

Breastfeeding: Pass It On



## **Introduction**

## **Breastfeed for How Long? What do the Experts Say?**

**The American Academy of Pediatrics** recommends exclusive breastfeeding for approximately the first six months of life, and continued breastfeeding to at least one year or beyond, with the addition of complementary solid foods at about six months. The AAP describes human milk as “the optimal form of nutrition for infants.”

Work Group on Breastfeeding, American Academy of Pediatrics. Breastfeeding and the Use of Human Milk. *Pediatrics* 2005;115(2):496-506.

**The American College of Obstetricians and Gynecologists** recommends exclusive breastfeeding for approximately the first six months of life, continued to at least one year. ACOG states that “human milk provides developmental, nutritional, and immunologic benefits to the infant that cannot be duplicated by formula feeding.”

ACOG Educational Bulletin, July 2000.

The American College of Obstetricians and Gynecologists, 409 12<sup>th</sup> St., SW  
PO Box 96920, Washington, DC 200290

**The American Academy of Family Physicians** recommends exclusive breastfeeding for six months of life, but encourages mothers to keep going for two years or more. The AAFP states that “breastfeeding has profound effects on the developing immune system,” and that “the evidence overwhelmingly supports the recommendation for breastfeeding”. They advocate for the doctor to act as a strong supporter of breastfeeding: “Encouragement from a physician and other family members....are important factors in the initiation of breastfeeding.”

American Academy of Family Physicians, Policies on Health Issues

Breastfeeding Position Paper

[www.aafd.org](http://www.aafd.org)

Parent tip

Six months of only breast milk is the ideal but, remember, try not to think in terms of all or none. Do the best you can given all the challenges you will face as your baby grows up. Even a little breast milk is better than none.

Student tip

Remember exclusivity for six months

## What to Require of the Hospital

Expectant parents often ask how they can get ready for breastfeeding. Mom, preparing your nipples is *not* necessary; however, preparing your obstetrician *is* necessary. Discuss your breastfeeding plans and expectations with your obstetrician, Family Medicine doc, or your midwife during prenatal visits, so they are able to help you during the first hours after birth. Events in the early postpartum period can influence your breastfeeding success.

### ***Skin-to-skin is the best way to begin***

Research has shown that if infants are placed on the mother's abdomen after birth, they will make crawling movements after about 20 minutes of life, and by about 50 minutes, most babies will have successfully found and latched onto the breast unassisted and begun to suckle. Moreover, infants that sought out the breast and "self attached" developed better sucking techniques than infants in the control group who were removed from the mother after 20 minutes for routine hospital procedures. Researchers are just beginning to discover information about innate newborn behavior immediately after birth. In a study of ten infants placed skin-to-skin after vaginal births to mothers who were not exposed to any maternal analgesia, infants used their hands to reach for, explore and stimulate their mother's breast in preparation for the first breastfeeding. Infant hand movements and sucking patterns were found to be coordinated. An increase in levels of maternal oxytocin, which squeezes milk out of the breast, and is also known as the bonding hormone, was associated with periods of increased hand massage or sucking of the breast.

### ***Breastfeeding within one hour of life***

Infants who breastfeed in the first hour of life have a better suck and increased breastfeeding duration compared with infants whose first breastfeeding is delayed. Some hospital systems routinely separate newborns and their mother

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### ***Avoiding pacifiers and infant formula***

Offering bottles of infant formula or pacifiers to healthy breastfeeding babies adversely affect breastfeeding. Time spent sucking on a bottle of formula or a pacifier is time not spent sucking at your breast. The lack of stimulation and the decreased removal of milk from the breasts can delay the arrival of your full milk supply. In addition, the suck on a rubber bottle nipple is so much different than the suck at your breast that some babies become confused and only want the bottle. Exclusive breastfeeding is best for the baby, and, if this is your goal, be sure that hospital staff are aware you do not want the baby to receive any formula. Some parents put a sign on the baby's crib saying "Only breast milk for me!", to be sure the baby is not "accidentally" given anything else during the hospital stay. If, due to greater than 7% weight loss or other medical complications, supplementation becomes necessary, the baby can be cup or syringe fed in order to prevent confusion between the bottle nipple and the mother's breast.

