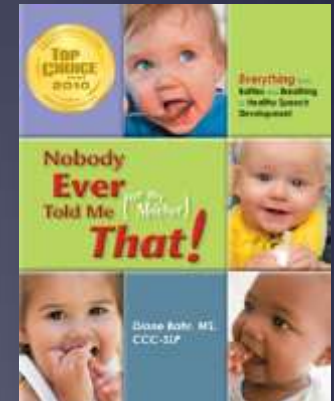


Keep Your Child's Feeding, Speech, and Mouth Development In Shape and On Track from Birth

Presenter: Diane Bahr, MS, CCC-SLP, CIMI

dibahr@cox.net

www.agesandstages.net



Speaker Disclosure:

Financial: Diane Bahr is the author of *Nobody Ever Told Me (or My Mother) That! Everything from Bottles and Breathing to Healthy Speech Development and Oral Motor Assessment and Treatment: Ages and Stages* for which she receives royalty payments. She is the co-owner of Ages and Stages,[®] LLC for which she is paid.

Nonfinancial: Diane Bahr is a volunteer board member for the Oral Motor Institute Study Group, a volunteer consultant for Future Horizons, Inc., a Founding Member of the Academy of Applied Myofunctional Sciences.

Learning Outcomes for Parents and Care-Providers

Topic: Feeding, Speech, and Mouth Development/Function

- Identify developmental milestones (birth to age 2-years)
- Track and encourage development
- Keep children *on track* beginning at birth
- Prevent problems



www.telegraph.co.uk

Good feeding + good mouth play = good mouth development
Good mouth development is needed for good speech development

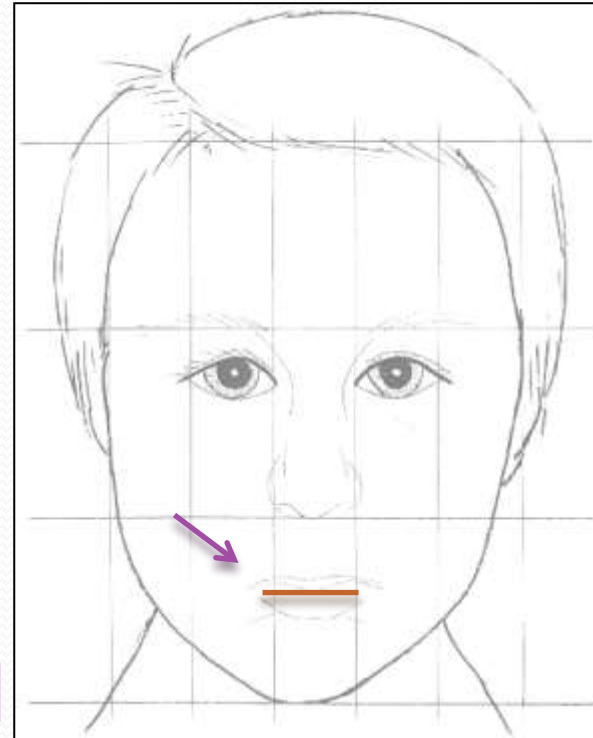
The Importance of Good Mouth Development (Bahr, 2010, p. 2)

- “Good mouth development is extremely important for the **health and well-being** of [a] baby. The mouth is not only the route to **good nutrition**, but it is an area through which [a] child will **gather information** about the world and ultimately learn to **express him- or herself** through speech.
- **Birth to 2 years of age** is a **critical learning period** for [the development of] mouth skills. This is the time when [a] child will develop the majority of his [or her] **eating and drinking skills** used throughout life. It is also the time when [a] child will **begin to speak**. Significant changes in [a] baby’s mouth structure and ... (function) occur at this time. These **structure and function changes** assist with the many **new mouth skills** [a] baby is learning” (p. 2).

Facial Characteristics Seen in Newborns, Children, and Adults (Bahr, 2010, pp. 277-282)



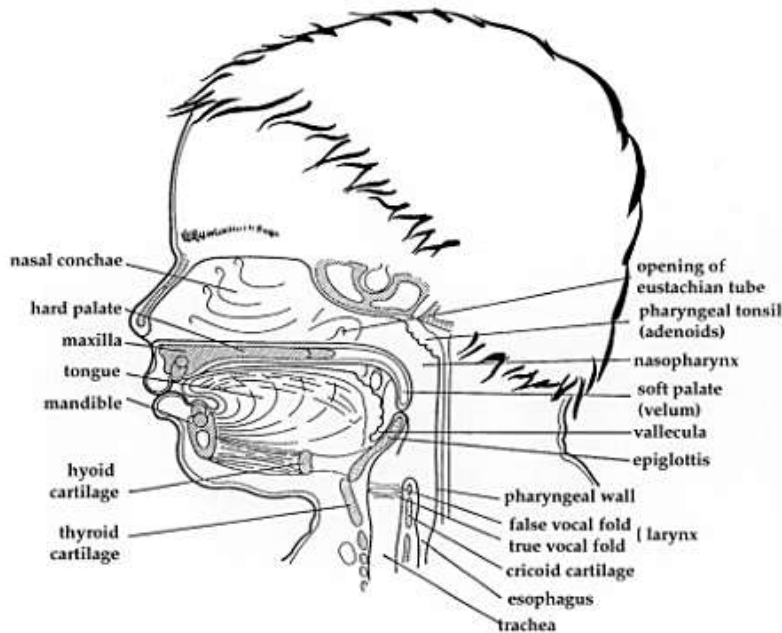
Photo: Reflections of Babies in the First Months, bornangels.com



