treatment phases can benefit the patient dramatically. Earlier FJO treatments can better guide jaw growth, reduce aggregate treatment times and increase beneficial treatment results. It is notable that while just a few years ago many believed jaw growth could not be stimulated with appliances, newer research has shown it to be very possible.

To apply new earlier FJO orthodontic and orthopedic principles requires five key steps.

Step #1 Recommend preconception and prebirth nutrition counseling. This is the first step in the new era of early preventive orthodontics. A few cultures worldwide encourage mothers to go on special nutritional diets for months before conception, not just afterward, in order to increase the chances for a healthy full-term baby. This action makes good nutritional sense. Our modern society emphasizes good nutrition, vitamins and avoidance of drugs, smoking and alcohol after conception, but it does not promote the vital need to have a nutritionally healthy mother before conception. Simple Vitamin A or B deficiency has been shown to cause bone deformities and even cleft palates.13 FJO dentists should encourage patients who want children to consult with a nutritionist before conception in order to promote optimum fetal growth and development.

Step #2 Recommend “exclusive” breastfeeding (no concurrent pacifier or bottle use) for 5-6 months (6-12 months—total) and recommend lactation consultant counseling before delivery. This is the next step in early preventive orthodontics. Breastfeeding after birth, true sucking, is usually better for infant jaw growth and development as well as overall lifelong health. More women are learning about the many health benefits of breastfeeding and choosing to breastfeed for longer periods of time than just a few decades ago. Some women still choose not to breastfeed at all for various reasons including lack of convenience and ignorance of the many health benefits to the infant and mother. FJO dentists should encourage new parents to be consulted with a breastfeeding consultant before delivery because many hurdles exist to successful exclusive breastfeeding.

Breastfeeding places bene-ficial orthopedic forces on the jaws, similar to the forces of FJO, the newest form of orthodontics. Breastfeeding affects orofacial anatomy and physiology at our respirators system gateway during the most important craniofacial formative years. Breastfeeding can orthopedically jump start proper jaw growth and have positive lifelong health affects. FJO dentists should recommend exclusive breastfeeding for a minimum of 3-6 months and total breastfeeding for a minimum of 6-12 months.

Breastfeeding is early pre-ventive orthodontics and orthop edics because sucking forces impact the jaws during a caput period of postnatal growth. Postnatal growth is strongest in the first year of life so positive forces are important to proper growth and development. By 12 months of age, unimpeded, the maxilla increases markedly in size, and the anterior part of the mandible that contains the baby teeth (deciduous dentition) more or less attains its adult size.14 Rhymic elevation and lowering of the jaw provides sequential changes in tongue positions coordinated with sucking contractions to stimulate growth.15 The forces of sucking actively act on the jaws like orthopedic appliances to induce forward and lateral jaw growth and early airflow on growth.15

Breast sucking aids proper development of the jaws, which form the gateway to the human airway. It also cultivates positive down and forward growing forces required by both upper and lower jaws. Sucking forces act to spread and widen dental arches and promotes good swallow muscle tone, which aids proper jaw and airway growth. Research shows children breast-

fed about one year rarely develop dummy or finger sucking habits.16 Bottle, pacifier and digit sucking create backward destructive forces on lower jaw and lower arches. Pacifier sucking magnifies negative jaw forces because the pacifier is often sucked more extensively and with more force than a bottle. Sucking forces generally act to constrict and form narrow dental arches out of soft moldable cartilaginous bone. Sucking promotes poor swallow muscle tone in infants, which interfere with proper jaw and airway growth. Essentially, sucking forces during the first post-natal growth period block the full genetic growth potential.

Breast-fed babies (suckled infants) are less likely to develop malocclusion-high pre-maxilla, abnormal alveolar ridges and palate, and posterior cross-bite.17 They are less likely to develop allergies.18 Breast-fed infants are much less likely to be overweight.17,18 a major risk factor for diabetes, kidney and heart disease. They are much less likely to develop ear infections,20 insulin-dependent diabetes,21 respiratory infections,22 gastrointestinal infections, diarrhea,23 and lymphomas (type of childhood cancer).24 Breast-fed babies are also less likely to be hospitalized for serious illnesses,25 less likely to die of SIDS,26 and generally have higher IQs.27,28

Bottle-fed babies (suckling infants) are more likely to develop malocclusion.29 Sucking habits (bottle, pacifier and dugs) result in narrower upper and lower dental arches. Sucking infants often have decreased upper and increased lower inter-canine arch width along with a high prevalence of posterior cross-bite.29 A strong association has been found between exclusive bottle-feeding and malocclusion.30 Non-breast-sucking habits such as finger sucking are strongly associated with crooked teeth and/or jaws (malocclusion).30 Most bottle-fed infants are sicker in general than successfully breast-fed infants. They are sicker as infants and often for a lifetime. The added health-care costs for four of the many medical illnesses that result from not breastfeeding was recently estimated to be over $1 billion per year.31

Step #3 Recommend at or near-birth is the manipulation of an abnormal naso-septal and maxillary birth trauma can cause nasal obstruction and lead to mouth breathing and the developing of facial and occlusal abnormalities.32 The palate shape at birth may be used to predict the need for earlier orthodontic treatment, which indeed includes early palatal manipulation at birth. Manipulation can realign deformed septums and reduce infant symptoms of “snuffy” nose, poor eating, delayed eruption of permanent teeth and blocked naso-lacrimal ducts. Manipulation of the infant skull can hasten normalization of misaligned skull bones. Palatal manipulation can reduce malocclusion. FJO dentists, until so trained, should recommend pregnant women seek a prenatal therapist with knowledge of infant palatal manipulation techniques that may even want to have such a therapist present during delivery.

Step #4 Recommend early composite bonding to correct malocclusion. The FJO dentist can use early composite bonding to treat closed, crooked or crossed bites, as early as 2-3 years of age. About 1.2 mm added to the primary second molar, and about 2-3 mm added to the primary first molar will usually open the closed bite in the anterior area about 2-4 mm. This allows the mandible to translate forward 1-2 mm. If the mandible is trapped in a deep Class II Division 2 malocclusion, then a removable maxillary appliance or utility arch can be added to increase space for the mandible to translate forward.

Bonding can be used to balance and reduce ear disease. Vertical dimension bonding has been shown to reduce or eliminate ear disease in children. Research shows deep bites increase the chance for chronic ear disease in children. Dentists have the ability to reduce or eliminate a great deal of costly and adult ear disease without drugs or surgery. Serial bonding can be used progressively to act as braces without braces. This “fixed” form of early orthodontic treatment allows FJO dentists to successfully correct small problems before they grow larger. Composite bonding can also be used to ‘bake on’ or repair bonded composites or stainless steel crowns for serial bonding. Composites can rather simply be re-bonded over and over if necessary.

Pedodontic crown lengthening, bonding to open molar vertical space can help with a jaw orthopedic technique, which can be used to allow adult 6-year molars to erupt instead of erupting into the dental arches. Short clinical crowns are a sign of obstructed or incomplete ver tical growth. It is possible to use composite bonding during the eruption of permanent first