### ***Avoiding hospital interference in the first several hours***

The first hours after birth are a marvelously sensitive window of time for the amazing newborn. Ideally, the baby, mother and father should be left alone in this time period to get to know each other. Of the newborn procedures, only the assignment of an APGAR score is time dependent, and this can be done with the baby skin-to-skin on the mother's abdomen. Weight, length, and head circumference measurements can be taken at any time. Most states have public health mandates to protect newborns against two conditions: gonorrhea and Vitamin K deficiency. In hospital lingo, this is known as "eyes and thighs." "Eyes" refers to the eye ointment that protects against gonorrheal diseases; "thighs" refers to the shot of Vitamin K given to protect against bleeding in the brain. In Massachusetts, "eyes and thighs" can be administered at any time during the *first two hours of life*.

### ***What is an APGAR score?***

The newborn baby receives an APGAR score at one and five minutes of life; sometimes a 10 minutes score is also assessed. The scores communicate how things went for the baby during the transition period. The transition period refers to the first minutes of life when the baby has to adapt to living outside the womb. "9 and 10" is a common score. A baby's "APGAR" is determined by five criteria, with a maximum of two points assigned for each category:

<u>Score</u>	<u>0</u>	<u>1</u>	<u>2</u>
Appearance (color)	Blue, pale	Extremities blue	Completely pink
Pulse (heart rate)	Absent	<100	>100
Grimace	No response	Grimace	Cough, sneeze
Activity (tone)	Limp	Some flexion of ext	Active motion
Respiratory effort	Absent, irreg	Slow, crying	Good

### ***Breastfeeding is analgesic***

A recent study found that breastfeeding can act as an analgesic (a pain killer) when newborns are undergoing a blood draw by sticking the heel. This is often done to collect blood for mandated tests screening infants for severe but treatable diseases and conditions. Crying and grimacing was essentially eliminated in breastfeeding babies undergoing heel sticks, and breastfeeding

prevented the marked increase in heart rate that normally happens during the 'heel lance' procedure. Because of these findings, mothers should be offered the chance to breastfeed their newborns during the heel stick procedure. If your physician is not aware of these findings, refer him or her to the publication: Gray L, Miller LW, Philipp BL, Blass EM. Breastfeeding is analgesic in healthy newborns. *Pediatrics* 2002;109(4):590-3.

### ***Diaper discharge bags***

In the US in 2007, 94% of maternity facilities offered diaper bags made by infant formula companies to new mothers when they left the hospital. 94%! These bags look like a pretty gift for the new family. In reality, they are clever marketing techniques used by formula companies who want mom to choose their brand of formula. Distributing the diaper bag via the hospital also adds the health care provider's apparent 'seal of approval' to the product. Distribution of formula company bags – even when the formula is removed – undermines breastfeeding success. Four major studies show that women who take home these products are less likely to breastfeed exclusively than women who do not take home the bags. Our hospital, Boston Medical Center, does not give out these bags because numerous studies have shown that they are detrimental to breastfeeding success.

### ***Baby-Friendly™***

Hospital systems and policies can support or obstruct breastfeeding. Baby-Friendly is a WHO/UNICEF award that recognizes a hospital environment that is supportive of breastfeeding based on the "Ten Steps to Successful Breastfeeding." Since the start of the Baby-Friendly Hospital Initiative, 19,250 hospitals have received the award worldwide. As of 2009, only 75 out of 3,500 hospitals in the United States hold the title (about 2%).