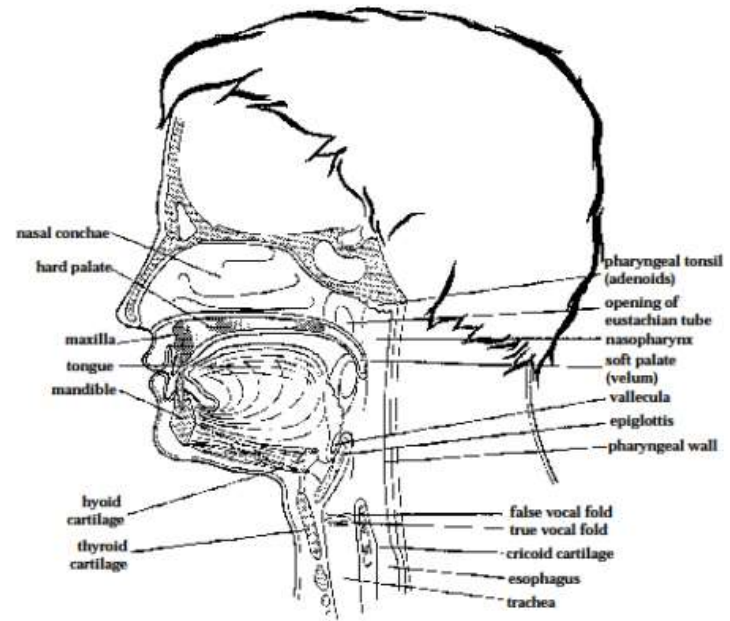
Drawing by
Artist
Anthony
Fotia, Sr.
(Bahr, 2010,
p. 278)

Full -Term Newborn Baby's Mouth and Throat vs. Adult's Mouth and Throat (Bahr, 2010, pp. 3-11)

THE MOUTH AND PHARYNX OF THE NEWBORN
(saggital section)

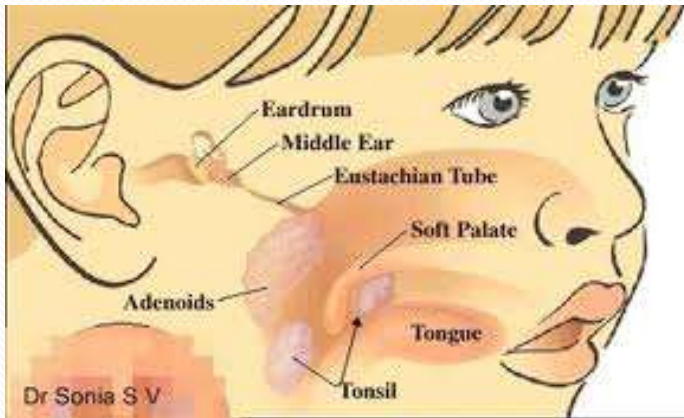


THE MOUTH AND PHARYNX OF THE ADULT
(saggital section)

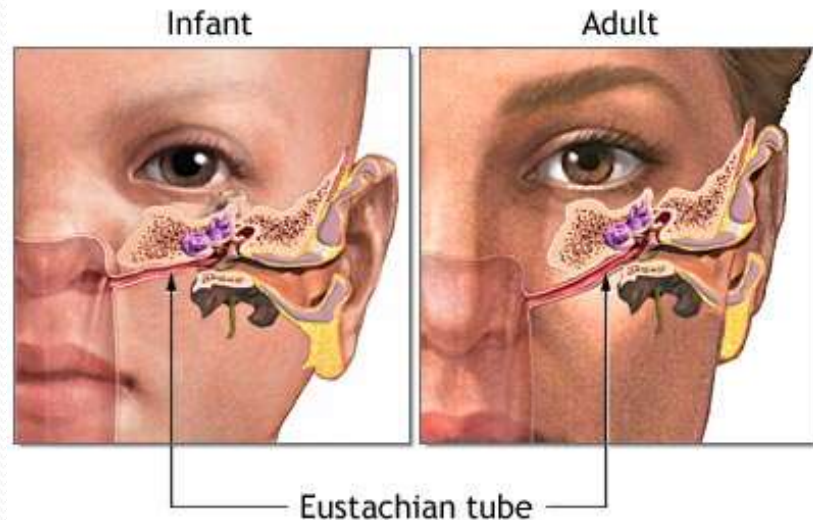


Drawings
by Artist:
Betsy True.
Originally
created for
Suzanne
Evans
Morris who
has granted
permission
for their
use.

