

CHOOSING A PACIFIER TO SUPPORT NORMAL DEVELOPMENT

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Sucking is an important milestone for any baby and it starts to develop as early as the twentieth week of pregnancy, while the baby is still in the comfort of the womb⁷. Sucking is important in the development of feeding⁷, organising behaviour (improved alertness) as well as speech and language development.



Sucking in the womb

Sensitivity around the mouth area develops in the womb from as early as 8 weeks gestation (weeks pregnant). This is one of the first systems to develop and indicate the importance of the mouth in survival. The baby can suck from 24 – 28 weeks and coordinate her suck-swallow and breathing pattern from 28 weeks gestation^{1,2}. When born preterm, the baby may struggle with the coordination of suck-swallow and breathe and this may lead to choking when feeding is started too soon. In order to support the development of sucking and preserve the sucking reflex in the preterm baby, it is important to provide the baby with appropriate sucking opportunities, which may include suckling on the mother's breast (or an expressed breast in the case of a tiny baby), sucking on her own thumb, hand, or lips or sucking on a pacifier⁷.

For preterm babies younger than 32 weeks gestation a pacifier should be selected that is similar to her thumb, since this is what she would be sucking on when still in the womb, but for a full term baby you can look for a pacifier that is similar to mom's nipple^{3,7}. The general guidelines for a pacifier is that it should be shaped cylindrical in order to enable tongue-cupping. (this is the tongue forming a groove in the middle of the tongue in which the pacifier will be placed⁴).



Premature pacifier

When baby then feeds, she will be using the same technique, and this enable her to move the milk from the front to the back of the mouth (via the groove) and prevent her from spilling. Furthermore, the pacifier nipple should have a small bolus on the end to stimulate the soft palate and also the feeling part of the brain (the limbic system)⁷. This in turn stimulate the release of endorphines or "feeling good hormones" which calms the baby.

The optimal length of the nipple can be determined when putting your finger into the baby's mouth and allowing her to suck on it^{5,7}. Mark the position on your finger where her lips close and when you take your finger out you will be able to see how long the nipple should ideally be. The mother's nipple lengthen and shorten continuously during a feed and the pacifier cannot do the same. Care should therefore be taken to select the optimal length, since a nipple that is too long may cause an overactive gag reflex and a nipple that is too short and flat may cause the baby to push the nipple out of her mouth and may also

hinder the development of certain sounds and feeding⁷. Sucking also has a direct effect on language development.



Premature and small pacifier

The pacifier should furthermore have a big, soft mouth shield to stimulate and wake up all the nerve endings around the mouth and help with lip closure. The pacifier should preferably be a single unit that has no parts that may come apart and cause choking⁷. Finally the pacifier should have a handle which the baby can hang on to, since this will support the hands-to-mouth and midline positioning. Hands-to-mouth (or face) is a method the baby use to self-soothe and midline positioning is used for self-regulation, but also for supporting integration of left and right brain functions.

Quick reference guide
Silinder form nipples to support toungue cupping (similar to thumb or mom's nipple)
Small bolus at end of nipple to stimulate limbic system of brain
Optimal nipple length to reach rigde between soft and hard palate
Big, soft mouth shield to stimulate nerve endings around the mouth
"Handle" on shield to provide for hand-to-mouth and grasping

When **painful procedures**, such as immunizations need to be performed the baby can be provided with a pacifier or mom's breast two minutes before the procedure and additional sweet tasting substances such as mother's milk or sucrose can be given two minutes before the procedure⁶. The taste system develops very early in pregnancy and is an important sense that is used to block painful stimuli and help the baby to return to a state of balance as soon as possible and with using as little energy as possible.

Research has shown that all different kinds of pacifiers has a similar outcome on orthodontic development of the child at five years of age, but by not using a silindric shaped nipple or teat, she may experience problems with feeding and language. Breastfeeding are however still superior to bottles teats and pacifiers when you want to ensure the best orthodontic development for your little one. Your baby should also be offered a pacifier when she is crying and struggling to settle, but she should not be using a pacifier after 14 months of age. However, if she does not want to take a pacifier, no need to worry. Only allow her to suck on your breast, since this will support the best mouth development. When your breast is not available mom or dad's finger will be a great replacement. Providing your baby with a pacifier to suck on when you put her to bed, will also lower her risk for dying of cot death.

What about pacifiers in a Baby Friendly environment? Baby Friendly is an initiative that was developed for moms with healthy pregnancies, healthy vaginal births and healthy babies who are not seperated from mom after birth. If you do not fit all of these criteria, then your baby may need some support with sucking and if the baby is in the neonatal intensive care unit and does not suck for a period

of time, she may lose the suckling reflex. Sucking confusion is also only seen when the incorrect kind of pacifier are offered, but by following the guidelines above and only using a pacifier when really needed (preferably only starting after 3 weeks), you will not have a problem with nipple confusion due to the use of a pacifier.

Sucking is important, since it supports normal development, self-soothing and let the baby feel good. In preterm babies it also prepare the babies for feeding per mouth and help them to feed better, grow better and even balance blood sugar levels.



Full term pacifier

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