

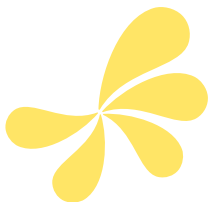
# Breastmilk Feeding Information Guide

*No. 1 choice  
of hospitals  
& mothers*



## Congratulations on the upcoming or recent birth of your baby!

This is both an exciting and busy time, and there is a seemingly endless list of things to think about. We at Medela understand it can all seem a little overwhelming. That's why we prepared this informational booklet to help you prepare for bringing home your baby, and to provide insights on what to expect once you get home.



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# Getting ready for baby

## Writing a Birth Plan

A birth plan is just what it sounds like: a plan you create that describes how you would like your ideal birthing experience to proceed. It is a way for you and your partner to communicate your wishes about labour and delivery with your healthcare team. It is also a way for you and your partner to visualize labour and delivery in advance so you can plan strategies for how to handle the unexpected.

When you're developing your birth plan, try to remember that it is not written in stone. Things do not always go according to plan, and the main objective is that you and your baby are healthy at the end of the day.



## **A birth plan usually touches on a number of key questions**

### **I Who will be with you?**

You and your partner may be the only ones in the room, beyond your healthcare team. Or you might want to have a close friend or family member, or even a doula present to help out.

### **I Where will you be?**

Are you planning to give birth in a hospital, or will you need to set up your home for the delivery if you've chosen a home birth.

### **I How do you want to manage labour?**

There are many tools at your disposal to help you manage your labour such as: taking a shower or bath, using an exercise ball, listening to music. This would be a good time to decide if you want to bring a camera or video camera as well.

### **I What types of pain management do you want to try?**

At what stage will you want to take advantage of available pain management strategies, including medications, and which ones will you consider?

## I How do you want to feed your baby?

- If you want to breastfeed your baby, you will need to start breastfeeding almost as soon as your baby is born. If for some reason your baby cannot breastfeed right at birth, but you want to feed your baby breastmilk, then you will need to start breastpumping shortly after birth.
- WHO (World Health Organization) recommends that your baby receive breastmilk exclusively for the first 6 months of his or her life and that your baby should continue to receive breastmilk for the first 2 years of his or her life.

## I What about unexpected situations?

Consider the possibilities of needing a caesarean, forceps, vacuum, etc. Think about ways you would like to deal with these situations if they arise.

Once you have developed your birth plan, share your thoughts with your healthcare team. Make sure that they are prepared to support your wishes. You may also want to speak with other mums who have delivered at your hospital to gain insight into their experiences. If you are concerned that you will not be fully supported in any aspect of your birth plan, this is the time to come up with ways to shore up support in advance.

## Preparing Your Home

**In the months before you bring baby home, there will be plenty of time to get your home ready. Here's a list of some of the things you will need to prepare ahead of time**

### I Setting up the nursery

- The essentials include a crib, change table and dresser. Also consider getting a nice comfortable chair where you can sit and feed baby.
- Stock up on important layette items such as diapers (cloth or disposable), bodysuits, blankets, bra pads and other essentials.
- Consider getting a breastfeeding pillow.

### I Getting baby gear

- “Must haves” for many mothers in this category include a stroller, car seat, and breast pump. But beyond that, look to friends who have kids to find out what really helped them the most.

### I Cooking and cleaning

- For several weeks after baby comes home, there will be little time for things like cooking nutritious meals and deep cleaning your house. Try to get some meals made ahead of time and put them in the freezer. And ask friends and family to help out with household chores like doing laundry, cleaning up, or providing extra meals when possible.

### I Clothing

- Ensure you have enough breastfeeding/nursing bras and that your clothing and nightwear facilitates breastfeeding.
- Breastfeeding cape (optional).

## What you will need at the Hospital

A few weeks before your due date, be sure to prepare your hospital bag.

### **At a minimum, your bag should include**

- I A pair of pyjamas or nightgown that are nursing friendly
- I A change of comfortable clothes – e.g. stretchy yoga pants
- I One or two nursing bras (check [www.bravadodesigns.com](http://www.bravadodesigns.com) for more information on nursing bras)
- I Nursing pads
- I Toiletries (e.g. toothbrush, toothpaste, shampoo, soap, deodorant, brush)
- I Sanitary pads
- I Slippers and socks
- I Underwear
- I New born diapers and wipes
- I Pyjamas for baby

Try to arrange a visit to the labour and delivery ward at your hospital in advance; this will give you a chance to familiarize yourself with the facilities and help you plan. It also allows you to find out about the philosophy of your hospital when it comes to the care of mums and newborn. In most hospitals healthy full-term babies stay in the room with mum. But every hospital will have its own policies around visitors, whether



your partner can stay in the room overnight, or other situations. Some hospitals may also have private or semi-private rooms available that you can request (though this may involve an additional fee).

### **Important questions to ask about their policies around breastfeeding**

- I Do they support breastfeeding?
- I Do they have a lactation consultant on staff?
- I Is the nursing staff supportive of breastfeeding and knowledgeable?
- I Are they a Baby-Friendly Hospital?

### **Baby-Friendly Hospital Initiative**

In 1991, UNICEF and the World Health Organization (WHO) launched the Baby-Friendly Hospital Initiative (BFHI) to implement practices that protect, promote and support breastfeeding. The BFHI includes tools and materials to help teach maternity staff about how to support breastfeeding mothers and evaluate outcomes. The initiative has been implemented in more than 150 countries around the world and has made a measurable impact on the number of babies who are exclusively breastfed for the first six months.<sup>1</sup>

# Your newborn

## Human babies are unique

When you compare a human baby with other mammals, some very distinct differences become apparent.

First of all, human babies are one of the only mammals that are completely helpless after birth. If you have ever seen a calf being born, you know that they are on their feet within minutes of birth, nudged on by their impatient mother. Also unlike most mammals, we spend our first 6 to 9 months after birth almost completely immobile and do not walk until about a year of age on average.

The reason for this lies in the large size of a human baby's brain at birth, compared with the relatively small birth canal through which he must pass. Humans are unique in the way our brains grow after birth. Other mammals' brains grow rapidly in utero and slow down considerably after birth. But human babies' brains keep growing at the same rate for another year after birth.

In other words, when looking at nature and the rest of the animal kingdom, it could be argued that humans are actually born a year too early <sup>2</sup>

Due to the large size of the mature human brain and the small size of the birth canal, from a development standpoint, human babies are born much earlier than other mammals so that they can pass through the birth canal.



## Understanding newborn reflexes

Your infant is born with a number of reflexes that will eventually disappear, but will help him survive immediately after birth. It's helpful to understand that infants are born with these pre-programmed reflexes so you can better understand your infant's needs.

- I Rooting reflex: Stroke a baby's cheek gently with your finger and he will more than likely turn his head towards your finger and start making a sucking motion with his mouth.
- I Tongue thrust reflex: While the tongue thrust or "extrusion reflex" is present, if a baby's lips are touched, his tongue automatically moves forward. Tongue thrust aids with feeding from the breast or bottle but not solid foods. This reflex begins to fade as early as 3 or 4 months of age, but for some babies it will remain active for longer. While active, if solid foods are offered it appears baby is pushing the food out of his mouth with his tongue. This reflex is often mistaken as dislike of food. Although this is not the case, a tongue thrust is a sign that baby is not yet ready to eat solid foods.
- I Hand-to-mouth reflex: Babies also have a hand-to-mouth reflex that goes with the rooting and sucking reflexes. This reflex may be set off by either stroking your baby's cheek or the palm of his hand. The stroking causes your baby to root, his arm to flex and bring his hand to his mouth. Sucking on fingers or hand is often mistaken as a sign of hunger, but should only be regarded as a reflex to practice sucking and self-comforting.

- I Moro reflex: The Moro reflex is an automatic response that occurs if your baby suddenly feels as if he is falling, if he hears a loud noise, or something else surprises him. He will throw his arms out to the side, then pull them into his body and often start crying. This can seem quite dramatic and can be a distressing thing to see as a parent, but be rest assured that it is a sign that everything is working properly with your baby.
- I Step reflex: Long before your baby can walk on his own, he will make a stepping motion with his legs when his feet touch something hard.
- I Grasp reflex: Placing your finger into the palm of baby's hand will make him grasp your finger with a firmness that will surprise you. In fact, with both of his hands holding onto a finger you will almost be able to lift him up.



