



Smart Pacifier Use Promotes Healthy Oral Motor Development

by Jane Molina February 2, 2024



The first tooth. The first word. The first solid food.

These are just a few milestones that every parent looks forward to.

Oral motor skills begin developing in utero and continue well beyond the preschool years. Oral development affects feeding, sleep and speech. Conversely, poor oral motor skills may lead to feeding

and speech delays, picky eating, excessive drooling, teeth grinding and gagging.

Stacy Pulley, Clinical Director at Family Tree Therapies, says parents are key in promoting oral development. And smart pacifier usage is one great way to support this goal. Pulley is a speech pathologist and feeding therapist who specializes in breathing and oral myofunctional development. She ordered the Ninni pacifier to use in promoting and training a strong suck pattern for appropriately aged babies.

The soft, breastlike shape of the Ninni promotes jaw, lip and tongue stability and dissociation. This stimulates the sucking reflex in newborns. Around the 6 month mark, however, babies must begin to integrate the need to suck with the development of chewing.

This article provides an overview of oral development, oral motor reflexes and milestones to look for in baby's first year. We also go over smart pacifier usage, including the importance of pacifier shape and avoiding pacifier dependence.

Pulley says oral motor “resting posture” is of utmost importance.

But what does that look like?

Basically, a healthy resting posture means baby’s mouth is gently closed, with the tongue resting inside and up on the roof of the mouth.

Nasal Breathing

You want your baby to breathe softly and quietly through the nose, with the lips gently closed. Nasal breathing indicates a healthy lingual-palatal connection. The tongue should rest against the soft palate, allowing the pharynx to spread for a relaxed, open airway.

If you notice baby mouth breathing or snoring, check with your pediatrician or therapist. Issues such as tongue tie disorder may cause mouth breathing and poor tongue posture.

Tongue Movements

Babies should be able to elevate, lateralize and retract the tongue with ease. The tongue must make strong contact with the hard palate. This widens the airway and promotes healthy nasal breathing.

Mouthing

Mouthing is when your baby explores their hands, toys and other objects by mouth.

This natural behavior supports tongue development, including lateralization and holding food at the premolar edge.

Mouthing and chewing typically start at around 5 months of age. At 5 to 6 months, more discriminative mouthing sharpens oral reflexes and prepares baby for feeding. Mouth play with horns, bubbles and other toys happens around 9 to 24 months. This is when baby learns to move the jaw, lips and tongue independently.

BABY’S ORAL REFLEXES

There are many infant mouth reflexes that your baby will bring under their control as they mature.

Sucking

Sucking is the first essential oral movement.

It grows the jaw and coordinates the lower face muscles. The sucking reflex organizes feeding times, synchronizes breathing and calms the nervous system. It helps the tongue develop a proper shape and movements.

Chewing

The chewing reflex develops from birth. Parents should introduce chew toys around 4 to 5 months of age.

By 5 to 6 months, babies need more experiences with chewing and less need for suckling or sucking. Chewing promotes jaw gradation, jaw alignment, tongue elevation, tongue lateralization and tooth eruption. It exercises the eustachian tubes and helps remove middle ear fluid. This may reduce the risk of ear infections.

By age 2, the jaw, lips, cheeks and tongue should move independently, and your child should be able to chew bite-sized pieces of food with their mouth closed.

Mature Swallow Pattern

Babies must develop a swallow pattern of chew-pause-swallow.

Proper swallowing occurs when the tongue moves upward to the alveolar ridge, instead of a forward or suckling pattern. As baby matures, the sucking reflex becomes more integrated and the chewing reflex develops.

Baby's swallow pattern begins to change between 9 and 12 months. Younger infants exhibit an extrusion reflex, in which the tongue pushes slightly forward when the child swallows. This phenomenon should disappear by around 10 months.

Drinking from a Cup

Babies should learn to drink from a cup by around 12 months.

Some spillage is normal until your child gets the hang of it. Instead of sippy cups, offer recessed lid cups, open cups or straw cups instead. Bottle weaning should be completed between 12 and 15 months.

Additional Reflexes

There are many reflexes that build a foundation of differentiated movement for feeding, speech and nasal breathing.

Here are a few examples.

- Rooting reflex: This reflex helps baby find mama's breast. When you stroke the corner of your baby's mouth with the nipple or bottle, they should instinctively turn their head towards it, open their mouth and make sucking movements with the tongue and lips.
- Suckling reflex: This back-and-forth tongue movement occurs when you place a nipple, bottle or other object inside baby's mouth. It enables baby to feed from the breast or bottle.
- Hand-to-mouth reflex: It's no secret that babies like to put things in their mouths. This natural reflex begins in utero and continues throughout infancy.
- Phasic bite: This reflex is stimulated by gentle pressure to baby's cheeks or gums. You should notice rapid up-and-down movement of the jaw with no lateral movement.
- Transverse tongue: Stimulated by food, taste or touch to either side of the tongue, this reflex involves movement of the tongue from side to side. It typically disappears between 9 and 24 months of age.
- Gag response: The purpose of this reflex is to protect against choking. It can be stimulated by touching the back of baby's mouth with food, utensils, toys or fingers. It begins to diminish around 6 months of age as baby prepares to eat solid foods.