### **The Ten Steps to Successful Breastfeeding**

Every facility providing maternity services and care for newborn infants should:

1. Have a written breastfeeding policy that is routinely communicated to all health care staff.
2. Train all health care staff in skills necessary to implement this policy.
3. Inform all pregnant women about the benefits and management of breastfeeding.
4. Help mothers initiate breastfeeding within one hour of birth.
5. Show mothers how to breastfeed and how to maintain lactation even if they should be separated from their infants.

## Under the Microscope: Drop of Formula Compared to Drop of Breast Milk

A drop of formula

A drop of breast milk:

-White blood cells protect against infection

-Fat globules help eyes and brain grow faster





## What to Expect: The First Few Days

### ***Weight***

All new infants lose weight during their first few days of life, whether breastfed or formula-fed, because they are born with an abundance of fluid. The exclusively breastfed infant normally loses up to 7% of birth weight. When mom's milk fully comes in, on about day three, the baby begins to regain weight. Ideally, infants should return to birth weight by 7-10 days of life. Breastfed babies gain weight rapidly once mother's milk arrives, often ½-1 oz per day.

### ***Colostrum***

The most common reason that women stop breastfeeding in the hospital setting is because *they think they do not have enough milk*. In fact, if breastfeeding is managed well, inadequate milk supply is rare. Initially, the breast produces **colostrum**, nicknamed "liquid gold" due to its tremendous nutritional and protective value. Colostrum is a clear or yellow, sometimes sticky fluid. It contains abundant amounts of protein, especially an immunoglobulin called secretory IgA, and white blood cells, which act as the infant's first immunization. It also has a laxative effect that helps move stool out of the body.

Think of colostrum like strong perfume...one drop is plenty! A new mother will make about 3 tablespoons of milk on day one after birth, 13 tablespoons on day two, and abundant amounts when the milk "comes in" on days two to four. This is just the right amount for your new infant, whose stomach is only the size of his/her fist. Being able to measure how much the baby is eating may comfort new parents, but a one-day old baby given four ounces of formula at a feeding will promptly spit a lot back up. The mother can trust her body to make the correct amount of milk for the baby. Small, frequent breast milk feeds are far more valuable to the baby than any formula.

### ***Colostrum is your baby's first immunization.***

Colostrum is strong stuff. It contains living cells and fat globules that are not found in formula.

### ***Plumbing***

How often should a newborn urinate? A newborn infant should pee *at least once on day one* and *at least twice on day two*, and then more often as mom's milk comes in. However, super absorbent diapers can make it difficult to actually tally urinations.

What can a new family watch if the infant's weight initially decreases and pee is hard to count? It is best to keep an eye on your baby's poops (stool, bowel movements). The normal stooling sequence is:

Day 1-2: meconium stool --- black, thick, sticky, tarry

Day 2-4: transition stool --- darkish green, looser than meconium, like mud pie filling

Day 3 and on: breast milk stool--- mustard-yellow and seedy, very loose, runny, often passed with every feed. It is a good indicator that mom's milk is in when the color of stool changes to yellow. Once mom's milk is in, baby should pass three or more breast milk stools in 24 hours, often they may pass a poop with every feed.

### ***It's time to make the milk***

How does the mother's system know to make the milk? Her body is primed during pregnancy and the "GO" signal occurs when the baby is born and the entire placenta is passed. Then, when the baby suckles at the breast and stimulates the nipple, more "GO" signals are sent to the pituitary gland in the brain to release two hormones, prolactin and oxytocin. Prolactin is responsible for milk production; oxytocin is responsible for the let down of milk. Oxytocin is also known as the "love" or "bonding" hormone. Putting the baby to breast frequently signals the mother's brain and body to make milk and allows the full milk supply to *arrive as soon as possible*.

### ***Babies can't tell the time***

When should a baby be put to the breast? Not long ago, standard practice was to feed a baby on a rigid schedule like every three hours around the clock. In retrospect this was an illogical practice that allowed hospital staff to control their environment. We now know that infants should be fed by their internal clocks, not by ours. Babytalk signs for I'm hungry include:

- Hand to mouth activity;
- Smacking lips; and
- Movement of extremities.

