Section B

The Importance of Breastfeeding as it Relates to Total Health

Presented by:

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Habits and malocclusion

- Thumb sucking
- Finger sucking
- Lip sucking
- Arm sucking
- Pacifiers
Thumb sucking
B4 Thumb sucking fetus - learns how to suck / pacify.
EXCESSIVE digit sucking can set up abnormal forces on the oral cavity and surrounding structures.
This adult individual may have died from OSA. Note blockage of airway by soft palate and base of tongue. Also note retruded (pushed back) Class II mandible (chin). (Grant’s Atlas)

If this had been an illustration of an infant, he may have died from SIDS.

How a retruded chin blocks off airway behind the tongue
Intense thumb sucker.
B8 Retruded chin and elevated upper lip is a result of his lip sucking.
Thumb sucking created this open bite.
Thumb sucking created this tongue thrust.
Finger sucking
2-digit-sucker and hair twister.

B12
Position of fingers while she sucked.
B14   Finger sucking created this tongue thrust.
Finger sucking caused this open bite.
Lip sucking
Facial view of this lip sucker.
B18  Close up of child sucking on his lower lip.
Lip sucking caused this open bite.
Lip sucking caused this tongue thrust.

B20    Lip sucking caused this tongue thrust.
Arm sucking
Patient who was an arm sucker.
Scar on arm due to arm sucking long after habit stopped
B24 Malocclusion that resulted from arm sucking
She had to wear this palate expander to correct her malocclusion
B26  She needed orthodontics to correct her malocclusion.
Best part of treatment - Kansas University JayHawk retainer.
Final result - but it was expensive. Could have been natural.
Labbok / Hendershot article:

• **Principle finding** - the longer the duration of breastfeeding, the lower the incidence of malocclusion.

• Bottle feeding leads to a habit of forward tongue thrusting and a weakened development of the orbicularis muscles.

• There is a significant decrease in tongue thrusting with an increased duration of breastfeeding.

Pacifiers

• Positive association between pacifiers use and posterior cross bite and reduced upper arch width.

• Probable mechanism
  – Sucking activity in the cheeks
  – Reduced palatal support as the tongue takes a lower position

Ogaard B, Larsson E, Lindsten R. The effect of sucking habits, cohort, sex, intercanine arch widths, and breast or bottle feeding on posterior cross bite in Norwegian and Swedish 3-year-old children Am J Orthod Dentofac Orthop 1994;106:161-6
Healthy skull form

Prehistoric skull with wide palate and large posterior nasal aperture. There is also good width between the pterygoid plates. This allows for a wide beginning of the airway.
Unhealthy skull form

Skull from the 1940s demonstrating a high palate and narrow maxillary arch. Note small nasal aperture and less width between the pterygoid plates. This results in a narrow beginning of the airway - which creates a greater risk of airway collapse.
Ideal wide palate and nice “U” shaped arch of an adult that was breastfed.

Narrow “V” shaped maxillary arch and high palate of an adult that was bottle fed and was a thumb sucker.

B33
B34    Modern high palate and narrow arch
High palate and narrow “V” shaped arch of a thumb sucker.
Excessive sucking is what causes the damage.

Excessiveness =

Intensity + Frequency + Duration
Oral habits and primary dentition

• Conclusion: While continuous nonnutritive sucking habits of 48 months or longer produced the greatest changes in dental arch and occlusal characteristics, children with shorter sucking duration also had detectable differences from those with minimal habit duration.

• Implications: It may be prudent to revisit suggestions that sucking habits continued to as late as 5 to 8 years of age are of little concern.

Warren J et al. Effects of oral habits’ duration on dental characteristics in the primary dentition. JADA 2001(Dec);132:1685-93
Habits and malocclusion

- Dummy and digit sucking strongly associated with malocclusion.
- Malocclusions found in 35% of 3-year-olds
  - Anterior open bites in 27%
  - Unilateral cross bites in 8%

Habits and malocclusion

- Digit and dummy sucking resulted in increased tendency to tongue thrust.
- Tongue thrust related to: open bite, cross bite, overjet, Class II malocclusion.
- Sucking habits influence etiology of malocclusion.

Sucking habits and malocclusion

- Digit and dummy-sucking was the lowest among children who had good opportunity for breastfeeding.
- Significant relationship was found between sucking habits and malocclusion such as: Class II malocclusion, increased overjet, anterior open bite.