The Location and Orientation of the Eustachian Tubes (Bahr, 2010, pp. 25-28)



Drawing: Adenoids – Dr. Sonia’s ENT
drsoniasv.webs.com



Drawing: Eustachian Tube
health.allrefer.com



Sucking Pads - Also Known As Buccal Fat or Cheek Pads? (Bahr, 2010, pp. 6, 9, & 10)



Photo: Noelle
www.kimschmidtphotography.com



Photo: Newborn Photography
www.laurenfitzgeraldphotography.com



Photo: Sweetest Baby Boy
www.brunilda.me



Photo: Buccinator
Functionalanatomyblog.com

The Lower Jaw (Mandible) is Not Fully Developed at Birth (Bahr, 2010, pp. 5 & 7)



Photo: Get to Know Postnatal Baby Checks! www.m3com.com.sa

Note: This baby has beautiful, typical newborn facial characteristics.

Significant Lower Jaw (Mandible) Growth Occurs in the First 6 Months



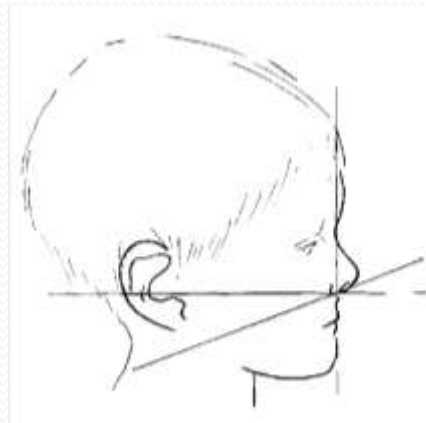
Photo: Anthony at birth



Photo: Anthony at 4 months

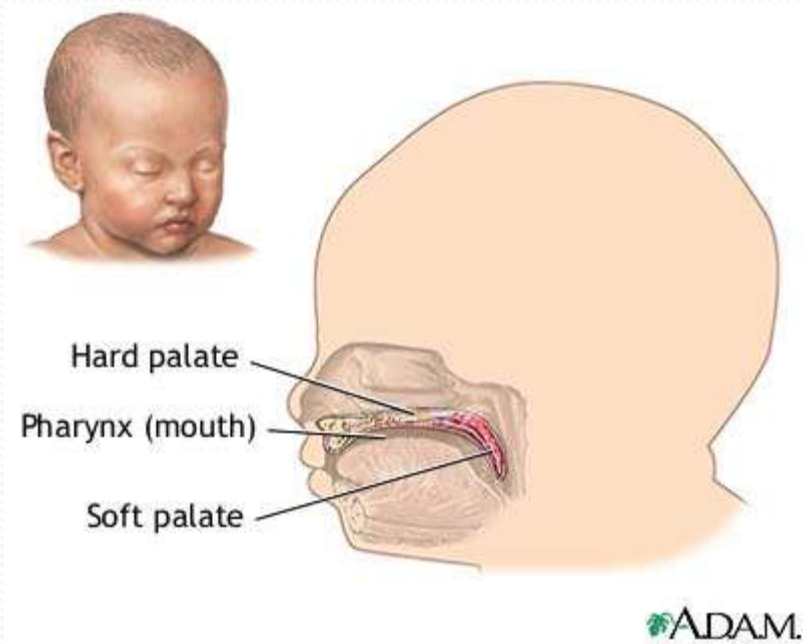


Photo: Anthony at 6 months

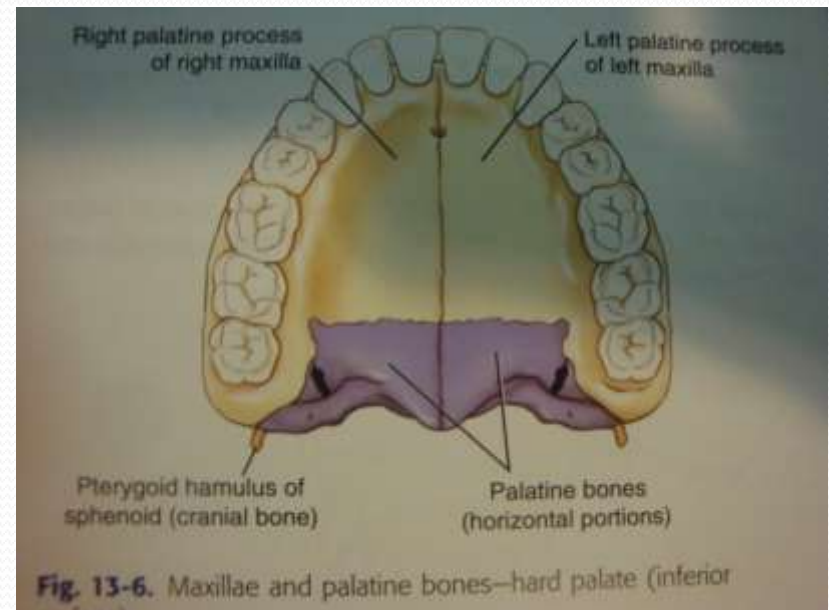


Drawing by
Artist
Anthony
Fotia, Sr.
(Bahr, 2010,
p. 279)