If you see these signs, called feeding cues, put the baby onto the breast. To watch for feeding cues, mom needs to have her baby in the room with her, which is why rooming in is recommended. Crying is a late indicator of hunger in the newborn.

### ***The latch***

"The latch" describes the way the infant takes the breast and transfers milk from the breast into the mouth: A GOOD LATCH IS CRUCIAL TO BREASTFEEDING SUCCESS! It prevents sore nipples in the mother (the #2 reason women quit breastfeeding), ensures sufficient milk transfer, and provides enough stimulation to the nipple/breast for plentiful, continued milk production.

There are many different ways to hold the baby when breastfeeding, they include **the cradle hold, the football hold, and in the side lying position**. Most women naturally use the "cradle hold", with the baby cradled in the mother's arms, facing her, so a straight line could pass from the infant's ear through the shoulder and hip. Baby and mother are positioned tummy-to-tummy, nipple to nose. To prevent a sore back, bring the baby to you, not your breast to the baby.

Babies born via cesarean-birth are often held in the "football-hold", at the mother's side, with the feet tucked under her arm, to avoid pressure on the mother's abdominal sutures.

For the "sidelying position", mother and infant lie together side-by-side, again, tummy-to-tummy, together in bed.

The key to avoiding pain and ensuring maximum milk transfer is for the baby to take as much of the breast as possible into the mouth. In this way the nipple is protected in the back of the mouth. The tongue should always be below the nipple.

The mother can hold her breast in a “C-hold”, with four fingers below and the thumb above the breast, away from the nipple, to offer maximum support of the breast, and to ensure that the fingers do not get in the infant’s way during latch on. Stroking the center of the baby’s face with the nipple will elicit the rooting reflex. When the infant gapes or opens the mouth widely, the mother should pull the baby quickly onto the breast. The infant should be encouraged to take a full mouthful of breast tissue, as if the baby were about to eat a Big Mac™ Sandwich. Do not have the baby just grab onto the tip of the nipple.

Health professional staff should be evaluating the latch while you are in the hospital. Ask them to look! Signs of a successful latch include:

- Flanged out fish lips;
- No clicking sounds;
- Puffed out cheeks;
- Rhythmical jaw movement (suck, suck, swallow);
- Lack of pain in the mother; and

Audible swallowing in the baby – gulp, gulp (more obvious when the milk “comes in”)

Staff should evaluate the latch every shift. At BMC we use the LATCH tool to communicate information about the latch. Each letter stands for criteria to be scored. Like the APGAR score, each criteria may receive a 0, 1, or 2. Thus, a perfect LATCH score is a 10. LATCH stands for:

L: Latch (lips flanged out, no audible clicks, no indents in the cheeks gets 2 points)

A: Audible swallow

T: Type of nipple (everted gets 2 points, flat 1 point, inverted 0 points)

C: Comfort of mother (no pain gets 2 points)

H: Hold (good positioning gets 2 points)

## **Heading home**

As you head for home, knowing what to expect will improve your chances of breastfeeding success and decrease the likelihood of any medical complications:

1. The baby should be put to breast at least 8-12 times in 24 hours.
2. The baby should pass 3 or more bowel movements in 24 hours.
3. The baby should have 6 or more wet diapers in 24 hours.
4. The baby should be hungry and demanding, not sleepy and quiet.
5. You should have information about breastfeeding support groups or a telephone support line to call when you are home. When families leave Boston Medical Center, information about the breastfeeding telephone support line, 617-414-MILK, is provided in several ways: by verbal instruction, on the crib card, and on several items in the baby discharge bag (water bottle, refrigerator magnet, pens).
6. A clinician should see the baby at 3-5 days of life primarily to check the weight, the latch and the baby’s color.

