

CHICAGO DENTAL SOCIETY REVIEW

DIFFERENTIAL DIAGNOSIS OF THUMB HABIT: SUCKING OR PROPPING?

A large number of the TMD patient population have several clinical findings in common: malocclusion, distal jaw position, head forward posture, low tongue position and abnormal swallow. The dental profession has a desire to successfully treat these abnormalities once they occur, but understanding the etiology and preventing these musculoskeletal problems before they happen would be more ideal. A clarification of this phenomenon may help to intercept and prevent some adult TMD.

Heretofore, the term "thumb sucking" has been a catch-all term, loosely referring to all forms of oral finger habits. Thumb sucking is, however, only one form of what should be conceptualized as thumb or finger habit. The purpose of this article is to identify two distinct forms of thumb habit, *sucking* and *propping*.

Sucking

Sucking implies suction. In order for a child to "suck" they must seal their lips around the thumb or other fingers and thus be able to breathe through their nose. Suckers are *nose* breathers.

The thumb is a nipple substitute in the same sense as the pacifier. It has been advertised that the Nuk pacifier is to be encouraged as a thumb substitute because it stimulates healthy palatal development. The thumb is not appreciably different from the Nuk, if in fact it is *sucked*.

One must look at what the child is doing with the thumb before conclusions are formulated and referrals or diagnoses are made. Sucking may cause dental problems, as anything done to excess might. Thumb sucking is not consistently deleterious in terms of dental consequences.

Propping

In thumb or finger propping, the child is a *mouth breather*. The thumb is in the mouth to prop it open and facilitate breathing. The lips are not sealed. The child is not sucking. The digit or digits are an orthopedic appliance, creating serious consequences in the developing dentition.

Propping results in the typical adult case with protrusive maxillary anterior teeth, narrow V-shaped upper arch, lingually tipped mandibular anterior teeth, low tongue position, abnormal swallow, wide lower arch, distal jaw position and forward head posture. This may, in fact, be the precursor of many Class II malocclusions and the basis for a good number of neuromuscular imbalances which are later seen as TMD patients. Obviously, not all craniomandibular

patients were thumb proppers, but early diagnostic recognition may permit early interposition of knowledge and skills to prevent later problems.

Habit Elimination

Stopping noxious habits is an age-old social problem confronting parents. Dentists often get involved when the habit persists beyond what the parents consider "reasonable." Sucking is the easier of the two habits to eliminate. Conventional behavior modification therapy seems to work very well. Propping is far more difficult to eliminate because the child with normal lip posture has a physiologic need for the thumb or fingers. They need to keep the prop in the mouth in order to breathe, especially when they are tired, and it becomes difficult for them to remember to keep the mouth open.

The prop cannot, in fact, be taken away unless the cause of the breathing problem is eliminated. Not all mouth breathers are proppers. It depends on the degree and timing of the nasal incompetence. It is the author's belief that when the nasal incompetence is great, the thumb can be a very ingenious, do-it-yourself sleep apnea device.

Recognizing the difference

Early differential diagnosis between propping and sucking is important. A good history will reveal some significant clues. When a mother relates that her infant cannot keep a pacifier in his or her mouth and keeps dropping it, this may be an alert that the infant is a mouth breather. In contrast, if she says that when she tries to remove the thumb at night, the suction is so strong that she feels considerable resistance, one can assume that the child is nose breathing.

When fingers other than the thumb are involved, check for malformations. Check the appearance of the fingers and thumb. When the child is propping fingers instead of the thumb, sometimes they can be as malformed from the orthopedic stresses as the dental arches are.

Are the digits chapped and fissured only over the fingerprint pads, or are they chapped and calloused all around? In propping, they are more likely to be chapped and fissured just on the pads. Does the child snore? Does the child get frequent earaches and/or ear infections?

Check the status of the tonsils. If the child is old enough to understand, have him close his mouth and inhale deep and fast through the nose. In cases of nasal obstruction, the nares will constrict. If the child is a nose breather, the nares will expand or flare. Ask them to demonstrate the habit. If the child says, "I don't *suck* my thumb," he or she may be telling the truth. They do not suck; they keep it in their mouth as a prop.

Unfortunately, the degree of nasal incompetence is difficult for the dentist to document and the cause of mouth breathing may not be something dentists can always treat. It is at these times, when referral is necessary to either an ENT specialist or a pediatrician, that dentists must be communications experts. Good referral letters are essential. The mother should also be fully schooled in the cause, effect and importance of this problem so she can also explain it to the physician. It is wrong to assume that physicians understand the significance of a dentist's findings. Physicians must be keyed into the dental paradigm, or the response might be that they chose to do nothing because the patient will "outgrow the condition."

Somehow children do outgrow the finger or thumb habit and often the nasal obstruction. At age 4, however, 60 percent of the facial growth is complete. By age 7, 70 percent of the facial growth is complete and by age 12, 90 percent of the cranial growth is complete.

Both structural and functional normalizations must be achieved to get ideal facial growth patterns. This is not always possible if the full growth potential is lost due to nasally obstructed breathing. Orthodontics can, of course, help to regain some growth but when the mouth breathing persists, it is in this group of patients that the greatest percentage of orthodontic relapses occur.

Early elimination of the cause of mouth breathing is important. The need for the prop must be eliminated to achieve optimal orofacial development. Once the distal jaw position, head forward posture and abnormal swallow develops, simply eliminating the cause of malocclusion does not self-correct the other problems.

It is gratifying to have the means to help adult TMD patients, but if the type of finger habit is identified early enough, successful intervention can prevent deleterious permanent change.