The Newborn's Palate or Roof of the Mouth (Bahr, 2010, pp. 5, 7, & 8)



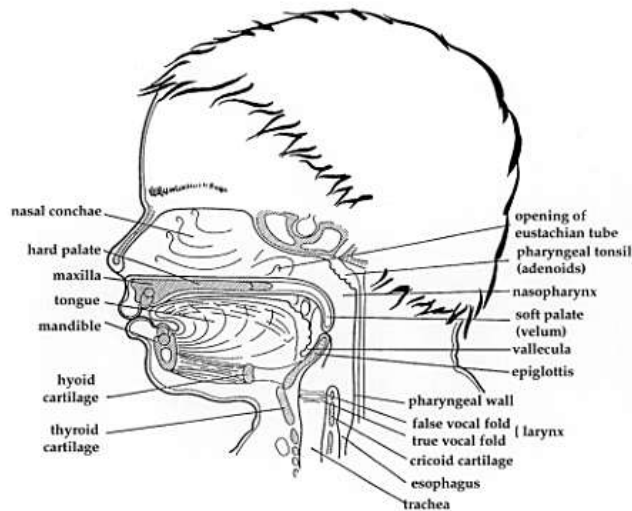
Drawing 1: Cleft Lip Repair – Series – Normal Anatomy
health.allrefer.com



Drawing 2: Anatomy & Physiology
www.studyblue.com

Maintaining a Wide “U” Palate Shape and Avoiding Problems with Palatal Development

THE MOUTH AND PHARYNX OF THE NEWBORN
(sagittal section)



Drawing by Artist Betsy True. Originally created for Suzanne Evans Morris who has granted permission for their use.



Photo: Tips to Calm a Crying Newborn Baby to Sleep at Night
www.thenewbornbaby.net

Nose Breathing is Crucial for Good Health, Feeding, and Palate Development (Bahr, 2010, pp. 6, 10, 55, & 56)



Photo: Breathing Issues in Your Newborn www.drninashapiro.com

Note: This baby has beautiful, typical newborn facial features

Characteristics of Children Who Mouth Breathe



Orthofree-Mouth breathing: Adverse effects on facial growth, Orthofree.com



Adenoid Facies and Snoring
www.drpaulouse.com

Tooth and Jaw Development Coincide (Bahr, 2010, pp. 115-119, 290-302)

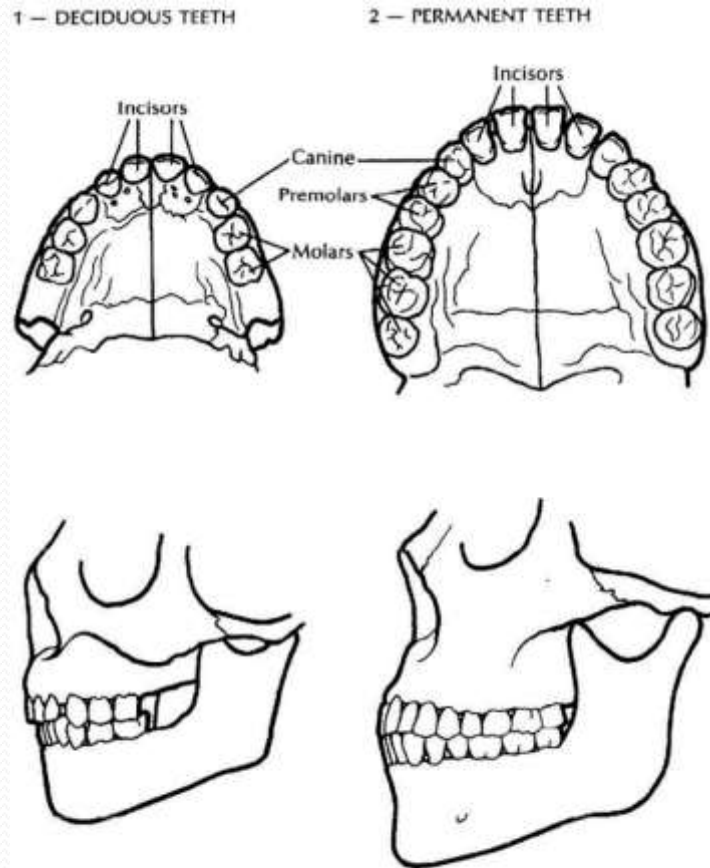


Illustration 3-27
Distribution of Deciduous and Permanent Teeth
Nobody Ever Told Me (or My Mother) That!