Bottle feeding and malocclusion

• There is a strong association (p=0.0006) between exclusive bottle-feeding and malocclusion.
• This mal-relationship does not diminish as the child grows from the primary to permanent dentition.

Impact of infant sucking habits

- Digit and dummy sucking resulted in increased tendency to tongue thrust.
- Tongue thrust related to: open bites, overjet, and Class II malocclusion.
- Sucking habits influence the etiology of malocclusion

Cup-feeding as an alternative

“Data support cup-feeding as an alternative to bottle-feeding for supplying supplements to breastfed infants. Administration times, amounts ingested, and infant physiologic stability do not differ with cup- or bottle-feeding.”


B43
The Basics of Swallowing

The importance of the “N” sound.

Test yourself!
Tip of tongue positioned behind upper front teeth during “N” sound.
Peristaltic motion of tongue across roof of mouth during swallow
Consequences of not having a correct swallowing pattern.
Infant tongue thrust and resultant anterior open bite. In this case the tongue thrust was due to a tight frenum.
Tongue thrust with resultant anterior open bite malocclusion.
Adult tongue thrust created anterior open bite.
Adult tongue thrust created anterior open bite and caused gingival recession.
Tongue thrust caused open bite malocclusion.
Adult tongue thrust created spaces and significant malocclusion.
B55  Post ortho open bite - 2 bicuspids removed.
Actual tongue thrust and open bite of study model case. An orthodontic failure because the tongue thrust was not addressed.
The case that started my research about 30 years ago. She is still a patient in my practice. Patient has a posterior bilateral tongue thrust.
Posterior open bite on right side due to a posterior tongue thrust.
Posterior open bite on left side due to a posterior tongue thrust.
AAPD Vision Statement - 1996

- “the advantages of breast-feeding from the standpoint of oral health are unknown at this time.”
- “the beneficial effects of breast-feeding on dento-facial growth has not been clearly demonstrated.”

AAPD Vision Statement - 1996

• “89% of youth, ages 12 - 17 years, have some occlusal disharmony.”

• “16% of youth have a severe handicapping malocclusion that requires mandatory treatment.”


B61
Pacifier use

- 75-85% of all children in western countries use pacifiers. Children weaned from breastfeeding early use a pacifier more often than those who are breastfed longer.

Craniofacial Development

- Largest increment occurs within the first 4 years of life.
- Is 90% complete by 12 years of age

Facial Form

Why breastfed babies have a better chance of being prettier than bottle-fed babies.
Facial form is the result of:

- Skeletal influence
- Development of the airway

Laurence Barsh. The Origin of Pharyngeal Obstruction during Sleep. Sleep and Breathing 1999, 3(1):17-21
Natural beauty has a divine proportion ratio of 1.618 / 1.0

Two-year-old breastfed infant with divine proportion of the face.

Same breastfed infant at age 3 years-4 months. Note nice facial form and lip contour / shape.

B67
Adult who was breastfed as a child. She would not touch a bottle or pacifier. A pretty proportional face.
Same adult with beautiful smile and teeth. Never had orthodontics (braces).

B69
Lip contour of 4 month old breastfed infant

Same infant at 4 1/2 years. Note natural lip line

B70
Note collapse of cheeks and bottle due to vacuum created during excessive sucking.
Aggressive thumb sucker at 4 months.

Lip contour and tongue position of same aggressive thumb sucker when thumb removed. (4 months)
Same patients at 4 1/2 years of age. Note lip contour and forward position of tongue at rest.
Same patient at age 7 years  Note long face and open mouth.
Open bite on same 7 year old. Note forward position of tongue.

Compromised oropharynx (throat) of same 7 year old.
Lip and Facial Contours

Infant exclusively breastfed

B76 Infant who has sucked on a foreign object excessively
Reasons for the collapse of the oral cavity and airway space:

- Improper feeding - artificial bottles and nipples.
- Noxious habits - pacifiers, excessive digit sucking, etc.
- Grossly enlarged tonsils and adenoids.
- Ankyloglossia / tongue-tie.
- Facial-skeletal growth abnormalities.
- CNS dysfunction affecting facial muscles.
- Drugs - refined sugars might be considered in this category.
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