

The Sarkissian Report

Pediatric Edition

Bite Opening in Children

Eighty percent of the jaws of a child develop before the age of 10. Modern trends in jaw and tooth development show that the jaws are not developing to their fullest potential during these critical early years. Basically, the genes we have for large jaws are not being properly expressed. Here I will discuss the terrible consequences as it relates to dental and general health.

First, an analogy.

Consider the room in the mouth as an actual room. The oral cavity of a child with a small jaw size (and consequently no spaces between baby teeth) can be compared to a small room where you find it hard to fit in or move around.

The oral cavity of a child, on the other hand, with worn down teeth and a deep bite can be compared to a room with a low ceiling. You can't even walk in it upright.

Who are we talking about? The tongue!! The tongue grows to its genetically determined full size regardless of how much space is allowed within the oral cavity. Its functions, besides tasting, include phonetics (speech pronunciation), swallowing, and indirectly, keeping the airway open.

Place the tongue in a room with smaller dimensions (constricted jaw), OR a low ceiling (deep bite), OR both, it will not fit comfortably and cause serious long-term consequences.

Here is a list of these consequences as it relates to each of the tongue's functions.

1. **Phonetics:** The development of proper speech is related to tongue position and proper positioning.
2. **Swallowing:** The tongue thrusts forward with every swallowing and creates a space between the teeth.
3. **Airway:** a blocked airway will result due to the tongue falling back and obstructing the already narrow airway in the back of the throat, creating CHILDHOOD SLEEP APNEA (see Page 3).

This dental newsletter special edition is intended for pediatricians as well as parents to make them aware of certain details concerning children's dental care and development that are commonly missed and neglected. Please enjoy.



Dr. Joseph Sarkissian

Arch Development

Small jaws are the main culprit for future tooth crowding, TMJ problems, flat facial profiles, snoring and sleep apnea. In traditional orthodontics, sound teeth are commonly extracted to allow all the teeth to fit. This creates even smaller jaws and paves the way for future jaw problems and/or severe sleep apnea. Early intervention in arch development with removable appliances is a European approach that utilizes the maximum growth potential between the ages 6 and 12. We believe it is common sense to use this approach which creates much better facial profiles and shortens the time, if not completely eliminating the need, for braces.



Early Childhood Caries - "Bottle Decay"

Early Childhood Caries (ECC) is the name given to the severe decay that sets in baby teeth at a very early age. Previously known as "bottle decay", it is caused by bacterial colonies of streptococcus mutans covering the teeth, known as plaque. They process sugars coming into contact with them and produce acid as a by-product, which in turn will cause enamel to become softer and porous. These white chalky lesions will then progress into the more advanced decay seen in rotting teeth, especially in upper incisors of children between the ages of 2 and 4.

It is frequently associated with babies sucking on their formula milk bottle in bed and going to sleep with it, thus creating an environment for the decay-causing bacteria to thrive on the

pooled and fermenting milk on the surface of their teeth. There seem to be other aggravating factors, such as heredity and mutating bacteria.



Proper diet, oral hygiene, Xylitol gel, and proactive dentistry can be used to prevent or slow down this condition.

Knocked-out Teeth

If your child falls and knocks out a tooth, do not panic. Find the tooth, pick it up carefully from the crown (not the root), rinse without rubbing the root, and preserve it in a saline solution such as Save-a-tooth®, contact lens solution or any eye-drop solution. Saliva can be used, milk is not recommended any more. Wrap it up carefully so it does not dry up. Take the child to a dentist as soon as possible. The tooth may actually be re-implanted and splinted for a few weeks. Giving homeopathic Traumeel or Arnica every half hour will help.

For **children 8 and older** these teeth have to be preserved and reinserted at all costs, due to the fact that definite restoration of the lost teeth cannot happen until the age of 18 and attempts for providing interim and final restorations for these teeth are ongoing and very expensive.



Foods Causing Tooth-Decay

Never let your baby fall asleep with a bottle in the mouth. Avoid repeated nighttime nursing. Milk and many other liquids will pool around the teeth and cause them to decay.

Children naturally have an instinct for eating simple, nutritious and vital foods which also naturally clean the teeth. However, soon they are exposed to decay-causing, processed foods which have no vitality. Unhealthy snacks replace the nutritious meal. Today it is impossible to ban the child from sweetened foods, but starting at an early age preventive dentistry, flossing and using xylitol gel will avoid aggressive cavities.

Jaw development and nursing

In nursing infants, it is well known that bottle feeding contributes to a smaller jaw size, future tooth crowding, and airway problems. In breastfeeding, less force is needed than sucking on a bottle. The forces in bottle-sucking draw the cheeks in and cause an "implosion" of the oropharynx, thus shrinking the airway. (Woolridge, M. The "anatomy" of infant sucking. Midwifery 1986; 2:164-71)

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One-sided Crossbite in Children

The one-sided (unilateral) crossbite in children, is a condition that should be immediately addressed as early as possible. As a rule, the upper teeth should overlap the lower. When, however, the upper jaw does not develop properly, the upper arch holding the teeth will be smaller than normal. The lower teeth will not fit under the upper in the usual manner. In order to do so, the jaw, in an attempt to cause the maximum number of teeth to come together, will shift the jaw slightly to one side, causing a one-sided crossbite, in which only on one side the lower teeth are brought to overlap the upper teeth. This



condition should be addressed immediately, as the consequences are as follows:

- Results in asymmetrical growth of the lower jaw, and thus the face.