# The breastmilk feeding advantage

At Medela, we are always pleased when another family decides to feed breastmilk to their baby, which is why we would like to offer our support in any way we can.

We hope that the information you find here will help answer some of your questions, alleviate concerns, point you in the right direction for more information in case you need it and help you and your family have the best breastmilk feeding experience possible.

## Brain development & breastmilk

One of the ways that human babies are able to maintain rapid brain growth – which requires a lot of energy – is due to the length of time they receive breastmilk. One study looking at 128 different mammal species concluded that the longer an animal's pregnancy and the longer it received breastmilk, the larger the animal's brain<sup>3</sup>. Since the length of human pregnancy is not exceptionally long, we need to make up that difference by ensuring that babies receive breastmilk for as long as possible.

## The breastfeeding instinct

While your baby is still in utero, he is getting all of his required energy directly from you through the umbilical cord and amniotic fluid. This helps to develop your baby's gastrointestinal tract<sup>4,5</sup> and his sense of taste and smell<sup>6</sup>. It even seems to prepare your baby to be more accepting of breastmilk at birth<sup>7</sup>. Your baby is also practicing sucking by sucking on his fingers, hands<sup>8</sup>.

Immediately after birth, your baby will instinctively seek your nipple. Coined the “Breastfeeding Crawl”, every new born, when placed on the mother’s abdomen, has the ability to find his mother’s breast and to decide when to take the first breastfeed<sup>9</sup>.



## Why breastfeed or feed breastmilk?

Beyond the many health benefits of breastfeeding, you will find it helps solidify the special, unique bond that you and your baby are establishing. Breastmilk is also the perfect nutrition for your baby. It provides exactly the right mix of nutrients and protective antibodies that your baby needs while constantly changing to respond to the growth, nutritional and immunological requirements of your growing child for as long as you continue to provide him breastmilk. There are life-long health benefits for both you and your child that can be linked back to breastfeeding and breastmilk feeding.

## Why your baby needs breastmilk for the first 2 years

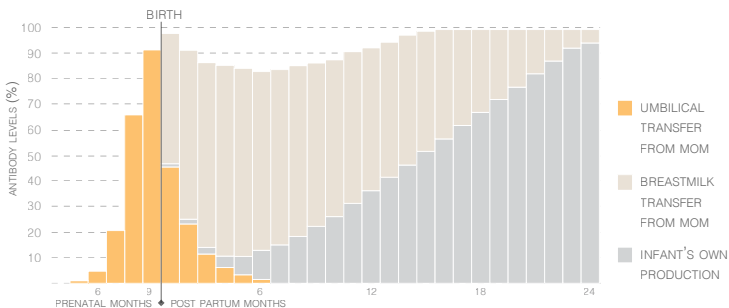
When your baby is born, there are a number of areas that are still very underdeveloped. One vital area is your baby's immune system. Your baby's immune system will continue to develop and mature over the first 10+ years of his life. But during the first 12 to 24 months, he will rely almost exclusively on your breastmilk for the immune protection he needs. This is also one of the reasons why it is so important to ensure your baby follows your healthcare practitioner's vaccination schedule.



## I Antibodies

A part of the immune system that helps identify and neutralize foreign substances like bacteria and viruses. A healthy term baby at birth will have similar antibody levels as his mum, as some antibodies are transferred through the placenta. However, antibodies have a half-life of around 30 days, which means that around every 30 days, the amount of antibodies in your baby's blood decreases by 50% unless they are replaced by new ones.

- Your baby's immune system will not produce sufficient antibodies to protect him for the first 12 to 24 months of his life
- Without a constant new supply of antibodies coming from your breastmilk, your baby's antibody levels will drop to critically low levels by 3 to 6 months until around 24 months when his immune cells will be sufficiently mature that they can provide the antibody production that can meet most of his needs





## I Leukocytes

The active cells of the immune system that we know as the “white blood cells”. Your baby’s leukocytes will reach maturity at different stages, but for the most part, it will be a good year before they are starting to function properly. Your leukocytes that are transferred to your baby through breastmilk will actually help fight off infections and help educate his immune system so that it functions more effectively.

There is a long list of other components found only in your breastmilk that will help protect your baby, and help your baby’s immune system to develop properly.

## Benefits of breastfeeding and breastmilk feeding for your baby

The following are some very compelling reasons why leading health organizations like WHO recommend breastmilk feeding exclusively for the first 6 months and continued feeding of breastmilk for your baby's first 2 years.

### 1. Nutritionally ideal for your newborn

- a. When your baby is first born, your body will produce a special type of milk called colostrum. Colostrum is highly concentrated, easily digested milk that contains everything your baby needs in a very small volume. In the first days after birth, the laxative effects of colostrum also play a key role in helping your baby pass his first stools, or meconium<sup>10</sup>.
- b. High in protein and low in fat, colostrum also provides a high concentration of antibodies from your body, which will help protect him from foreign substances. These antibodies enter your baby's bloodstream, protecting him from infections in the throat, lungs, and intestines. Germ-fighting white blood cells, or leukocytes, in colostrum also help protect your baby's system from bacteria and viruses<sup>11,12</sup>. The colostrum also coats and protects your baby's digestive tract to prevent germs from entering his system<sup>13</sup>.
- c. Colostrum helps lay down the building blocks for your baby's immune system and confers growth hormones essential to your baby's development. As your milk volume increases, colostrum gradually turns into mature milk, but does not disappear. Colostrum's same disease-fighting properties are still an important part of mature milk; they are just not as concentrated as they are in the first few days of your baby's life.

## 2. Perfect nutrition for your growing baby

- a. As your milk “comes in,” your milk will change into the nutrition that can exclusively nourish your baby for the first 6 months of his life. The complex combination of antibodies, fat, carbohydrates, proteins, stem cells, and other key nutrients that make up breastmilk is unique and fundamentally different from any infant formula available<sup>14</sup>.
- b. When you compare the ingredients in breastmilk with those found in infant formula, it may seem that the 2 are similar. After all, infant formula also includes fats, proteins, and carbohydrates, just as breastmilk does. However, it is not simply the amount of the overall categories of ingredients that is important, but also the:
  - I Bioavailability of the ingredients: Can your baby absorb the nutrients, or will they pass through his system undigested? Are the enzymes present in your baby’s gut able to help break down the nutrients so they can be absorbed?
  - II Specific mix within the category of the ingredients: Are the fats the right types of fats that your baby needs, or are they fats designed for another species’ needs? Are the proteins the right types of protein, or will they change the gastric emptying, pH and/or microflora in your baby’s stomach and gut?
  - III Is the iron present bound to lactoferrin so that it is more easily absorbed and not available to help pathogens replicate?
  - IV Secondary immunological functions of the contents: Do the prebiotics (oligosaccharides) also act as decoys by binding to pathogens and preventing them from bonding to the walls of your baby’s gut?

### 3. Long-term effect on your child's development

Research shows that breastfeeding has a lifelong impact on your child's health and development, long after you stop breastfeeding.

The benefits for children include the following:

- I Helps the immune system mature<sup>14,15</sup>
- I Reduces gastrointestinal illness by up to 82%<sup>13,16</sup>
- I Reduces respiratory illness by up to 30%<sup>17,18</sup>
- I Protects against chronic diseases, such as: celiac disease; inflammatory bowel disease; asthma; and childhood cancers<sup>16, 17, 19</sup>
- I Delays the onset of hereditary allergic disease and lowers the risk of developing allergic disease<sup>20</sup>
- I Improves neural development
- I Lowers the risk of developing malocclusion and other dental issues<sup>21,22, .23, .24</sup>
- I Lowers the risk/delays of early onset:
  - Obesity by up to 35%<sup>25,26, .27</sup>
  - Diabetes by up to 40%<sup>28,29</sup>
- I Reduces the risk of ear infections by up to 300%<sup>30</sup>



- | Reduces the risk of lymphoma by up to 800%<sup>31,32,33</sup>
- | Reduces the risk of Sudden Infant Death Syndrome (SIDS) by up to 500%<sup>34</sup>

## Benefits of breastfeeding or breastpumping for you and your family

Your baby isn't the only one who will benefit from your decision to breastmilk feed. There are a number of health benefits for mums who breastfeed or breastpump, including:

- | Lowered risk of:
  - Breast cancer by as much as 25%<sup>35</sup>
  - Ovarian cancer by as much as 20%<sup>36</sup>
  - Osteoporosis by as much as 400%<sup>37</sup>
  - Developing type 2 diabetes by as much as 15%<sup>38</sup>
  - Developing postpartum anxiety and depression<sup>39</sup>



