New Insights on Nipple Shields

If you’ve ever used a nipple shield—or know someone who has—you’ve probably received conflicting advice about its use. Most nipple shields are made of silicone and consist of a thin “brim” that covers all or part of the areola (the pigmented area around the nipple) and a firmer, protruding “tip” that fits over the nipple. When a baby breastfeeds with a shield in place, milk flows through the holes in its tip. Nipple shields are one breastfeeding tool many mothers love to hate, in part because of their inability to get consistent answers to questions such as the following: When is a nipple shield an appropriate tool? Should a mother using a nipple shield express milk after feedings to safeguard her milk production? Should weaning from the shield always occur as soon as possible? Luckily, research has provided us with some answers.

When Can Nipple Shields Help?

Like any breastfeeding tool or technique, nipple shields can be used or misused. During recent decades, the pendulum has swung to both extremes. After a time of nipple shields being given out freely in hospitals after birth, their use was strongly discouraged (Mohrbacher & Stock, 1996; Newman & Pitman, 2006). However, both research and case reports suggest that in some situations, nipple shields can help preserve breastfeeding (Bodley & Powers, 1996; Brigham, 1996; Clum & Primomo, 1996; Elliott, 1996; Sealy, 1996; Wilson-Clay, 1996; Woodworth & Frank, 1996). The key is to use them wisely.

For example, one study found that preterm babies who slipped off the nipple during pauses or fell asleep early in feedings sucked longer and took more milk when a nipple shield was used (Meier et al., 2000). All of the 34 babies in this study who used the shield took more milk directly from the breast, with a mean increase of 14.4 ml (about a half-ounce), sucked for longer bursts and stayed awake at the breast longer.

The length of time these preemies used the shield varied, with a mean of 32.5 days. On average, the mothers used the shield for about 24% of their time breastfeeding. The babies who were previously unable to transfer milk without the shield used it longer than the babies who took some milk from the breast alone. There was no association between the length of time the shield was used and duration of breastfeeding. The reason the shield helps some preemies is not yet fully understood, but some think its firmer tip may push deeper into the baby’s mouth, triggering more active suckling (Hurst & Meier, 2010).
A mother can feel at ease about using the shield as long as it helps the baby breastfeed more effectively. In general, as the baby matures, his coordination increases, and as he develops more practice and positive associations at the breast, the easier it will be to wean him from the shield.

In one US retrospective telephone survey, 202 breastfeeding mothers reported using nipple shields for the following reasons (Powers & Tapia, 2004):

- Flat or inverted nipples (62%)
- Disorganized infant suck (43%)
- Sore nipples (23%)
- Engorgement (15%)
- Prematurity (12%)
- Tongue-tie (1%)

When the baby of a mother with flat or inverted nipples is having difficulty taking the breast, the tip of the nipple shield can provide the firm feeling deep in his mouth a baby is looking for. Problems like this may be more likely for these mothers when bottles and/or pacifiers (dummies) have altered baby’s expectations (Wilson-Clay & Hoover, 2008). For this same reason, a shield may help a newborn take an engaged breast or help transition a reluctant bottle-feeding baby to the breast (Wilson-Clay, 1996). For mothers with damaged nipples, temporary use of a nipple shield may provide just enough pain relief to avoid interrupting breastfeeding. For the baby with high muscle tone or tongue-tie, the firm shield can help push the breast past a retracted or humped tongue to trigger active sucking (Genna, Fram, & Sandora, 2008). With some breastfeeding problems, using a nipple shield can allow the baby to feed directly from the breast, simplifying a mother’s life by minimizing the need to express her milk and feed it to her baby another way.

That said, however, whenever possible it is always better to try to solve a problem first by improving breastfeeding dynamics rather than by using a nipple shield. An inappropriate use of a nipple shield would be for a supporter to offer it as the first solution to a problem or as an alternative to spending time helping a mother make adjustments in how she puts her baby to the breast.

Do Mothers Using Nipple Shields Need to Express Milk after Breastfeeding?

Originally, mothers using a nipple shield were told to express milk after feedings because one study found reduced milk transfer when the shield was used. This 1980 UK study found that thick nipple shields altered babies’ sucking patterns and the babies took less milk from the breast (Woolridge, Baum, & Drewett, 1980). The babies using the thick, rubber nipple shields took 58% less milk, and those using the thinner latex nipple shields took 22% less milk than when the babies took the breast alone. However, the babies in the study had been breastfeeding well without the shield, and the change in sucking may have been simply because the shield was unfamiliar.