WHAT TO EXPECT IN BABY'S FIRST YEAR

Pulley offers a number of oral development milestones parents should look for during baby's first year. There are also things you can do to promote healthy oral motor skills in your child.

Birth to 3 Months

If at all possible, breastfeed your newborn to encourage proper sucking action. Breastfeeding teaches baby to coordinate the lower facial muscles.

Here's what to look for in the first three months:

- Nasal breathing at rest, with tongue inside lips and lips closed
- Organized suck-swallow-breathe pattern on nipple
- Rooting reflex
- Adequate lip seal on nipple
- Lips sealed when sucking, should not lose fluid on side of mouth
- Tongue and jaw work together to take milk or formula
- Improving head control stabilizes jaw in preparation for solid foods
- Position when feeding: relaxed, flexed position with chin slightly down

Red flags to check out:

- Mouth breathing at rest
- Poor latch
- Fussy while eating
- Shallow suck or clicking noises
- Excessive drooling
- Coughing or choking

3 to 6 Months

Between 3 and 6 months, the jaw should "munch" and your baby should enjoy chewing on toys. This teaches the tongue tip to move up and down and side to side. It also teaches the jaw to "grade" its movements for chewing and for future speech sound development. Munching also helps to move the gag reflex back toward the back of the tongue instead of the front of the mouth.

Milestones to look for:

- More mature sucking pattern
- Able to suck from spoon
- When spoon is presented horizontally, lips lightly close to suck puree
- Tongue may protrude slightly when swallowing solids
- Increased cheek and lip activity while sucking
- Maturing tone and use of lip and cheek muscles
- Munching pattern emerges
- Closed mouth resting posture
- Anticipates food with excitement
- Reaches for food

Red flags to check out:

- Open mouth resting posture
- Rooting reflex remains at 6 months
- Coughing or choking
- Excessive drooling
- Limited lip movement when presented with spoon

6 to 12 Months

Between 6 and 9 months, baby should use their lips to take food from a spoon. They should increase their rotary chew pattern on soft solids without overreliance on pureed foods from squeeze containers.

By your child's first birthday, they should learn to drink from an open top cup. Sippy cups flatten the tongue and keep the tip of the tongue pinned down while swallowing. Most kids will be weaned from the bottle between 12 and 15 months of age.

Milestones to look for at 6 to 9 months:

- Learns to drink from open top cup
- Masters taking puree
- Introduce soft solid foods
- Picks up food and holds for bite
- Increased rotary chew

- Tongue moves side to side and up and down
- Makes sounds with lips and tongue
- Holds and drinks from bottle
- Can self feed soft solids

Milestones to look for at 9 to 12 months:

- Rotary jaw movement while chewing
- More continuous sucks or drinks from cup with ease
- Holds own spoon
- Enjoys variety of textures and flavors
- Moves food from center to side of mouth without using fingers
- Drinks from open top cup with little support
- Uses a straw without suckling

Red flags include pacifier dependence beyond 6 to 9 months. Babies should no longer need a pacifier at all by 12 months.

BEST PRACTICES FOR PACIFIERS

Pacifiers, if they are the correct shape, can encourage development of early reflexive patterns with sucking, as well as tongue positioning and movement. Around 5 to 6 months of age, Pulley advises parents to encourage mouthing and chewing with safe foods and toys.



Pacifier Shape

Pulley recommends a rounded pacifier shape that mimics that of a nipple, such as the Ninni.

A rounded shape requires baby to use the same musculature as breastfeeding. Other pacifiers or bottles will require greater lip muscle usage and are less helpful in stabilizing baby's jaw and strengthening the tongue position.

Pulley notes that the Ninni promotes a "soothe and remove" approach, in which the pacifier falls out once the child goes to sleep. This allows the tongue to have a natural resting

posture on the roof of the mouth, with the lips softly closed and the child breathing nasally. As noted earlier, proper tongue posture encourages the palate to develop widely instead of high and narrow.

Pacifier Weaning

The Ninni has been tested by the U.S. Consumer Product Safety Commission and passes all tests for babies of all ages.

However, older infants may start chewing on it when teething begins. To address this issue, Pulley advises parents to replace the pacifier with chewing and mouthing toys.

While pacifiers are helpful in early infancy, overuse interferes with the development of lingual reflexes and tongue position. Examples of pacifier dependence include using it beyond 5 months, keeping it in all day long or needing it all night to sleep. Weaning your child from pacifier use encourages the palate to develop a proper shape and teaches the tongue to move correctly on its own.

By making smart choices early in life, you can set your child up for success when it comes to oral motor development!



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