Childhood Sleep Apnea

Ironically, the signs of sleep apnea, to look for in children, are quite different than those in adults.

1. increased hyperactivity with an inability to concentrate during the day,
2. grinding of teeth at night
3. dark circles under the eyes
4. bedwetting
5. frequent earaches.

If a child exhibits some of the above-mentioned signs, grinds and snores, has enlarged tonsils and adenoids, has a small jaw size, or a jaw that has stayed behind, a deep bite, crowded teeth, chronic congestion, worn down lower incisors, he/she most probably suffers from **childhood sleep apnea**. In this condition, a child fails to achieve deep sleep during which the body produces important hormones for GROWTH AND HEALING.

The treatment of childhood sleep apnea has to be coordinated between the pediatrician, the Ear-Nose-Throat specialist, and the dentist.

- Restricts the growth of the upper jaw.
- Increases the risk for jaw-joint (TMJ) problems in the future
- Causes insufficient space for the tongue, resulting in an increased risk for childhood sleep apnea and lisping.
- Esthetically compromised appearance.

Parents, pediatricians, ENT specialists, and general physicians should be able to spot this condition and refer to a dentist or orthodontist who has experience in functional jaw orthopedics or appliance therapy. Treatment can be initiated as early as age 5, and involves a simple removable appliance that encourages growth of the upper jawbone (maxilla).



1. Tonsils and adenoids have to be evaluated, and possibly removed.
2. Allergies have to be eliminated by diet modification, and preferably homeopathic remedies.
3. For ages 4-6, a dental bite opening procedure is the first step we take.
4. For ages 6 and above, jaw orthopedics will develop the dental arches, reposition the jaws and improve the airway.

When a baby tooth is lost, the space has to be kept open. Bonded space maintainers such as this one look more esthetic and do not irritate the gums, contrary to those with metal bands or stainless steel crowns.



Bite Opening Procedure

A bite key is constructed to fit behind the top incisor teeth. This is adjusted to create the desired vertical space between the back lower baby molars (two on each side). Their fissures are cleaned out (to prevent future cavities), they are then primed and bonded with composite. Before the composite is cured, the child is instructed to bite into the upper key to mold the still soft composite into the correct shape and vertical dimension. After all composites are placed, they are adjusted and polished. These children adapt surprisingly fast to their new bite and by the time these baby teeth are lost, the jawbone and the permanent molars coming in behind them will have grown to consolidate that position.



Tooth Grinding in Children

Many parents notice that their children grind their teeth at night, maybe even during the day. If you notice a pronounced wear pattern on their baby teeth, it may mean trouble, and would justify a dental visit, preferably someone who is familiar with functional jaw orthopedics.

Reasons for tooth grinding in children are not so much stress related, rather than manifestations of a deficiency in oxygen during sleep. It has been determined that a child who experiences mild to moderate sleep apnea at night will tend to grind, due to the brain sending alarm impulses to the jaw muscles.

The Frenum

The tight ligament that attaches the upper lip to the gums is called the *labial frenum*. The one attaching the tongue to the base of the mouth is the *lingual frenum*.

A tight **labial frenum** can cause spaces between permanent teeth, future gum recession, and an open mouth posture.

The **lingual frenum** should allow free movement

of the tongue, particularly in its role in swallowing, speech, and tooth and jaw development.

A child with a tight lingual frenum is also called "*tongue tied*". These children have jaw growth discrepancies, swallowing dysfunctions and usually have a lisp.

Treatment:

Surgically releasing the frenum is called *frenectomy*. Conventional treatment involved a procedure where the frenum was cut with a blade or scissors, with or without sutures to reposition its attachment.



Today, and in our office, we employ a procedure called "**laser frenectomy**" in which the *Waterlase* is used to zap the frenum with laser pulses without even touching it, gently severing it from its attachment. A few drops of anesthetic makes the area numb enough so even a 6-year old can tolerate it. Healing time is reduced drastically. The actual procedure takes 3-5 minutes, and full healing with new skin is evident within 10 days. The new frenum attachment is at least 5 mm higher up, clearing the gums and releasing the tongue or the lip respectively.

Dentistry and Pregnancy

- A study by a New York University dental research team has discovered evidence that pregnant women with periodontal (gum) disease are more likely to develop gestational diabetes mellitus than pregnant women with healthy gums.
- Mercury from a mother's filling will accumulate in the placenta of a pregnant woman and therefore in the fetus.
- The amount of mercury found in aborted fetuses was shown to be directly correlated to the number of mercury fillings in the mother.
- Female dental assistants have been found to have a higher rate of miscarriages and infertility.
- Pregnant women with periodontal disease show a 4X higher rate of preterm deliveries.