Drawing: *Craniosacral Therapy II: Beyond the Dura* by John Upledger, p. 192

Premature Babies & Babies with Disabilities



Photo 1: Taking Care of Premature Babies
www.becomenatural.com



Photo 2: Tutova, Barland,
and Beyond (2008 – 2011)
tutovababies.blogspot.com



Photo 3: C-Sections Not Always Best for
Preemies
www.huffingtonpost.com

A Tongue Should Be Mobile from Birth, Not Tied Nor Restricted (Bahr, 2010, pp. 22-23)



Photo: Anterior Tongue Tie www.cwgenna.com



Photo: Posterior Tongue Tie, www.cwgenna.com

The Frenum System



Photo: Maxillary Labial Frenum and Tongue Tie
www.tempestbeauty.com



Photo: Buccal Ties, www.jco-online.com

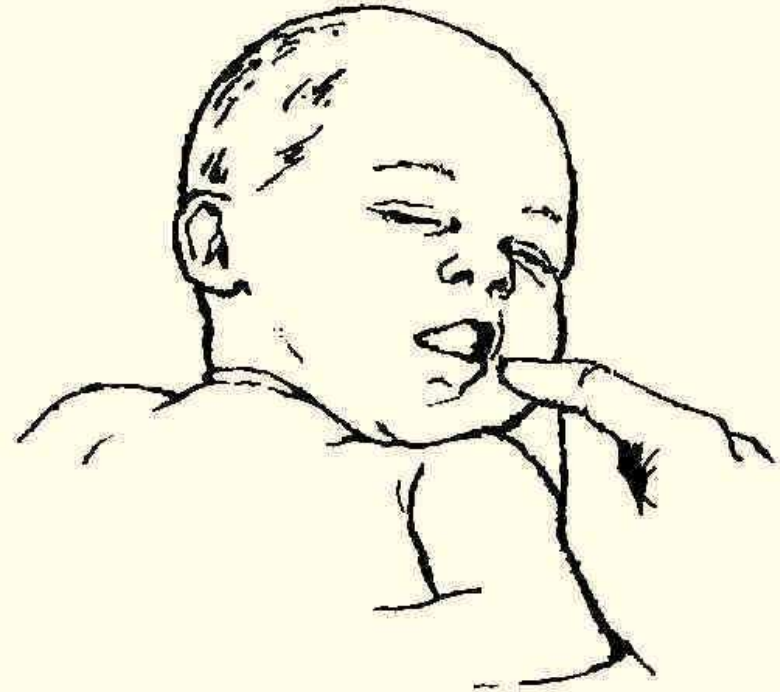
Sooooo, What About Heredity??????



Photo: Right in the Mustache, Rightinthemustache.com. <http://rightinthemustache.com/?p=323>

Infant Mouth Reflexes and Feeding Processes (Bahr, 2010, pp. 12-17)

- Rooting, tongue, and swallowing reflexes
 - Related to suckling reflex
 - Rooting and suckling come under a baby's control between 1 & 3 months of age
- Phasic bite, transverse tongue, and gag reflexes
 - Related to higher level feeding processes
 - Come under a baby's control between 5 & 9 months of age



Drawing: Newborn Reflexes - Nursingcrib.com
<http://nursingcrib.com/nursing-notes-reviewer/maternal-child-health/newborn-reflexes/>

Breast-Feeding is Biologically Normal (Bahr, 2010, pp. 29-31)



<http://breastfeeding.support>

- Breast drawn deeply into mouth to help maintain palate shape (roof of the mouth and floor of the nasal area)
- Balanced intraoral and other pressures (e.g., nasal, middle ear, pharyngeal, laryngeal) during feeding
- Supports suck-swallow-breathe synchronization
- Alternating breasts stimulates/exercises both sides of face, head, and body
- Better face, jaw, palate, tooth, and speech development
- Fewer upper and lower respiratory problems
- Fewer digestive problems (e.g., GERD, belly pain, bowel problems)

Bottle Feeding is a Medicalized Way of Feeding a Baby

(Bahr, 2010, pp. 32-34)



Photo: Anthony, 4 months

- Problem
 - Baby's tongue does not cup around the bottle nipple
 - Bottle nipple moves in & out of a baby's mouth
 - Bottle nipple moves in & out of mouth with cheek support
 - Lips not properly flared for latch
- Things to try
 - Choose a rounded nipple instead of an orthodontic nipple
 - Provide carefully applied cheek support
 - Try a shorter or different nipple
 - Provide carefully applied cheek support

Note: Cheeks, lips, and tongue cupping work together

If Bottle Feeding is Necessary, Consider Paced Bottle Feeding (Bahr, 2010, p. 26)

- Stroke the baby's lips with the bottle nipple
- Roll the bottle nipple into the baby's mouth when open and the baby is ready to feed
- Break after each sucking burst by tipping bottle (changes as baby has greater sucking bursts) – rhythmic process
- Use a slow-flow nipple
- Keep the baby upright and bottle fairly horizontal
- Follow the baby's hunger cues to avoid overfeeding (pp. 41-44)