Newer research suggests that in most cases expressing after feedings may not be necessary. A 2009 study charted weight gain in 54 babies who were breastfeeding with a nipple shield and whose mothers were not expressing milk after feedings. The researchers found no statistically significant difference in weight gain at two weeks, one month, and two months between babies using a nipple shield and those breastfeeding without one (Chertok, 2009). In Selecting and Using Breastfeeding Tools 2009, US lactation consultant Catherine Watson Genna wrote:

“Many LCs encourage mothers using a nipple shield to pump. I originally followed the ‘party line’ and encouraged mothers to express milk while using a nipple shield but soon found that some mothers were developing uncomfortable [oversupply] and recurrent plugged ducts (Genna, 2009, p. 57).”

Genna now individualizes her suggestions to mothers, encouraging them to watch their baby for signs of active breastfeeding, satisfaction and normal energy levels and stool output. If the baby seems sleepier than usual, has fewer than four stools per day before six weeks of age, or seems unsettled, she may recommend the mother express milk and supplement her baby with it.

In some situations, expressing after feedings may make sense, such as the mother whose milk production is low or the mother who is unsure her baby is draining her breasts effectively. Regular weight checks are a good idea until it is obvious milk expression is not needed. After feedings with a shield, other signs of milk transfer that a mother can note between weight checks are seeing milk in its tip and a decrease in breast fullness.

When and How Should a Mother Wean from a Nipple Shield?

The right time to wean from the shield depends partly on the reason it was used. For example, when a shield is used to help a baby who has been bottle-feeding recognize the breast as a source of milk, it may only be helpful for one feeding. But if a mother and baby have been struggling with breastfeeding for some time and the baby considers the breast a source of frustration, a longer time of easier breastfeeding to build positive associations may be better. The preterm baby using the nipple shield to improve breastfeeding effectiveness may need to grow and mature for several weeks before he can feed well without the shield. In the study of preterm babies mentioned previously, the preemies who took more milk with the shield continued to do so on average until they reached their full-term corrected age of about 40 weeks (Meier et al., 2000). If a nipple shield helps increase milk intake at the breast, it makes sense to use it as long as this is the case.
In the survey of 202 mothers mentioned previously, 67% eventually weaned from the shield and breastfed without it, with the length of shield use ranging from one day to five months and a median duration of two weeks (Powers & Tapia, 2004). Of the 33% who used the shield for the duration of breastfeeding, 11% said the baby would have breastfed without it at any time but continued using it because breastfeeding felt more comfortable with it. One mother used the nipple shield for the entire 15 months she and her baby breastfed.

When the time seems right to wean from the shield, the mother may start by breastfeeding with the shield. When milk ejection (let-down) occurs and the baby is swallowing milk, try removing the shield quickly and putting the baby immediately back to the breast. If the baby takes the breast, the mother can use this strategy whenever needed to move from shield to bare breast. Usually, as the baby becomes more coordinated and more practiced (in my personal experience this often happens at about five to six weeks of age), the shield will be needed at fewer and fewer feedings.

If this strategy doesn’t work, the mother may continue using the shield at all feedings and try again a few days later when she and her baby are feeling relaxed, perhaps at a time when the baby is not too hungry (Mohrbacher, 2010). I suggest the mother always strive to keep the breast a pleasant place for her baby. If the baby is unwilling to breastfeed without the shield, it is best to avoid pushing the issue at every feeding because this can make the breast a battleground and lead to more feeding problems.

Although it was once recommended to wean a baby from a nipple shield by gradually cutting off the tip of the shield until it is gone, this strategy is not recommended for the ultra-thin silicone shields used today. This is because when cut, silicone has sharp edges that can irritate the baby’s mouth.

A mother can feel at ease about using the shield as long as it helps the baby breastfeed more effectively. In general, as the baby matures, his coordination increases, and as he develops more practice and positive associations at the breast, the easier it will be to wean him from the shield. A baby may need the shield for one feeding, a few feedings, a few days, a few weeks, or very rarely, a few months. If the baby is unable or unwilling to breastfeed without the shield, chances are the problem that caused the baby to need the nipple shield in the first place is not yet completely resolved. A mother who wants to wean from the shield should take her cues from her baby but keep trying to offer the breast without the shield every few days.

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