Tip/If you could pick the three most important things to work on, what would they be?

1. To breast in the first hour.
2. The breasts need to be emptied frequently the first 7-10 days. If you and your baby are separated, get pumping (every three hours for 15 minutes each time).
3. Avoid bottles until breastfeeding is well established.

## Cheat Sheet: What to Expect

Expect the first week to be hard (especially the 2nd day). After the first week, breastfeeding becomes much easier. Try to take this new journey one day at a time. Babies normally lose weight during the first days of life; up to 7% weight loss is normal. You may think you're not making enough milk; actually your body will naturally make the perfect amount!

- On day 1, you will make 3 Tablespoons of milk;
- On day 2, you will make 13 Tablespoons of milk; and
- Around day 3, you will make a lot of milk (when your full milk "comes in").

Your body is set up to make the perfect amount of breast milk. Early on, your baby's stomach is only the size of his/her fist so it cannot hold a lot of liquid all at once. Studies show a baby's stomach can hold: 7cc/feed (0-24 hrs), 14 cc/feed (24-48 hrs), 34 cc/feed (48-72 hrs). When a baby is overfed, the only place the extra liquid can go is out – through the mouth and the nose. In addition, too much food stuffs the baby and decreases feeding cues.

The early breast milk you make is called colostrum. Colostrum is nicknamed 'liquid gold' because it contains so many good things.

Baby talk for "I'm hungry": 1) sucking on their fists/fingers; 2) smacking their lips; 3) eyes open and arms and legs moving around. When you see these signals, called feeding cues, it's time to eat! Crying may be a late indicator of hunger.

Keep your baby right next to you, in your room, so you can watch for the feeding cues.

There are many different ways to hold your baby. The classic way is to hold your baby 'tummy to tummy', 'nipple to nose', so your baby is lined up so you could pass a ruler from your baby's ear-to-shoulder-to-hip.

The latch is the way your baby sucks on your breast to get the milk into the stomach.

For a good latch, tickle the middle of your baby's face with your nipple. Then wait until he/she opens his/her mouth as wide as possible, and put as much breast as possible into the mouth.

Ask hospital staff to check your latch.

As your milk comes in your baby's bowel movements will change from thick, sticky black stools to pudding-like, dark brown stools to loose, somewhat chunky yellow/green stools. The yellow/green stools are normal, breastfeeding stools which indicate that a lot of milk is coming in.

How often should your baby eat? Babies cluster feed; they don't feed on a regular schedule. They may eat and eat and eat and then rest and then eat and then rest and then eat, rest, eat... When you go home, your baby should eat at least 8-12 times in 24 hours and poop at least 3 times in 24 hours.

Your pediatrician will want to see your baby at 3-5 days of life to check weight, latch, color. Avoid pacifiers until breastfeeding is going well (for about 2-3 weeks)

For the first month of life, if you can, avoid using a bottle. Why? The suck at the breast is a wide-open mouth suck; the suck on a bottle nipple is a small-mouth suck. A lot of formula comes out fast when a baby drinks from a bottle -- this is not how breast milk comes from the breast. Thus babies get confused and may not be able to do both right away. Once the baby gets breastfeeding down, they can always bottle feed.

Trust yourself. The first week often is tough but you can do it! Ask for help.

## It's All About the First Week

Breastfeeding happens or doesn't happen during the first week of life. What happens in the hospital has a significant impact on whether the mother and baby will go on to be successful with breastfeeding. What happens in the hospital teaches a baby how to latch and also affects how much milk the mother will make. It's all about the latch and its all about the milk production. We made a Question and Answer sheet to teach our hospital staff and are happy to share it with you!