- | Delayed return of menstrual cycle: Breastfeeding should not be used as a birth control method, but breastfeeding does impact on fertility and is nature's way of helping ensure a safe spacing between children<sup>40</sup>.
- | Faster return to pre-pregnancy weight<sup>41</sup>: Feeding your baby breastmilk can help you burn through over 500 calories per day. You'd need to run 8 km or walk 11 km every day to burn the equivalent amount of calories. In addition, breastfeeding or breastmilk feeding has several benefits beyond infant and maternal health:
- | Strong bonding between you and your infant
- | Lower household expenditures by avoiding the high cost of formula
  - Formula costs can run up to \$ 50/week, or \$ 2,500/year
- | Lower healthcare costs for you and society overall than for formula-fed infants

## The bioavailability of breastmilk

One of the differences between breastmilk and infant formula comes in your baby's ability to process these ingredients, which is known as the bioavailability of those nutrients. The more bioavailable an ingredient, the more of it is absorbed in the gut. Bioavailability is highly dependent on where the ingredients come from. Breastmilk is highly bioavailable to your baby which is one of the reasons why babies fed breastmilk do not need to consume as much as babies fed infant formula. To understand how the bioavailability of breastmilk differs from infant formula, let's examine some of the ingredients that are important to infant development and that are commonly added to infant formulas.

## I Iron

- Healthy term babies are born with large iron stores that can last for at least 6 months. That is why the recommended daily iron intake for infants under 6 months is just 0.27 mg/day<sup>42</sup>. After 6 months, iron requirements go up to 11 mg/day as an infant's iron reserves start to drop off.
- However, the small amount of iron needed in the first 6 months is easily absorbed from breastmilk. Nearly half (49%) of the iron in breastmilk is absorbed by the gut, compared with only 10% of iron in infant formulas. In order for infant formulas to achieve the same levels of daily intake, higher levels of iron must be added to the formulation in order to increase the amount the infant will absorb.
- Iron in breastmilk is bound to a protein called lactoferrin. This protein can more easily pass through the gut so that the iron within it can get into the baby's bloodstream where it is needed.
- Lactoferrin also prevents the iron within it from being freely available for use by pathogens. This is important because pathogens, like people, need iron to thrive/replicate and this prevents pathogens from accessing the free iron they need<sup>40</sup>.
- Even low-iron infant formulas can contain much more iron than an infant under 6 months of age really needs. That excess iron can put your baby at risk of constipation and gastrointestinal infections. Because the iron in formula is freely available, bad bacteria in the gut can easily access this iron to reproduce and grow<sup>43</sup>.
- After 6 months, your doctor might recommend adding an iron supplement of some kind, though infant cereals are often fortified with iron for this reason.

## I Fatty acids DHA and ARA

- DHA ( docosahexaenoic acid) and ARA (arachidonic acid) are long-chain polyunsaturated fatty acids. They are naturally present in breastmilk and have been identified as crucial nutrients in the development of an infant’s nerve cells, and especially their brain<sup>44</sup>. These fatty acids can be derived from non-human sources and are now often added to infant formulas, however, they are known to be less bioavailable, meaning less gets absorbed<sup>45</sup>. Recent research studies from the infant formula industry have shown that babies fed with DHA and ARA-fortified infant formula have verbal IQ scores lower than babies fed breastmilk<sup>46</sup>.
- It is important to remember that DHA and ARA are just 2 of many long-chain polyunsaturated fatty acids that are used in brain/ nerve cells.
  - $\alpha$ -Linolenic Acid (18:3) and Linoleic Acid (19:2): Essential fatty acids that cannot be synthesized in the human body; They are incorporated into the lipid bilayer as is, or often converted into DHA and ARA
  - Eicosenoic Acid (20:1): Involved in the proper functioning of the central nervous system
  - Nervonic Acid (24:1): Important component of myelin and sphingolipids

## I Lutein

- Lutein is an antioxidant carotenoid (i.e. from carrots and other vegetables) found in breastmilk that helps a baby’s eye development. Some formulas include this nutrient in their formulation. However, evidence shows that lutein in breastmilk is four times more bioavailable than lutein in formula<sup>47</sup>.



## I Prebiotics

- Breastmilk contains over 130 different oligosaccharides (HMOs), known as prebiotics, that help stimulate the growth of beneficial bacteria in the gastrointestinal tract while also offering immunological protection from pathogenic bacteria and viruses<sup>48</sup>.
- Current infant formulas may be supplemented with 1 or 2 prebiotics, usually derived from plant sources, which have shown mixed results in their influence on the good bacterial flora of the gut and do not appear to provide any immunological protection.



## Bioavailability of breastmilk vs. infant formula

Breastmilk and formula are really quite different, mostly because breastmilk is designed for humans, and formula is made from milk designed for the bovine species, or from soy. In fact, there are literally thousands of different ingredients in breastmilk, the vast majority of which cannot be replicated artificially, and scientists are continually discovering new components.



### Did you know, breastmilk has

- I Over 415 different identified proteins with an amino acid composition quite unique to humans
- I More than 130 different oligosaccharides (prebiotics) which help protect your baby's gut from pathogens like E. coli
- I Over 100 cytokines, hormones, and growth factors that help to mature your baby's organs and systems
- I Stem cells, T Cells, B Cells, Macrophages, Monocytes, Dendritic Cells, and Neutrophils
- I Dozens of enzymes to help with nutrient absorption, allowing your baby to consume less and grow faster
- I Antibodies like Secretory Immunoglobulin-A (SIg-A) that protect your baby's mucosal tissue from pathogens
- I A microflora combination (probiotics) that may be unique to him, you, and the prebiotics in your milk

# Breastfeeding facts & myths

## Breastfeeding myths

If you are thinking about feeding your baby breastmilk, but you feel like you have more questions than answers, you are not alone. You may have received a lot of conflicting advice and information from friends and family about breastfeeding. Some of the myths you may have heard about breastfeeding are simply not true – others may be based in truth but are not quite right. It's important that you understand what is fact and fiction so you can make a well informed decision about feeding your baby breastmilk.

### **Myth 1: My baby will “just know” how to breastfeed**

It is true that babies are made to breastfeed. The “rooting” reflex makes a baby search out the breast and most babies will suck vigorously at the breast. But breastfeeding is a skill that you and your baby have to learn to do properly and it may take some time and practice to get it right. Knowing this, it's a good idea to have some resources in place before you give birth – find a breastfeeding clinic nearby, or get the name of a lactation consultant who can visit you at your home to help you out.

### **Myth 2: I might not be able to produce enough breastmilk for my baby**

In general, the amount of breastmilk you will produce will be directly tied to what your baby needs based on his genetics. His genetics will determine his growth rate and metabolism, which will affect how much of your milk he needs to consume each day. As a result of this, your body will increase or decrease the amount of breastmilk it produces so that it can meet his needs. After all, there is no point in your body producing more breastmilk than he wants to consume!

It seems everyone knows someone who could produce huge amounts of breastmilk and someone who had trouble producing enough. The reality is that the normal amount of breastmilk production lies somewhere in between these 2 extremes. Most women will have no trouble meeting the needs of their growing child, and if your baby is growing appropriately on the WHO growth charts, then you are producing the perfect amount of milk!

Although it may take time to adjust, your milk production will increase to respond to your baby's feeding needs. Once your breastmilk supply has come in, your baby will on average, consume anywhere from 478 ml to 1356 ml in a 24 hour period. Some babies may do this in 4 breastfeeding sessions, while others may take 13 or more. However, it is important to let your baby control the feed, so that he only consumes what he needs. If you think that your baby is just not getting enough, talk to someone on your healthcare team to help you answer that question.



### **Myth 3: Breastfeeding is harder than bottle-feeding**

There are certain advantages to both breastfeeding and bottle-feeding, and it is important to be aware of these in advance. Breastfeeding is very convenient – there are no bottles to wash and disinfect and it is one less thing to think about when you are leaving the house. On the other hand, when feeding breastmilk from a bottle, you can share the feeding responsibilities with someone else, giving you a break.

### **Myth 4: Formula is just as good as breastmilk**

Breastmilk contains thousands of different ingredients, and scientists are continually discovering new components. Breastmilk really is a living fluid with cells and functional immune proteins. Your breastmilk is unique for your baby, it is constantly changing depending on your diet and environment, and these living and dynamic aspects cannot be artificially replicated.

