

# What about thumb sucking?



by **Christine Stevens Mills, BS, COM**

Earlier this year, I had the privilege to speak to a group of dental hygiene students. They were very enthusiastic to expand their knowledge in the area of orofacial myofunctional disorders. After being asked a volume of interesting questions regarding “thumb-sucking habits,” the students inspired me to write this article. Typically, a dental hygienist does not receive in-depth diagnostic information regarding thumb-sucking habits and the contributing complications.

Two questions have been repeatedly asked, and are still frequently asked today: “Does thumb sucking interfere with dental development and create malocclusions?” “Does this child need to stop thumb/finger sucking?”

The answer seems to be different depending on the professional you ask. Some pediatricians advise, “Leave the thumb suckers alone. They will outgrow the pattern.” Progressive pediatricians understand that chronic thumb/finger sucking needs to be addressed in most children. Many dentists are satisfied to wait until the child is ready to see the orthodontist. They then let the orthodontist deal with the sucking habit. Those dentists interested in prevention may want thumb sucking to cease early so that the normal processes of orofacial growth and development are not disrupted. Most orthodontists feel it is crucial to deal with the thumb/finger sucking habit by the time that the adult incisors begin to erupt in order to prevent malocclusions from developing.

If a thumb or finger exerts a force for hours per day against the anterior teeth, positional changes, usually tipping, of the teeth can occur. The most common changes to the dentition include the development of posterior crossbites, anterior excessive overjet, and anterior open bite. The direction of jaw growth may also be negatively affected. The constant pressure of the thumb or finger against the roof of the mouth can also contribute to the development of a narrow, high arched palate.

## **Thumb complications**

What other thumb complications are possible? Thumb sucking can lead to abnormal tongue rest and functional patterns, altered respiration, and an open rest posture of the lips. The thumb or finger can anchor the tongue down and forward instead of allowing the tongue to rest in the proper position on the roof of the mouth. Chronic thumb/finger sucking can cause skin or cuticle infections and/or calluses on the thumb/finger from the pressure being exerted.

The facial muscles utilized in chewing, swallowing, and speech constitute an important part of the foundation upon which speech is constructed. When the thumb anchors the tongue down and forward and serves to reinforce an incorrect rest posture of the tongue, an inaccurate and inappropriate spring-off point for speech sound production occurs.

Some sounds may be produced incorrectly. When the tongue is resting low and forward, the production of a frontal /t/d/n/l/, or interdental /s/ lisp may occur. When a sucking habit occurs in two or more settings, this defines the sucking behavior as a chronic habit. When this chronic behavior occurs in the school environment, children who suck tend to tune out what is happening around them and lose some ability to concentrate on school work. Sometimes reduction of peer acceptance and/or bullying may occur. And how many thumb/finger suckers do you know wash their hands before initiating the thumb/finger sucking action? This repetitive sucking behavior exposes them more frequently to germs.

Every professional may have an individual philosophy as to whether or not a thumb/finger sucking habit needs to be addressed. If the right questions are not asked, the chronic thumb/finger sucker slips through the cracks and is not helped ... or help comes too late with many complications.

## **Professional intervention**

Since dental hygienists routinely engage in assessments, screening, education, referrals, and treatment planning, they can appropriately incorporate the assessment of a chronic thumb/finger habit into their evaluation protocols. By virtue of training and opportunity, dental hygienists have the ability to positively influence these patients by evaluating and determining whether the thumb or finger sucking habit needs to be eliminated, and then provide the parent and child with specific information and guidance about the possible complications of the sucking habit.

## **Evaluation and treatment recommendation**

Understanding the what, when, where, why, and who of thumb/finger sucking should help the dental hygienist evaluate and determine if the thumb/finger sucking may require treatment. The following considerations are intended to provide a framework that dental hygienists can use in evaluating and counseling parents and patients about the consequences of sucking habit patterns:

- What, if any, changes are occurring in the dentition and supporting structures?
- When is the appropriate age that chronic thumb/finger sucking needs to be addressed?
- Where is the child sucking his/her thumb? (i.e., at home, at school ...)
- Why is the child sucking his/her thumb? Is it a habit or for emotional reasons?

- Who can help? It is helpful to know that qualified professionals are ready to treat thumb/finger sucking and how to locate these professionals when needed.

The American Dental Association and the American Academy of Pediatrics agree and believe that until the age of 6, thumb sucking usually does little or no damage to the dentition or the orofacial structure. After age 6, however, chronic thumb/finger sucking may begin to do damage and should be addressed.

A survey done by the Division of Health Examinations Statistics, “An assessment of the Occlusion of Children Ages 6 to 11 Years Old,” concluded that an estimated 2.4 million children suck a thumb/finger. Regarding the frequency of sucking, it was estimated that 60% suck “almost every day or night and 40% “just once in awhile.” In simple terms, half the children sucked almost every day or night, and about two out of five just once in awhile. It was also estimated that of these everyday, or night suckers, 79.4% produced an open bite and 56.6% produced an overjet dental malocclusion. The survey was initiated to assess the occlusion of children ages 6 to 11 years old. The examinations were conducted at 40 randomly selected locations in 25 states by dentists, psychologists, physicians, nurses, and technicians. Over 50% produced a malocclusion when thumb/finger sucking occurred every day or night.