### **Q: How much liquid can a newborn infant's stomach handle at one time?**

A: Several studies answered this question. Researchers found the newborn's stomach can hold 7 cc per feed in the first 0-24 hours, 14 cc per feed from 24-48 hours, and 34 cc per feed on the third day of life. The mother matches this by making a total of 3 Tablespoons (50cc) of colostrum on the first day of life, 13 Tablespoons of colostrum (250cc) on the second day of life, and lots of milk on the third day of life (when lactogenesis stage II kicks in) and up to 500 cc by day 5. So when we feed a 12-hour-old newborn baby 1 ½ oz (45cc) of formula, the baby's stomach cannot hold that large amount of food. When a newborn is overfed, you may notice formula coming back up the mouth, dribbling from the corners as well as coming out the nose. In addition, this shuts down feeding cues.

### **Q: Are the suck at the breast nipple and the suck on a bottle rubber nipple the same?**

A: No. No. No.

The breastfeeding suck is a wide open mouth suck; the bottle nipple suck is a narrow mouth suck.

In breastfeeding, the baby must place his tongue beneath the breast tissue and use it to create the 'vacuum' needed for nursing and to pump (squeeze) and swallow the milk. In bottle feeding, the baby must place his tongue in front of the nipple and uses it to stop the flow of milk while he swallows.

In breastfeeding, the baby removes milk from the breast by a combination of sucking and pumping the milk from the milk ducts. When the baby stops sucking and pumping, the milk stops flowing.

In bottle feeding, the milk flows fairly readily from the nipple once an initial suction is created and then the baby simply controls the flow by placing his tongue over the hole(s) in the nipple.

So you can see that the sucks are quite different. A brand-new baby is learning how to do this...some babies can handle the different sucks but some cant, get confused, and will always prefer the bottle suck.

### **Q: Why do babies prefer the bottle suck?**

A: The answer to this question involves the flow and rate of the liquid. When a baby drinks from a bottle nipple, the liquid comes in quickly and also in a large volume. Babies fill up with much more liquid than the stomach is meant to hold – causing two problems – spitting up and shutting down the feeding cues because the baby is overfed. The dynamics are different when

the baby drinks from the breast -- the baby has to suck a bit to get the let down to occur (ie, the liquid comes in slower), and then as noted above the volume is limited due how much the newborn stomach is made to hold at various time periods.

**Q: I have read a lot about the importance of emptying breasts of breast milk in the early weeks of life – what is that all about?**

A: New research is showing that breastfeeding is much more complicated than the simple explanation we all learned – that prolactin makes the milk and oxytocin squeezes the milk out. For starters, a **Lactation Inhibition Factor** has been identified. This is a small whey protein found in milk and if it sits and accumulates in the breast it shuts down milk production. If breasts are emptied on a regular basis, milk continues to be made. Also, there is the new **Prolactin Receptor Theory** that states that in the first few weeks of life, prolactin receptors are being set up and activated– if breasts are emptied, more and more are set up and activated. If breasts are full of milk, the prolactin receptors get stretched and don't work quite right and fewer are set up – so down the line milk production will be decreased. This explains why a formula-feeding mother can come in at 2 weeks and state she wants to breastfeed – and has a rough time with milk production – because her prolactin receptors were not set up properly in the first two weeks. When babies are fed formula – feeding cues shut down and breasts are not emptied. The bottom line is to avoid the bottle nipple at all costs and empty the breasts, empty the breasts, empty the breasts.

**Q: Bottom line?**

A: Avoid bottle nipples until breastfeeding is well established (3 weeks or so). If, for some reason, your baby needs supplementation early on – then get pumping right away (every three hours, for 10-15 minutes a time, double set up electric breast pump), and feed the expressed breast milk to the baby with anything other than the bottle nipple (like cup, syringe, spoon...)







## **Human Milk and Infant Formula are not the Same**

### ***More information about some of the research***

#### ***Ear infections***

In a study of over 1000 infants, formula fed babies had 50% more ear infections in the first year of life than infants who breastfed exclusively for four months or more. The recurrent otitis media rate in infants exclusively breastfed for 6 months or more was 10%, compared to a rate of 20.5% among infants who breastfed for less than 4 months.