# The science of breastmilk feeding

## Changes in mum

You spend 9 months adapting to the changes in your body due to your pregnancy, and once your baby is born, your body starts changing again.

During pregnancy, your breasts, or mammary glands, change as a result of a wide range of hormones, including estrogen, progesterone and prolactin. In the last trimester of your pregnancy your body starts producing colostrum, a special milk that is important to your baby in his first few days of life.

Within a few days after giving birth, your mature milk will “come in” meaning that your breasts will fill with milk. You may even become engorged where you feel extremely full and firm. This occurs as the breasts swell with milk and there is altered flow of blood and lymphatic fluid. Your milk will “come in” whether you breastfeed or not, but continued milk production only occurs if you empty your breasts of the milk regularly via breastfeeding or through using a breast pump. Once your milk has ‘come in’ your body will produce enough milk as demanded by your baby, so don’t be surprised if that ‘full’ feeling disappears once things become settled. Your breastmilk production is dependent on your body’s production of 2 key hormones: oxytocin and prolactin.

### **Oxytocin: The “cuddle hormone”**

As your baby nurses, your body releases oxytocin, a hormone that impacts your body in a number of ways. First of all, oxytocin triggers the milk ejection, also known as “let down”. Some mums actually feel the milk let down happening as the cells around your alveoli that store the milk contract and squeeze the milk out.

Oxytocin released during breastfeeding or breastpumping also helps the uterus contract and return to its normal size and shape. Finally, oxytocin is considered a socializing hormone that helps us form relationships with others. It is sometimes called the calming and bonding hormone.

Oxytocin is produced by both mum and baby, and there is even some oxytocin in breastmilk. It is released during breastfeeding, breastpumping and skin-to-skin contact. Oxytocin is also produced in dads when they play with their baby and have skin-to-skin contact, and helps dad bond with baby too.

## **Prolactin**

Prolactin is another important hormone in breast. You start producing it during your pregnancy, but high levels of estrogen and progesterone in your bloodstream counteract its effects. When you give birth, the levels of estrogen and progesterone suddenly drop off. That's when prolactin can start doing its job and stimulate the production of breastmilk.

It is the levels of prolactin in the body that allow breastfeeding to continue. That is why it is so important to initiate breastfeeding within 30 minutes to an hour after your baby is born. Prolactin levels drop between feedings, but every time your baby nurses, or you pump, the levels increase, signaling the body to make more breastmilk.

## Breastfeeding tip

Research shows<sup>49,50</sup> that just as much as the amount of milk consumed in a day varies from baby to baby (478–1356 ml per day), the way a baby feeds at the breast can also vary from baby to baby. Some babies will prefer to feed from one breast at a time (30%), some will always take both breasts (13%) but most babies will do something different at each feed (57%). As long as your baby is healthy and growing, you shouldn't be concerned whether your baby feeds only at one breast, or switches back and forth between breasts. You may also find that your baby prefers one breast to the other, which is also very common and normal.

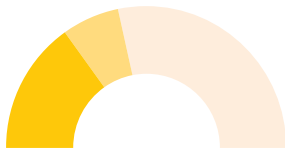
The length of time each feed requires will vary from mother/baby dyad to mother/baby dyad. It will also change as your baby grows. It is also very normal for your baby to feed at night time, 64% of babies will feed in the night! With a little experience you will get to know yourself and your baby's needs.

## What is the range of “normal” when it comes to breastfeeding?



### One breast or both?

Infants have varied feeding patterns:  
I 30% always take just one breast  
I 13% always take both breasts, and  
I 57% mix it up!



■ 30% one breast  
■ 13% both breasts  
■ 57% mixed



## Types of breastmilk

**Colostrum:** A high-protein, yellowish milk full of antibodies, leukocytes, stem cells, and a myriad of other things that coat and protect baby's digestive tract. Colostrum is produced in very small, concentrated quantities to accommodate the tiny tummies of new born infants. Besides providing nutrition and protecting baby from infections, colostrum's laxative properties also help him to pass his first stools.

In fact, colostrum is so complex that we are still just scraping the surface when it comes to discovering all of its amazing properties and benefits for babies.

**Mature Breastmilk:** Once your milk has come in, you are producing the volume of milk your baby needs over the day. When your baby feeds, the first milk he will drink will be lower in fat content, and the fat will steadily increase as the baby drinks. Babies will stop drinking according to their appetite, when they feel full. Whether a baby takes one breast during feeding, or two breasts, over 24 hours the amount of fat the baby ingests ends up the same. And remember, there really is no such thing as 'poor quality' breastmilk.

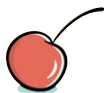
# The practical side of breastmilk feeding

## When will my milk 'come in'?

New parents are often very worried about when mum's milk will 'come in'. For the first few days you will produce colostrum; it hardly seems possible that the small amounts you produce will sustain your baby, and you may worry that your baby is not getting enough.

### Here are some important facts for you to consider

- I It is very normal for your baby to lose weight after birth.
  - On average, breastfed babies can lose anywhere from 6.6% to 12.8% of their weight in the first 3 days and will recover their original weight in about 8 to 21 days, depending on how much they lost<sup>51</sup>.
  - Much of this weight loss is due to water loss through their skin, which will eventually slow down as the skin adapts to being in an air environment instead of the amniotic fluid environment.
- I Rest assured that colostrum will be enough for your newborn for several days. At first, your baby's stomach is the size of a cherry. He can only hold about an ounce or 2 (30 ml to 60 ml) in his tummy at any time. After a few days, your baby's tummy will grow to the size of an apricot – and this is about the time your milk will likely 'come in'.



Birth



3-7 days

If this is your first child and you had a full-term vaginal delivery, you can expect that your milk will come in within 72 hours. If you have other children, your milk may come in sooner. If you had a caesarean section, or your baby is premature, it may take a little longer for your milk to come in<sup>40</sup>.

If you have any concerns about your milk supply, be sure to discuss them with your healthcare team.

## How often should I nurse?

Generally speaking, you will be advised to nurse your baby when he is hungry, usually around 8 times per day, but it could be more or less – every mother/baby dyad is different. This is called feeding on demand and it is very important for growing your milk supply at the same pace as your baby's needs increase. Your breastmilk supply will adjust to your baby's appetite and growth rate. You can offer both breasts at each session, alternating the starting breast each time, though your baby may prefer one to the other.

If you are having trouble remembering what side you nursed on last, there are a few tricks you can use. One simple strategy is to wear an elastic bracelet and switch it over to the side you just finished nursing on. You can also use a notebook or breastfeeding/pumping log to track this, along with the length and timing of each session. If you have a smart phone, you might be able to download the MyMedela App to keep track of all your details.



The length of time it takes your baby to nurse will depend on how quickly your milk ejection reflex happens and how old your baby is. At first, your baby may take 15 minutes or more. Anything between 5 to 45 minutes is just fine, but as he gets older and gets the hang of things, he will most likely get faster. In case several continuous breastfeeding sessions take longer than about 60 minutes please contact your lactation consultant. She should have a look at the breastfeeding management.

It is also important to remember that every breastfeeding experience can be different. Some mums have a large storage capacity for milk in their breasts, and some have a smaller storage capacity. A mum's storage capacity doesn't translate to milk production capacity. It simply means that if you have a smaller storage capacity, your baby may need to feed more frequently and may use both breasts when feeding. The same applies to your baby's stomach. If you have a large milk storage capacity, your baby may only be able to consume a portion of that milk due to the size of his stomach

## Hunger cues

Babies have their own way of telling you they are hungry, so here are a few cues to keep an eye out for. Although these are not universal to all babies, they can help you navigate the early days as you get to know your baby's behaviours. It's important to note that some of these cues may relate to other things as well, so if you try feeding him and he does not stop, it may be that something else is upsetting him.