It is important to note what the thumb/finger sucking habit compromises when it is a chronic problem. When the thumb/finger sucking persists, the normal dental equilibrium is disrupted. According to Proffit et al. (2007), “All clinical orthodontics is based on moving teeth by deliberately altering the force applied by the orthodontist to alter the previous equilibrium causing tooth movement” and “the duration of a force, because of the biologic response, is more important than its magnitude.” The timeline for duration to affect the dentition is estimated between four and eight hours. The perspective offered by Proffit et al. needs to be expanded when considering sucking habits since the negative pressures exerted against the posterior dentition by the cheek muscles during vigorous sucking add an intensity factor not involved in orthodontic treatment. Also, the frequency of the sucking involved whether daytime only, nighttime only, or both, becomes an additional and important consideration.

When the formula frequency + intensity + duration = negative dental and oral changes is applied to the concept of thumb sucking, and if there is a great deal of thumb/finger sucking daily and/or nightly, with a very strong sucking action, and this pattern continues for an extended length of time, changes to the dentition and disruption of dental equilibrium (i.e. causing instability of tooth position) and interference with the normal rest position of the mandible (the freeway space) will occur. The change in the rest posture of the mandible by opening the freeway space triggers continued eruption of posterior maxillary teeth while the anterior teeth are inhibited from erupting, or the incisors may become flared facially due to the continual presence of a thumb or finger.

The constant sucking behavior with the tongue remaining low and forward and the freeway space remaining opened for hours per day with a disruption of the dental equilibrium leads to many possible changes involving the orofacial structure, malocclusions, speech problems, and abnormal tongue patterns.

## **Providing guidance to patients**

As a guide for addressing sucking habits seen by a dental hygienist and to provide patients with knowledge and guidance, the following questions can be posed:

- Does this child need to stop thumb/finger sucking?
- Is there a developing malocclusion — open bite, excessive overjet, or crossbite present?
- Does this individual demonstrate a low forward rest posture of the tongue?
- Is there an open mouth rest posture of the lips?
- Are there evident speech problems (i.e., interdental /s/ lisp, /t/, /d/, /n/, and /l/ misarticulation)?
- Is there difficulty in carryover of speech patterns to the patient's conversational speech?
- Is there a narrow, high arched palate present?
- Is the thumb/finger sucking strong enough to cause calluses on the sucking digit?
- Is the child's sucking habit resulting in ridicule, harassment, or embarrassment in school?
- Is the child's thumb sucking in school affecting class participation or attention span?
- Has the child expressed interest in eliminating his/her thumb sucking habit?

If the answer to all, some, or a few questions is yes, then it is time for action. Discussing the complications with the parent and child and then providing them with information regarding treatment can be an important role for the dental hygienist to assume where the cessation of a sucking habit is indicated.

As we know, there is an expert for every part of the body. Why should the thumb be any different? Dental and orthodontic professionals specialize in maintaining oral health, and pediatricians specialize in the care and development of children and the prevention and treatment of children's diseases. However, most people have not heard about a professional who specializes in the treatment of thumb/finger sucking problems. This professional is called an orofacial myologist.

## **Orofacial myologists**

An orofacial myologist is a trained professional who diagnoses and provides treatment for orofacial myofunctional disorders (OMDs) such as abnormal tongue patterns, open mouth rest posture of the lips, low forward rest posture of the tongue, and sucking habits. The therapy is referred to as orofacial rest posture therapy. Before an orofacial myologist can begin treating any of these other OMDs, the thumb/finger sucking pattern has to first be eliminated or other therapy protocols will not be successful.

The IAOM (International Association of Orofacial Myology) is a professional organization devoted to educating, training, and verifying qualified orofacial myologists. Many dental hygienists are members of the IAOM and have achieved certification as orofacial myologists. If you are unaware of a qualified IAOM-certified therapist in your area, visit the Web site at [www.iaom.com](http://www.iaom.com), which will provide a list of nearby qualified therapists.

It is important to ascertain the what, when, where, and why of thumb sucking children to determine if elimination of the habit is needed. The next step is to identify the "who," the

professional with the expertise to treat patients with sucking habits by utilizing a concise, individualized, and positive approach to eliminate the sucking problem. For more information on thumb/finger sucking, visit [Two-ThumbsUp.com](http://Two-ThumbsUp.com).

The dental hygienist has an opportunity to participate in the evaluation of sucking habits in children. This important expanded role for the dental hygienist may include:

- The identification of sucking habits and those dental findings that may be linked to the habit
- Counseling and offering referral suggestions to the family
- The provision of other guidance that can benefit the overall health and well being of children with sucking habits.

*Christine Stevens Mills, BS, COM, is an IAOM board certified orofacial myologist and speech pathologist. She received a speech and hearing pathology degree in 1973 at Bowling Green State University, Ohio. Upon completion of this degree she became interested in the emerging field of myofunctional therapy. She opened a practice in Michigan to treat children and adults with abnormal tongue patterns and associated open mouth rest posture of the lips. Christine was also committee chairman for licensure of myofunctional therapy in Michigan. She has been in private practice for over 35 years and assistant professor at the University of Detroit Mercy Dental School Orthodontic Department since 2000.*

#### **References**

- Proffit WR. Contemporary Orthodontics Fourth Edition. Elsevier, Health Sciences Education, Marketing.
  - Fisher, J.E.: Evidence-Based Psychotherapy. Springer, Reno, NV, 2006.
  - Van Norman RA. Helping the Thumb-Sucking Child. Published by Avery Publishing Group 1999.
  - National Center for Health Statistics, U.S. Public Health Service, The incidence of Dental Malocclusion in Children Ages 6-11 in the United States, 1965.
  - Schmitt, B.D.: Your Child's Health. Bantam Books Relay-Health NY, 2002.
-