#### ***Episodes of diarrhea***

Many studies have found a significant reduction in diarrhea among breastfed babies. A study in Egypt found that infants who began breastfeeding early had a 26% lower rate of diarrhea than those who began later, which the authors hypothesized was due to the healthful effects of human colostrum. In a population-based case-control study of infant mortality in Brazil, infants who were not breastfed had a 14.2 times higher risk of death from diarrheal infections than exclusively breastfed babies.

#### ***Protection against asthma and wheezing***

Formula-fed infants have higher rates of asthma and wheezing. One study followed 453 children

### ***Effect on cognitive development***

Breastfeeding has also been shown to enhance cognitive development, and to raise IQ scores in term infants, premature infants, and babies born 'small for gestational age' (SGA) (at term, but smaller than would be expected considering their gestational age). A recent study on 'SGA' babies followed over 500 children for five years and found that children who were born SGA and breastfed exclusively for 24 weeks had an 11 point IQ advantage over SGA infants who were only breastfed for 12 weeks.

### ***Benefits to the mother***

In the short term, breastfeeding increases oxytocin levels, which leads to more rapid uterine involution and less postpartum bleeding. Women who breastfeed decrease their risks of endometrial cancer, ovarian cancer, and breast cancer. A recent case-control hospital study, consisting of 400 women in each group, found that rural Chinese women who breastfed for two or more years had 54% less risk of developing breast cancer. In addition to these health benefits, women who breastfeed benefit from a close bond with their infant, and breastfeeding can lead to increased self-esteem.

## Breast Pumps

Swedish scientist Einar Egnell pioneered the electric breast pump in the 1950s, basing his early designs on cattle milking pumps. Today, breast pumps come in a vast array of models, sizes, and capabilities. The most effective pumps are the large electric models, which have adjustable speed and suction levels, pump both breasts simultaneously and, like the infant, 'suck' then pause, in an automatic cycle. The vast majority of pumps at the lower end of the market do not generate an effective enough combination of negative pressure and 'sucking cycles' per minute to maintain a milk supply for a woman who is spending significant amounts of time away from her baby (for example, the mother of an infant in the Neonatal Intensive Care Unit). Types of pumps which fall into this 'occasional use only' category include most hand pumps; small, battery-operated pumps which pump only one breast at a time, and small electric pumps which pump only one breast at a time. Even though small pumps can be expensive, there is tremendous variation from one model to the next in terms of efficiency, comfort level, ease with which the product can be cleaned, and durability. Currently in the United States no legislation exists to set minimum standards for quality among breast pump manufacturers. The Breast Pump Safety Act, (H.R. 3372) recently introduced to the US Congress by congresswoman Carolyn B Maloney, would require the FDA to develop minimum quality standards for breast pumps to ensure that products on the market are safe and effective.

Before a family invests in a breast pump, and before the clinician recommends a specific type of breast pump, the mother's needs should be carefully assessed. A high quality pump should mimic the infant's sucking capacity, which can reach a maximum negative pressure of approximately 220 mm Hg.<sup>1</sup> At the same time, it should mimic the infant's sucking frequency and generate approximately 50 'suck and pause' cycles per minute. Some small pumps, such as the infant bulb, are available on the market, but they are not designed to provide the same level of suction as a breast pump.

pressure 250 mm Hg) or Medela's *Lactina* (maximum negative pressure 240 mm Hg); again sucking cycles are in the 50 per minute range. The *Elite* and the *Lactina* are the pumps most commonly rented by mothers of infants in the Neonatal Intensive Care Unit, or by women returning to work. If the infant is hospitalized, many insurance companies will pay for electric breast pump rental. Rental fees vary from \$75 per month to \$30 per month depending on the length of the rental (a prepaid six month rental may work out at around \$30 per month but a one month rental may cost around \$75). The milk collection kit, a separate item consisting of collection bottles, tubing, and breast flanges, costs around \$50.