### **Early signs**

- I Smacking or licking lips
- I Opening and closing mouth
- I Sucking on lips, tongue, hands, fingers, toes, toys or clothing

### **Active signs**

- I Rooting around on the chest of whoever is carrying him
- I Trying to position for nursing, either by lying back or pulling on your clothes
- I Fidgeting or squirming around a lot
- I Hitting you on the arm or chest repeatedly
- I Fussing or breathing fast

### **Late signs**

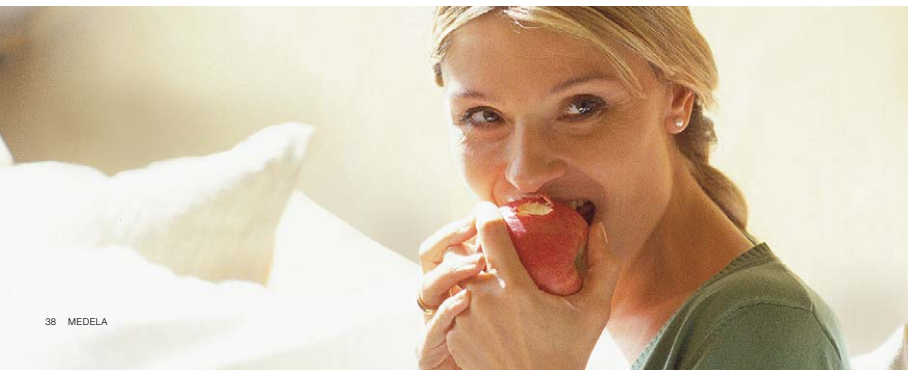
- I Moving head frantically from side to side
- I Crying



## Eating well while breastmilk feeding

There are no hard and fast rules about what you should or should not eat while breastmilk feeding, but here are some common sense guidelines to follow:

- | Eat enough. Don't try diets at this time – it will just compound the other challenges you are facing and you will probably lose weight without depriving yourself. While breastmilk feeding, you can easily lose 2 to 4 pounds per month.
- | Eat a balanced diet. Try to eat a range of foods, spread out over 4 to 5 smaller meals a day and 1 or 2 healthy snacks.
- | Different spices, tastes, and smells from the foods you eat will pass through your breastmilk to your baby. This is a normal process, helping expose your baby to a greater selection of flavours and has been shown to make your baby a more adventurous eater when he is older<sup>52</sup>.
- | Keep well hydrated. You need a lot of water to keep up with your baby's milk needs – about 6 to 8 glasses per day.
- | Some medications can pass into breastmilk. If you are worried that a medication you are taking will be transferred to your baby, talk to your health care team.



- I Alcohol consumption – Concentrations of alcohol in breastmilk approximate the levels in the mother’s blood. Alcohol can alter the milk let-down reflex and decrease the amount of milk consumed by the infant. With daily exposure, it may also affect the infant’s short-term sleep patterns and gross motor development. Frequent or heavy drinking can also impair the mother’s judgment and functioning.
  - Although there is no known “safe” amount of alcohol in breastmilk, an occasional drink is unlikely to harm the breastfed infant. The benefits of breastfeeding outweigh the risks of occasional alcohol intake.

### **Give yourself a head start!**

If you are planning on consuming alcohol, start pumping your breastmilk a few days before so you can build up a sufficient supply to feed your baby. This will give you peace of mind and time for you to process the alcohol in your body. Breastfeeding can take place 2–3 hours after a standard alcoholic beverage to limit ingestion of alcohol by the infant. During the time that you still have alcohol in your body you should discard any breastmilk you may have pumped. You can then resume breastmilk feeding and breastmilk storage once the appropriate amount of time has passed and you are certain that the alcohol has been expelled from your system. Alcohol will be present in your breastmilk for the same duration that it is present in your blood.

## Am I making enough milk?

Some breastfeeding mums find it challenging trying to figure out how much their baby is consuming when they are breastfeeding. Rather than keeping track of the amount of milk your baby is drinking, it is more important to keep track of the number of times you feed him, how long each session takes and how many wet/soiled diapers he has. As long as your baby is growing, gaining weight and thriving, your baby is getting what he needs. Below are a few strategies to make sure your baby is getting enough to eat.

### How to tell if your baby is getting enough

- I Number of wet/dirty diapers: The best way to tell whether your baby is getting enough to eat is by the number of wet and dirty diapers your baby has. After the first 4 or 5 days after birth, your baby should be having about 6 very wet diapers and several dirty diapers in 24 hours.
- I Good skin colour and muscle tone.
- I Your baby is alert and reasonably content.
- I Appropriate weight gain, growth in length and head circumference: On average, breastfed babies will lose from 6.6% to 12.8% of their body weight in the first 3 days and will recover their original weight in about 8 to 21 days.

If you still have concerns about how much breastmilk your baby is getting, you can rent a scale to measure your baby's weight before and after each feed. Over a 24 hour period add up the net difference from each daily feed to get the daily total. If your baby is steadily gaining weight, your milk production is in the normal range, if he is getting between 478ml to



1356 ml of milk per day and displays the other characteristics on the previous page. If your baby is receiving less than 450ml/day or not gaining weight, you should consult your health care professional as soon as possible.

## Normal stools for exclusively breastfed babies

The colour, consistency and frequency of bowel movements vary widely in exclusively breastmilk fed babies. They can change from day to day because of mum's diet and can also change when your baby has a viral infection. It is important to remember that because breastmilk is much more bioavailable than infant formula, breastmilk fed babies usually have

fewer stools than infant formula-fed babies. As well, the stool tends to be less solid than for infant formula-fed babies.

The following is a list of different types of bowel movements that are common in exclusively breastfed infants:

- I Sticky, tar-like and green or black: These are the first stools you will see – it is also called meconium. Meconium is completely normal and will take a couple of days to clear out of your baby's system.
- I Greenish or yellow/brown, grainy or seedy: As your breastmilk starts to 'come in', your baby's bowel movements will start to transition from meconium to a more regular breastmilk-fed stool. During this period of transition, your baby's bowel movements might look a little like whole grain mustard.



- | Light yellow to bright green, loose/runny, curdy, lumpy, seedy, creamy, mustard-like: This is what you can expect to see in a normal breastmilk fed stool. The colour, consistency and frequency will vary from one day to the next, but the odour will not be very strong.

### **Stools to monitor\*:**

- | Frequent watery stool – “greener” than usual: It may be difficult to differentiate diarrhea from the loose, frequent stools your baby normally has. An increase in frequency and intensity of the green colour may indicate your baby is having diarrhea – this could be due to a virus, an infection, stress, anxiety or even a food allergy.
- | Hard, pellet-like, presence of blood or mucous: This type of bowel movement represents constipation and is very rare in exclusively breastmilk fed infants. When it does happen, it might be due to an allergy to something in your diet. That said, this type of bowel movement is much more common in formula-fed infants or babies who are receiving other nutrition along with breastmilk.
- | Black stools often accompanied by constipation: This type of bowel movement is usually the result of iron supplementation. Exclusively breastmilk fed infants don’t need iron supplements in their diet because breastmilk contains all the iron they need for the first 6 months. Iron-fortified infant foods and infant vitamins have a lot of iron that is less bioavailable to your baby. This can cause constipation if introduced before 6 months.

- I Red-streaked stools: Most often this is caused by tiny cuts around the anus – also called rectal fissures. This can be a reaction to a mum’s dairy intake. You can try eliminating all dairy products from your diet to see if this helps. Regardless, blood in your baby’s stools does warrant a visit to your doctor’s office.
- \* Consult a healthcare professional if your baby is experiencing these types of bowel movements.

**Important note: bowel movement frequency**

Exclusively breastmilk fed babies have varying frequency in their bowel movements. They might have several poops a day, and then skip a day or 2. Some babies go once a week, once every 10 days, sometimes even longer. Rather than focusing on how often your baby has a bowel movement, pay attention to what your baby’s stool looks like. If it looks like normal breastmilk fed bowel movement, then this is your baby’s normal pattern.

## Factors that impact on breastmilk supply

While less than 0.5% of mums have insufficient glandular tissue to produce enough breastmilk, there are several common factors that can impact on breastmilk supply.

