly promote abnormal jaw development often seen as a skeletal open bite. Lack of breastfeeding, use of pacifiers and bottle, 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, palate, bubble-like "peaked" and "double-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 deforming 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 change continues unabated, the maxilla often takes on a "V" palate shape, which is quite different from the preferred "U" palate.

Mechanics of occlusion deems 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 appliances 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 reduced overall lengths of treatment for many patients. Earlier application of FJO appliance