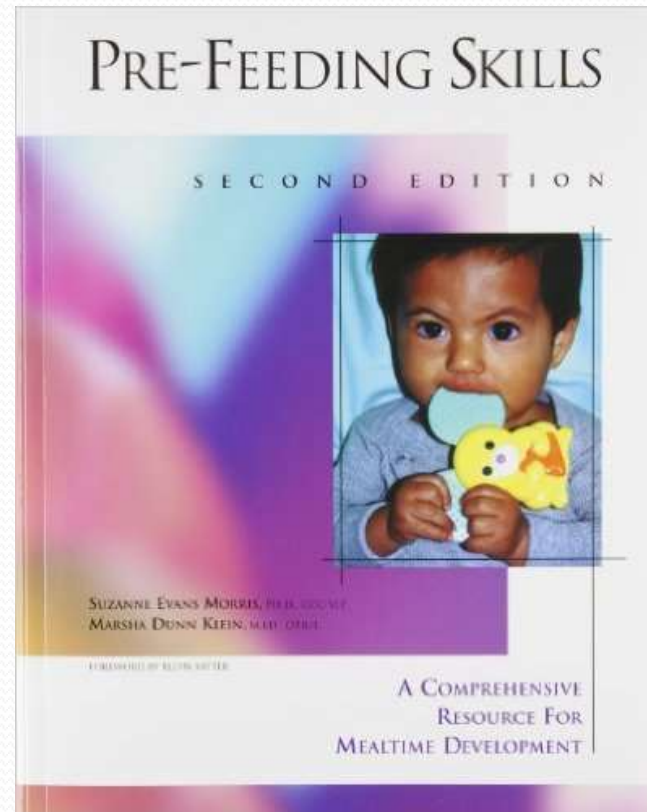
Photo: Anthony, 4 months



<https://www.lactationtraining.com/>

Developmental Feeding Guidelines Based on Original Research by Suzanne Evans Morris, PhD

- Morris, S. E. (1978, revised 2003). A longitudinal study of feeding and pre-speech from birth to three years. Unpublished research study.
- Morris, S. E., & Klein, M. D. (2000). *Pre-feeding skills: A comprehensive resource for mealtime development* (2nd ed.). Austin, TX: PRO-ED, Inc.



Spoon-Feeding (Bahr, 2020, pp. 160-166)

- Begins around 6 months
- Natural method
 - Use a spoon with small, flat bowl fitting lips
 - Place a reasonable amount of food on the spoon
 - Child opens mouth ready for the spoon
 - Child closes lips on the spoon
 - Spoon removed in a level manner
 - Good feeding rhythm and hand-mouth connection
 - Child watches parent eating from a spoon
- Side-to-side spoon feeding method



Photos: Anthony, 6 months

Spoon-Feeding Highlights from 6 to 24 Months (Bahr, 2010, pp. 202-214)

Note: Spoon-feeding particularly important for jaw, lip, and cheek development

- 6-7 months: Holds mouth still for spoon; lips move inward slightly when food on them
- 8 months: Upper lip removes food from spoon
- 9-10 months: Holds and/or bangs spoon, imitates stirring
- 12-14 months: Begins to self-feed with spoon
- 15-18 months: Scoops food with a spoon
- 24 months: Has palm up when bringing spoon to mouth



Photo: Anthony, 12 months, hand on spoon with mine



Photo: Anthony, 12 months, self-feeding

Open Cup-Drinking (Bahr, 2010, pp. 166-171)

Note: Open cup-drinking particularly important for jaw, lip, and cheek development

- Usually begins around 6 months but can be done earlier if needed
- Open cup fitting mouth with rim placed on bottom lip
- One sip at a time (moving from thickened to thin liquid, if desired)
- Thickened liquid examples
 - Stage One baby food fruit or vegetable thinned with water
 - Formula thickened with baby cereal
 - Milk thickened with smooth yogurt (over 12 months)
- Consecutive swallows by 9 months but often seen earlier



Anthony – 6 Months

Straw-Drinking

(Bahr, 2010, pp. 171-176)

- Can begin around 6 months
- Child
 - Initially learns to drink from a straw bottle (with thickened liquid, if desired)
 - Drinks from a straw placed **just on the lips** in the center, taking one sip at a time
 - Learns to draw/drink swallow-after-swallow from a regular straw cup over time

Note: Straw-drinking particularly important for jaw, lip, and cheek development



Photo: Anthony, 6 months



Photo: Anthony, 12 months

Drinking Highlights from 6 to 24 Months (Bahr, 2010, pp. 202-214)

- 6-8 months: Can take single sips from an open cup held by adult
- 6-12 months: Consecutive sucks from open cup, recessed lid cup, and straw
- 12 months: Holds open or handled cup, and drinks with some spillage
- 15-18 months: May continue to bite on cup rim for stability
- 24 months: Can drink from an open cup without spillage; no longer bites on cup rim