Problem	Description	Possible Solutions
Infrequent nursing	Your body will produce milk in response to stimulation and drainage of the breast. So if your baby is sleepy, ill or jaundiced, or you are separated from your baby for any reason, your milk supply will start to decrease.	<ul style="list-style-type: none"><li>Put your baby to the breast as often as possible until your supply has increased.</li><li>Feed on demand rather than on a schedule. This will ensure your baby is giving your body the necessary cues to produce the amount of milk he needs.</li><li>If that is not possible or is still not enough, using a breastpump that can pump both breasts at the same time, like the Medela Symphony, Freestyle or Swing maxi can help increase production.</li></ul>
Bad latch	A baby who is not suckling well will not stimulate milk production as well as a baby who is removing milk efficiently at the breast. In addition, a bad latch can cause nipple pain, which can inhibit your milk let down, leading to increased nipple pain and a negative feedback loop.	<ul style="list-style-type: none"><li>Adjust your baby's latch to help make it more efficient. If you need help, ask your health care team for advice.</li></ul>
Stress	Cortisol and adrenaline are hormones that are released into your bloodstream at times of stress and can interfere with the production and transfer of breastmilk <sup>40</sup> .	<ul style="list-style-type: none"><li>Identify and try to reduce sources of stress in your life. Getting enough sleep is an important part of stress reduction, so try and find ways to increase your sleep.</li></ul>

Stress		<ul style="list-style-type: none"> <li>  One possible solution is to pump expressed breastmilk that can be fed to baby by your partner or someone else once or twice a day, allowing you to get some rest/sleep.</li> <li>  You might like to try relaxation techniques before feeding or pumping.</li> </ul>
Time of day	The amount of milk available in your breasts can vary throughout the day.	<ul style="list-style-type: none"> <li>  If you are trying to pump breastmilk to store for later use, try breast pumping one hour after the morning breastfeeding session. Your breasts tend to be most full in the morning.</li> </ul>
Certain medications	Combination birth control pills – those that contain both progesterone and estrogen – can impact your hormone levels and affect your milk supply. Smoking heavily and certain other medications can also impact your milk supply.	<ul style="list-style-type: none"> <li>  There are alternatives to combination birth control pills.</li> <li>  Talk to your health care team about your concerns with medications.</li> </ul>
Pre-term infant	Babies who arrive much earlier than expected bring a number of unique challenges.	<ul style="list-style-type: none"> <li>  Your health care team should work with you closely to find strategies for breastmilk feeding your pre-term infant.</li> <li>  Learn about the Medela Symphony hospital pump with Preemie+ and how it can help you initiate your breastmilk supply.</li> </ul>

#### **Quick Tips for maintaining or increasing breastmilk supply**

- | Drain breast completely at least 6–8 times a day by:
  - nursing on demand and/or
  - pumping both breasts simultaneously till they are drained
- | Get enough rest and eat healthy
- | Keep breasts and nipples healthy
- | Resolve any latching issues

## Increasing your supply

The most effective way to increase your supply is to ensure you are regularly emptying both breasts. This will tell your body to produce even more milk. You can do this by feeding your baby on demand, ensuring you are eating, drinking, and sleeping well, and by supplementing these activities with additional breastpumping if needed. When using a breastpump to help increase your supply, here are a few tips:

- I Breastpumping may take some time getting used to. The first time you pump may not be an accurate reflection of your body's true milk production. Breastpumping both breasts simultaneously can increase the amount of expressed milk by up to 18% as it empties both breasts more effectively encouraging your body to produce even more.
- I Hold your breastshields correctly using your index finger and thumb, and the palm of your hand and other fingers supporting your breast.
- I Avoid squeezing the flange of the breastshields into the breast tissue. This will squeeze together and compress the milk ducts which are superficial and this can block the milk flow.

If that still is not enough, there are a number of medications, both herbal and pharmaceutical that you can try. Before starting any of these, consult with someone on your health care team.

## What if I'm breastpumping and feeding expressed breastmilk exclusively?

If you are exclusively breastpumping and feeding your baby your expressed breastmilk, the actual volume of milk may be important for you to track. Instead of focusing on how much your baby consumes at each

feeding, it is better to track the volume consumed over a 24–48 hour period. Your baby should be getting between 478 ml to 1356 ml of breastmilk per day. While these numbers can be used as a guideline, every baby is different



# Other breastfeeding challenges

## Dealing with breast engorgement

Engorgement can cause a number of issues. First of all, it can be quite uncomfortable, and your breasts can feel hot and sore as they expand and your skin stretches. In addition, your baby may have difficulty latching onto your engorged breasts. Finally, engorgement can also result in blocked milk ducts that can lead to mastitis, an infection in the milk tissue that can cause a very high fever. Should you get mastitis, contact a Lactation Consultant or other health care professional to help resolve the situation.

The most effective solution to engorgement is frequent breastfeeding, but you may also need additional help to relieve the pressure. If you are engorged, using a breastpump is one way to soften the breast before feeding. Spend just a few minutes breastpumping to get the milk flowing and then put your baby on the breast.

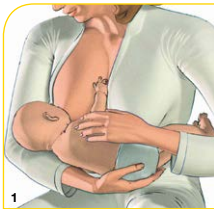
If you are feeling uncomfortable, rest assured that engorgement is relatively short lived. Once your body adjusts to your baby's nutritional needs, you will only make the milk he needs, and your periods of engorgement will occur less frequently or disappear completely.



## Latching tips

Breastfeeding may seem like the most natural thing you can do, but the truth is that like everything else, breastfeeding is a learned skill. Both you and your baby have to get used to each other and you may need a little help to get you through.

Here are some different ways to hold your baby to help him get a better latch:



1. The cradle hold is a breastfeeding position that you can use anywhere.
2. The cross cradle hold is especially suitable for very small babies.
3. The football hold is ideal for learning to breastfeed. It is also very suitable for sleepy or anxious babies.
4. Particularly at night, breastfeeding lying down is very convenient.

For every position, make sure that you and your baby are comfortable and well supported. A breastfeeding pillow can be very useful for this, as well as some support for your feet.

## Inverted or flat nipples

If you have flat or inverted nipples, you may need some help trying to draw them out in order to help baby get a good latch. There are a few things you can do during pregnancy to help draw out the nipples:

I Hoffman technique: Place a thumb on each side of the base of the nipple – directly at the base of the nipple, not at the edge of the areola. Push in firmly against your breast tissue while at the same time pulling your thumbs away from each other. This will stretch out the nipple and loosen the tightness at the base of the nipple, which will make it move up and outward. Repeat this exercise twice a day, working up to five times a day, moving the thumbs around the base of the nipple.

I Wear breast shells (starting at 34 weeks gestation): These are worn inside the bra and can gently encourage the nipples to be drawn out.

Note: In case you feel any reaction in your abdomen to the treatment of pulling out your nipples, stop the treatment immediately.

I After pregnancy you can try drawing the nipple out by using a breastpump or stimulating the nipple with your fingers and a little cold water or ice just before breastfeeding.

I Before taking your baby to the breast use a breastpump to pull out the nipple for 1 - 2 minutes. As soon as your nipple is enhanced stop pumping and help your baby to latch on.

I In some cases, nipple shields may help the baby attach, draw out the nipple and protect the nipple from damage.

I You may start the nursing session by using a nipple shield until your milk starts to flow. Take the nipple shield off and help your baby to latch on.

Nipple shields come in different sizes.

## Sore nipples

A bad latch can quickly result in sore and often damaged nipples, which can make the whole breastfeeding experience more complicated. If this happens, make sure you immediately get help to fix the underlying problems that have led to your pain. It is important to know that you are not alone in this and there are ways to improve things.

In order to address the immediate issue of nipple pain and damage, the most effective treatment is lanolin, a natural moisturizer produced by sheep. Lanolin promotes moist wound healing and has been shown to reduce inflammation and protect skin<sup>53</sup>. Yet it is totally safe for your baby to consume, so there is no need to wash it off before you nurse.

Sometimes, if damage is extensive and feeding has become exceptionally painful, a nipple shield may be helpful to protect the nipple while it heals.

## Sore breast and mastitis

If a spot on your breast suddenly feels sore and tender, you may have a blocked duct. You might have a red, hard spot where the duct is plugged. If the duct does not clear, it can become infected, causing a fever and general malaise, also called mastitis.

The best thing to do for mastitis is to get plenty of rest and nurse your baby frequently. It will also help to apply heat to the area, and to gently massage your breast before breastfeeding or while in a warm bath or shower. If the fever does not break after about 24 hours, talk to someone on your health care team because you might benefit from antibiotics.

## Yeast infection of the breast

Also called candida, yeast is a fungus that thrives in warm, dark, moist environments. It can leave your nipples feeling extremely sore, burning, itching, red or blistered and cause shooting pains in your breast during breastfeeding or breast pumping.