The next tier of pumps, again made by the same companies, are the relatively new 'personal use pumps', which have begun to replace rental pumps in many situations. Medela's *Pump in Style* (maximum negative pressure 220 mm Hg; up to 63 cycles per minute) retails for around \$275, and Hollister's *Purely Yours* (maximum negative pressure 215 mm Hg; up to 60 cycles per minute) retails for around \$225. Most lactation consultants cite clinical experience and opt for the more expensive models when working with women who are separated from their infants for long periods of time. Despite this, no research exists to demonstrate that the *Classic*, *SMB*, *Lactina* or *Elite* are any more effective in establishing a milk supply than the *Pump in Style* or the *Purely Yours*. Apart from the minimal difference in pressure levels, the main distinction appears to lie in the durability of the motor and the length of the manufacturer's warranty. In many cases, especially among mothers returning to work, the personal use pumps will be adequate for creating and maintaining a milk supply.

Breast Pump manufacturers:

**Hollister Inc.**  
**2000 Hollister Dr.**  
**Libertyville, IL 60048**  
**Tel. 800/323-4060**

**Medela Inc.**  
**P.O. Box 660**  
**McHenry, IL 60051**  
**Tel: 888/633-3528**  
[www.medela.com](http://www.medela.com)

## **Breast Milk Storage Guidelines for Healthy Infants**

### **The Rule of 5's**

Breast milk can be stored in:

Room temperature    for    5 hours

A refrigerator        for    5 days

A freezer              for    5 months

### **Breast Milk Storage Tips**

1. Many women use disposable plastic bottle

for the baby. Place the newest milk in the back of the pile in the freezer and move older milk to the front.

9. Frozen breast milk can be defrosted in several ways. Frozen milk placed in a refrigerator will thaw in 12 hours. Frozen milk will also thaw when placed on the counter at room temperature. Placing it in a container of tepid water or running it under warm tap water will speed up the thawing process and also warm it up. However, do not microwave breast milk because it heats up unevenly and may cause a burn.
10. The fat in breast milk rises to the top so it may appear layered; swirl the milk to mix it before feeding. Breast milk may acquire tinges of color depending on mom's diet; it remains perfectly good to use. Some complain that defrosted breast milk smells 'sour/soapy/fishy.' Lactation specialists are not clear why this occurs but in most cases the milk can be used.
11. What does one do about a breastfeeding baby who refuses to drink from a bottle? This is a common and frustrating problem because exclusively breastfed infants may develop a strong preference for the breast and just refuse to take a bottle. This makes parents feel even more dubious about returning to work and leaving their infant. Solutions for one infant may not work for another, so offer a lot of ideas. Someone other than the mother can attempt to feed the infant breast milk from the bottle. This may work best when the baby is sleepy – with the mother out of sight. Another idea is to offer the breast milk in a different container than a bottle. An infant 4 months of age or older can be offered breast milk in a cup with a lid; for a younger infant try a small clear flexible medicine cup, syringe or spoon. Introducing a bottle of expressed breast milk each day when the infant is about one month of age can help to avoid this problem.





consultant or your child's physician and suggest he/she refer to Medications and Mothers' Milk by Thomas Hale. Hale's book contains the most up-to-date research and drug information specifically related to breastfeeding. Another good resource is Lactmed.com. Taking the extra step and using this important resource may save you and your baby from an unnecessary (and sometimes irrevocable) disruption in your breastfeeding relationship.

***“I had a glass of wine with dinner. Do I have to pump my milk and dump it out for the next few feeds?”***

The American Academy of Pediatrics considers maternal consumption of small amounts of alcohol compatible with breastfeeding. Occasional drinking has not been found to be harmful to the nursing baby. Feed the baby and then have a