Photo: Anthony, 6 months



Photo: Anthony, 12 months

Taking Bites and Chewing Foods (Bahr, 2010, pp. 177-181)

- Introduce safe and appropriate foods for taking bites and chewing beginning around 6 months
- Baby bite-sized food pieces can be placed in safe feeder or cheesecloth if choking hazard
 - Moving feeder from front of mouth to back molar areas as baby bites promotes **tongue lateralization**
 - 12 to 15 chews on one side then the other at back molar areas promotes **adequate chewing**



Baby Safe Feeder



Hansen Kids Feeder



Munchkin Feeder

Finger Feeding Highlights from 6 to 24 Months (Bahr, 2010, pp. 202-214)

- 6-8 months: Picks up food pieces with fist and can hold a soft baby cookie
- 8-9 months: Can pass food from one hand to the other
- 9-12 months: Begins to pick up food with thumb and fingers
- 12-15 months: Can pick up food with thumb and index finger



Photo: Anthony, 6 months

Note: Finger feeding particularly important for hand-to-mouth coordination

Oral Management Highlights from 6 to 12 Months (Bahr, 2010, pp. 202-207)



www.casualclaire.com

Note: Taking bites/chewing particularly important for jaw, tooth, and palatal development

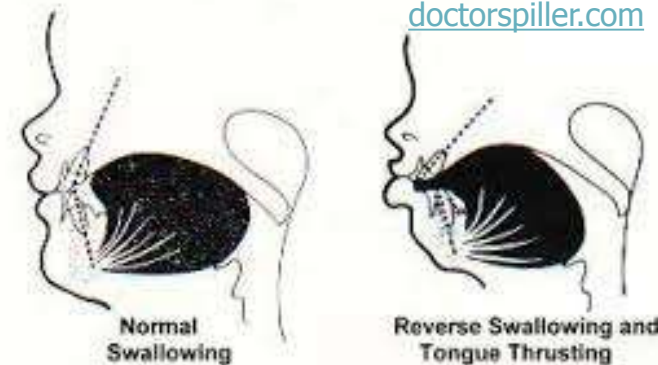
• 6-9 months

- Jaw movements begin matching shape and size of food
- Lips and cheeks help keep food in place
- Tongue moves toward food placed on side gums

• 9-12 months

- Diagonal rotary chewing increases
- Soft cookie stabilized by jaw and broken off by hand
- Lips increasingly active
- Food moved from center of tongue to side gums for chewing

Oral Management Highlights from 12 to 18 Months (Bahr, 2010, pp. 207-211)



Note: Crucial times for tongue tip movement (mature swallow & lateralization)

- 12-15 months
 - Can bite through a soft cookie
 - Lip corners and cheeks control food placement by 15 months
 - Tongue tip elevation to alveolar ridge to initiate mature swallow (intermittent at first)
- 15-18 months
 - Coordinated diagonal rotary chewing
 - Top front teeth remove food from bottom lip as lip moves inward
 - Tongue lateralization increasingly sophisticated to place and collect food

Oral Management Highlights from 18 to 24 Months (Bahr, 2010, pp. 211-214)



Two-year-old children
rainbowchildrens.com

- 18-21 months
 - Can bite through a hard cookie with difficulty
 - Can chew with lips closed
 - Has good control of swallowing
- 21-24 months
 - Can bite through a hard cookie with ease
 - Can chew with closed lips using both diagonal rotary and circular rotary chewing
 - Can easily move tongue tip to place and collect food for chewing and swallowing

Pacifier Use and Weaning (When Used)

(Bahr, 2010, pp. 108-115)

- Pacifier needs to fit mouth
- Shape determined by what you want the tongue to do
- Birth to 5 or 6 months: As needed to **calm**
- 6 to 10 months: Just before sleep; replace with appropriate mouth activities
- Discontinue after 10 months to avoid middle ear problems

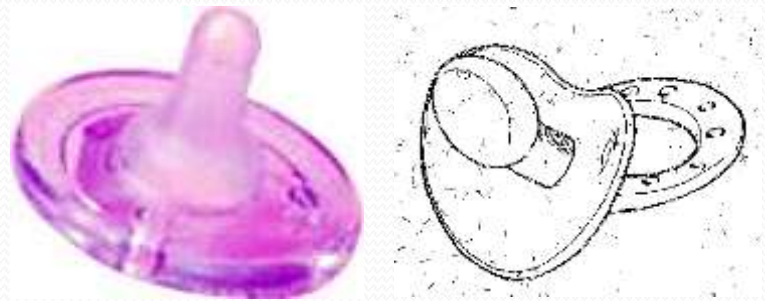


Photo: Anthony, 6 months

Mouthing is a Developmental Process (Bahr, 2010, pp. 91-108)

- Generalized mouthing (birth to 4-5 months), pp. 93-97
- Discriminative mouthing (begins 5 to 6 months), pp. 97-100
- True mouth play such as horns and bubbles (9 to 24+ months), pp. 101-108



Photo: Anthony, 4 months,
Generalized Mouthing



Photo: Anthony, 6 months,
Discriminative Mouthing

Appropriate Items for Mouthing and Chewing - Beginning 3 to 4 Months of Age (Bahr, 2010, pp. 140-141)



ARK Therapeutic Services, Inc.