### **Simple tips for preventing and treating a mild yeast infection**

- I Keep your nipples clean & dry.
- I Change your nursing pads often – ideally after each feeding or pumping session.
  - If using reusable bra pads, thoroughly wash them in hot water with bleach and dry them in sunlight or on the highest setting of your clothes dryer. Ensure to rinse out well – residual bleach could cause nipple trauma.
  - If using disposable nursing pads, ensure they wick and lock moisture away so they leave the skin dry.
- I Avoid disposable or reusable bra pads that don't allow air to circulate to your nipples.
- I Air-dry your nipples after each feeding.
- I If you or your baby are showing signs of a yeast or thrush infection:
  - If you are using a breastpump, thoroughly wash pump parts that come in contact with your breasts in a bleach solution and boil them in water for 5 minutes.
  - Wash your bras daily in very hot water as you would your reusable bra pads.

## Teething and biting

The appearance of teeth in your little one should not cause undue anxiety when it comes to breastfeeding. The way your baby latches onto the breast means that as long as your baby is feeding efficiently, he will not actually bite you.

Nevertheless, you may go through a period where your little one is actively biting you when nursing. This can be extremely discouraging and you may wonder if it is time to wean him. This is rarely the message your little one is trying to convey to you. Reasons for biting include sore gums from teething, feeling stuffed up from a cold, or simply wanting your attention. Usually biting is a phase that will pass in time, but it may require a little extra vigilance and management on your part.

If your baby is biting, the first thing to do is to recognize the change in mouth position that happens as baby changes his latch just before biting. Be ready to place your finger in baby's mouth to break the seal and gently remove him from the breast. Firmly but kindly tell your baby not to bite mummy and take a short rest. Allow baby to tell you when he is ready to try again.

If you suspect that your baby has a cold and is biting because he is stuffed up, try nursing your baby so that he is in a more upright position. This will allow baby's sinuses to drain and will make it easier for him to breathe while nursing. In addition, the mechanics of how your baby breastfeeds actually helps with proper facial muscle development and prevents pinching of the Eustachian tubes, allowing the sinuses to drain properly.

Biting is not fun, but if you are firm and consistent it should not last long.

## Breastfeeding and caesarean

There is absolutely no reason why you cannot have a successful breastmilk feeding experience after a caesarean section. However, studies have shown that it can take a little longer to establish breastmilk feeding with a baby born by caesarean. It is difficult to say whether this is because of the surgery or because hospital protocols can delay the initiation of your first breastfeeding session.

If you have a caesarean section, make sure your birth team is aware of your plan to breastfeed. Try to hold your baby as soon after birth as possible – you can even breastfeed in the recovery room before the anaesthesia wears off. Ask the nurse and your partner to help position you and your baby properly. Rooming-in with your baby will also help promote breastfeeding and increase the frequency with which you can nurse your new born. If your baby and you are separated, ask to have a hospital breastpump like the Medela Symphony with Preemie+ brought to you that can help initiate your breastmilk supply, until your baby and you are back together.

After you get home, make sure that you get the help you need and that your friends and family are familiar with how to place your baby in the ideal position for you to breastfeed.

## Breastfeeding your adopted baby

Most women who want to breastfeed or breastmilk feed their adopted baby can usually achieve some level of lactation, even if it does not meet the complete nutritional needs of their adopted children.

### **The important elements of successfully breastfeeding an adopted child are**

- I Setting realistic expectations. Every woman is different in her ability to induce lactation in this situation. You will likely be able to provide some, or even most, of your baby's nutrition, and will certainly be able to enjoy the closeness of this special time.
- I Being committed to the process. Inducing lactation requires patience, commitment, diligence and education, and it is important to understand the challenges of this process.

### **Techniques for inducing lactation**

- I Use a breast pump every 2–3 hours, like the Medela Symphony with Premie+ card.
- I Use a supplemental nursing system such as the Medela Supplemental Nursing System to provide nutritional supplementation while baby is nursing on the breast and stimulating the production of your own milk.
- I Talk to your health care team about medications that might help.

## Re-lactation

After a long interruption in breastfeeding, it can sometimes be possible to re-establish lactation using the same techniques described above for establishing lactation with an adopted baby.

# Your growing breastmilk fed child

## How long should I feed breastmilk to my child?

Deciding when to stop breastmilk feeding your child is a personal decision that only you and your partner can answer. The World Health Organization recommends exclusive breastmilk feeding for the first 6 months, and continued breastmilk feeding with complementary foods until 2 years of age and beyond. The benefits of long-term breastfeeding or breastmilk feeding include a lower risk of asthma, allergies and various infections<sup>41</sup>.

We understand the demands of our busy lives may not always make it possible to meet those recommendations. But the longer you can provide breastmilk to your child, the higher the benefit, even if it is not always directly at the breast.

## Introducing solid food

Sometime around 6 months of age your baby should be ready for solid foods. You should be able to tell when this occurs as your baby's Tongue Thrust reflex will begin to disappear. Most health institutes recommend starting with iron-rich foods like fortified infant cereal, meats, well-cooked egg yolks or beans, and tofu. After iron-rich foods, introduce foods such as fruit and vegetables, followed by milk products such as yogurt and cheese.

Food should start out well pureed, but as your baby gets the hang of eating, you can make the food a little chunkier to get her used to chewing. You can also offer finger foods such as dry toast, soft fruits and veggies such as bananas and cooked carrots cooked meat and cubes of cheese. You may like to discuss your food introduction plan with your healthcare team. Sometimes your baby may just want to be part of the social "eating"



experience with the family. During family meal time, you may want to provide food he can hold and chew on, even if he isn't really eating any of it.

Starting with single foods and introducing new foods one at a time will help you identify possible food allergies, so take things slowly. You may want to wait to introduce foods that can cause severe allergies until your child is a little older for his safety, but the evidence is still unclear whether that delaying the introduction of these foods will prevent allergies from developing.

Many of the components in breastmilk are present to help train/educate your baby's immune system responses. One of the benefits of prolonged breastmilk feeding is that your baby has reduced risk of developing allergies that are non-hereditary or related to genetics. Perhaps you can be creative with 'breastmilk recipes' by adding some breastmilk to the foods you are introducing to your baby.



# Breastpumping

There are many reasons that mums today choose to incorporate breastpumping into their breastmilk feeding routine. Some of these reasons include:

- | Allowing her partner to share in the feeding rewards and responsibilities
- | Getting a little time to herself
- | Returning to work or school
- | Breastpumping for a premature baby or baby who is in the hospital
- | Increasing breastmilk supply
- | Initiating lactation for an adopted child or after an interruption in breastfeeding
- | Engorgement or sore nipples

Remember that while your new baby may seem helpless and you may think he requires constant attention, it is very important for new parents to have personal and together time.

## Why buy a breastpump?

- | A breastpump allows you to express your breastmilk so that your baby always has access to what he needs most.

Here are a few things to consider before choosing a breastpump:

- | How often will you, your partner, or someone else be feeding your baby breastmilk from a bottle?
- | Do you have, or are you planning on having more children?
- | How long do you plan on feeding your baby breastmilk?
- | How will your life change in the next 6 to 12 months?
  - Do you plan on going back to school/work?
  - Will someone else have greater responsibility for feeding your baby?

## Important breastpump facts

When breastfeeding, after about 3 months your baby's sucking action is what maintains your breastmilk supply. If you are planning on feeding your baby breastmilk from a bottle more than 2 times per week, you will need a breastpump that has sufficient suction strength to replace your baby's sucking action in order to maintain your breastmilk supply. You will also likely want to think about other convenience factors that will make expressing breastmilk easier for you, so that you can spend less time pumping and more time on what matters to you.

## Breastpumping expectations

Just like breastfeeding, breastpumping is a learned skill. You should recognize that the first few times you use a breast pump, you may not be able to express as much as you expected. Try to remember how big your baby's stomach is in relation to the volume of breastmilk you are expressing. It is best to pick a regular time of day to pump, if possible. This will allow your body to prepare for this extra demand on your milk supply. For instance, if you always pump one hour after nursing your baby first thing in the morning your body will quickly adapt to this demand.

## Choosing the right breastpump

The right breast pump for you will depend on your reasons for getting a breast pump. Use this handy chart.