Note: Chewing important for jaw, tooth, and palate development

Nobody Ever Told Me (or My Mother) That!

Systematically Applied Oral Massage (Bahr, 2010, pp. 125-136)

- Suckle/Suck training
- Work through breast, bottle, and other feeding issues
- Increase awareness
- Decrease defensiveness
- Reduce gagging and tonic bite (if one exists)
- Help satisfy oral-seeking behaviors
- Jaw development if Jaws-Ercise included



Photo: Anthony, 4 months, Oral Massage

Jaws-Ercise Can Begin at Birth (Bahr, 2010, pp. 136-147)



Photo: Powder-Free-Vinyl-Exam-Gloves
www.allegromedical.com



Photo (www.colourbox.com):
Blue arrow points to
“squishy” part of “Index
Finger”

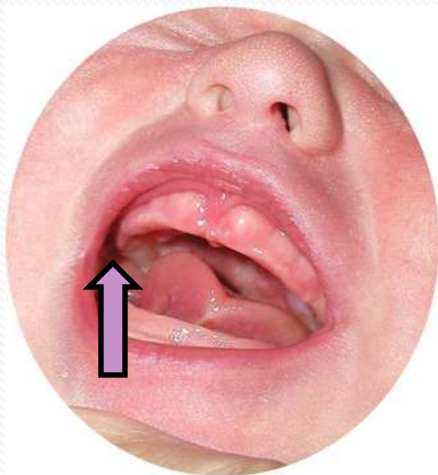


Photo (www.cwgenna.com):
Blue arrow points to top back
molar area where infant chews
on “squishy” part of index
finger (finger pad oriented
toward gum with nail area
resting between gum and
cheek)

- May help maintain maxillary arch (upper jaw) and facilitate jaw development
- May help improve:
 - Jaw grading and alignment
 - Rhythm of jaw movement
 - Jaw strength to maintain closed mouth at rest
 - Tongue retraction for mature swallow
 - Tongue lateralization (if work from front to back of mouth)
- Can replace pacifier and other less mature, detrimental oral habits if child has these

Jaw Exercise at Back Molar Area (Bahr, 2010, pp. 142-147)

- Place jaw exerciser or food (in safe feeder or cheesecloth if needed) at back molar area from the side
- Look for jaw alignment
- Work toward 12-15 solid and graded chews on each molar surface
- Work toward 3 sets alternating sides
- Be sure chewing item does not hyperextend jaw



Artwork from *New Visions* Catalog www.new-vis.com

Encouraging Vocal Development from Birth (Bahr, 2010, pp. 216-218)

- Vocalize with child beginning at birth
- Imitate baby's vocalizations
- Use pacifier only for calming, so child can vocalize
- Take vocal turns; wait for baby to vocalize; have pretend conversations
- Look at pictures & read



Photo: Anthony, 4 months

Speech Development (Bahr, 2010, pp. 218-220)

- 1 month: Vowel-like sounds short “a” and long “e”
- 2-3 months: Up to 5 different vowel-like sounds; consonant-like sounds “h,” “k,” and “g”
- 3-4 months: Babbling may include “bababa,” “dadada,” and “mamama”
- 4-6 months: VC and CV syllables developing; most vowel sounds heard
- 6-7 months: Begins to imitate two-syllable babbling; consonants “p,” “b,” “w,” “t,” “d,” “m,” “n,” “k,” “g,” “y” heard
- 7-9 months: Begins to string vowels together in a sentence-like manner



1-month-old
www.newkidscenter.com



6-month-old
www.gettyimages.com

Speech Development (Bahr, 2010, pp. 221-224)

- 9-12 months: Says first meaningful words
- 12-15 months: Uses 5+ meaningful words; imitates words has not said
- 15-18 months: Says 15-20 meaningful words; names 5-7 objects
- 18-21 months: Two-word stage begins, but primarily speaks in single words
- 21-24 months:
 - Uses 20+ words clearly and appropriately
 - Can say between 50 and 270 words
 - Uses full range of vowel, diphthong, and consonant sounds in speech



12-month-old
www.babygaga.com



18-month-old
www.heidihope.com

Some Resources by Diane Bahr



- Website with free information about feeding, motor speech, and mouth function: www.agesandstages.net; Email: agesandstages@cox.net, dibahr@cox.net
- Parent-Professional Book: *Nobody Ever Told Me (or My Mother) That! Everything from Bottles and Breathing to Healthy Speech Development*
- E-Course: *Everything You Need to Know about a Baby's Mouth for Good Feeding, Speech, and Mouth Development*