### FULL-TIME BREASTFEEDING

Baby will be fed breastmilk from a bottle 2 or less times per week



### SHARED FEEDING

Baby will be fed breastmilk from a bottle 3 or more times per week



Freestyle™

Swing maxi™

Swing™

Harmony™

## PERFORMANCE

Patented 2-Phase Expression technology

Easy to use and painless\*

Adjustable suction strength

Single pumping

One-touch let-down button

Double pumping

## CONVENIENCE & MOBILITY

Light, compact and portable

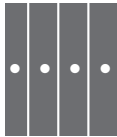
Quiet

Everything you need to pump, store, & feed

Can be used with the Calma feeding solution

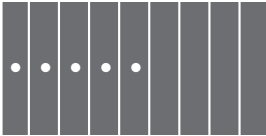
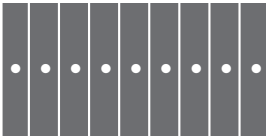
Battery powered pumping

Lithium ion rechargeable battery  
 Hands-free pumping  
 Backlit digital display  
 Memory button



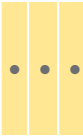
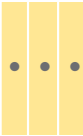
#### MEDICAL RELATED ISSUES

Sore, flat, or inverted nipples  
 Breast engorgement  
 Thrush/breast infections  
 Maintaining an established breastmilk supply  
 Latch-on problems  
 Multiple births (twins, triplets, etc)  
 Premature birth or hospitalized baby\*\*  
 Baby has cleft palate\*\*  
 Baby is tongue-tied\*\*



#### SAFETY & PEACE OF MIND

Maximum suction level safeguard  
 Reliable and dependable  
 2-Year manufacturer's warranty



#### PURCHASING BEFORE BIRTH (MATERNITY)

Gift (baby registry) or peace of mind



If you purchase a breastpump prior to giving birth, please ensure you do not open the pump, as once opened, it can not be returned.

\* When pumping at Maximum Comfort Vacuum™

\*\* Breastmilk supply should be established, for this we recommend the Medela Symphony Hospital pump with Preemie+

## Breastpumping at work or school

Going back to work or school does not have to mean the end of breastfeeding. If you choose to do this, you will need a good quality double breast pump to make this process as efficient and effective as possible.

The following tips will help increase your chance of succeeding at this challenging but ultimately rewarding task:

- I Discuss your plans with your employer before returning to work to ensure you will have a safe, comfortable space where you can pump throughout the day.
- I Bring a photo or video (especially easy if you have a smartphone) of your baby with you so you can look at him while you are breastpumping. This will help stimulate your milk ejection reflex.
- I It is better to pump more frequently for shorter periods of time. Try and schedule breastpumping sessions every two or three hours for 15–20 minutes and stick to them as closely as possible.
- I Pump both breasts simultaneously and try to ensure they are completely emptied of milk before stopping.
- I Continue to breastfeed your baby when you are at home. This will help maintain your supply and will continue to foster your strong, loving bond.
- I If you see a drop in production, talk to your health care team about strategies to get things flowing again.

## Feeding baby expressed breastmilk

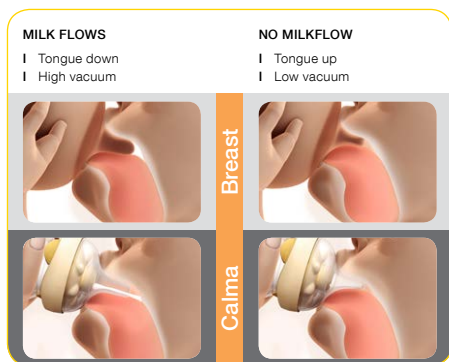
Choosing the correct teat or nipple for your baby can be confusing – for both you and your baby. You may have heard that you should not introduce a bottle before 4 to 6 weeks of age because “nipple confusion” might cause your baby to refuse the breast. But you may also have heard that if you do not introduce a bottle right away that your baby may never take a bottle.

The term “nipple confusion” has been used to describe many scenarios, all of them ending with your breastfed baby starting to bottle feed and then refusing the breast. The exact reason or science behind this phenomenon has not been well understood. Nevertheless, many theories have been formed and much advice given out to help prevent this from happening.

Recently, Medela spearheaded research into the sucking behaviours of babies and made some game-changing discoveries that have answered some of these scientific questions which will help mums make informed decisions about feeding their babies expressed breastmilk.

To understand how nipple confusion can occur, let’s review how your baby gets breastmilk out of the breast. First, your baby forms a good latch to create suction in his mouth. When your baby’s tongue is at rest, the suction level in your baby’s mouth is low and no breastmilk flows. When your baby lowers his tongue, the suction increases and breastmilk starts to flow. Your baby is always in control of the flow of the breastmilk and how much of it he will drink.

Nipple confusion could occur in some breastfed babies when they are given a bottle with a conventional nipple that allows milk to flow into your baby's mouth freely. Conventional nipples change the mechanics around how your baby feeds, which essentially means your baby has to learn a new method for feeding. Usually, this feeding method requires less work on the part of your baby, so over time they find it "easier" (since milk flows freely) and sometimes will not want to go back to the "harder" feeding method (where they need to suck) needed at the breast. This harder breastfeeding method is critical for helping in the proper jaw development for your baby, and without it, your baby can be more prone to developing ear infections and malocclusion.



Medela has used the results of this research to create the Calma feeding solution that allows your baby to continue to use the same feeding behaviour learned at the breast.



## The Calma feeding solution

Conventional nipples force babies to abandon their natural intuitive breastfeeding behaviour. However, the Calma feeding solution from Medela is designed for breastmilk and allows baby to apply the same feeding behaviour learned at the breast<sup>54,55</sup>.



Similar to breastfeeding:

- | Your baby maintains control of the feeding session.
- | Your baby can individually pause and breathe.
- | Your baby maintains optimal blood oxygen saturation levels and heart rate, which reduces stress.
- | Your baby creates a vacuum.



# Life with baby

Having a baby changes your life in a way that you cannot prepare for. It is a wonderful, demanding and chaotic time and for most of us it requires that we completely redefine our life. The following tips can help you navigate this transition and find your footing in this strange, new world.

- I **Find a support group:** Your local hospital, community centre or public health group may offer new mum support groups where you can meet other new mums. Finding a group of people who are going through what you are can make all the difference. You may even form new life-long friendships that benefit you, your partner, and your baby.
- I **Manage your expectations:** We know you could do it all – if you had 36 hours in every day! But there are only 24, so you will have to start to prioritize. If you can get help from friends, family or professionals, then take advantage of it. If not, then be clear about what you can and cannot do anymore.
- I **Carve out time for you:** Caring for your baby is first and foremost on your mind, but you have to care for yourself as well. Recognize the importance of getting back to the things that have always been important to you, whether it is exercising, seeing friends, reading books, doing crafts or pursuing hobbies. Finding time for yourself will allow you to return to the task of caring for your baby refreshed and renewed.

# Your partner can help

Your partner has a huge influence on your breastmilk feeding success<sup>56</sup>. We have prepared this section to help support them. You might want to hand this booklet to your partner, opened to this page.

## Benefits of breastmilk feeding

Research shows that breastfeeding has a lifelong impact on your child's health and development, long after you stop breastfeeding. The benefits for children include the following:

- I Helps the immune system mature<sup>14,15</sup>
- I Reduces gastrointestinal illness by up to 82%<sup>13,16</sup>
- I Reduces respiratory illness by up to 30%<sup>17,18</sup>
- I Protects against chronic diseases, such as: celiac disease; inflammatory bowel disease; asthma; and childhood cancers<sup>16,17,19</sup>
- I Delays the onset of hereditary allergic disease and lowers the risk of developing allergic disease<sup>20</sup>
- I Improves neural development
- I Lowers the risk of developing malocclusion and other dental issues<sup>21,22,23,24</sup>
- I Lowers the risk/delays of early onset:
  - Obesity by up to 35%<sup>25,26,27</sup>
  - Diabetes by up to 40%<sup>28,29</sup>
- I Reduces the risk of ear infections by up to 300%<sup>30</sup>
- I Reduces the risk of lymphoma by up to 800%<sup>31,32,33</sup>
- I Reduces the risk of Sudden Infant Death Syndrome (SIDS) by up to 500%<sup>34</sup>

## Benefits of breastfeeding or breastpumping for you and your family

Your baby isn't the only one who will benefit from your decision to breastmilk feed. There are a number of health benefits for mums who breastfeed or breastpump, including:

- I Lowered risk of:
  - Breast cancer by as much as 25%<sup>35</sup>
  - Ovarian cancer by as much as 20%<sup>36</sup>
  - Osteoporosis by as much as 400%<sup>37</sup>
  - Developing postpartum anxiety and depression<sup>39</sup>
- I Delayed return of menstrual cycle: Breastfeeding should not be used as a birth control method, but breastfeeding does impact on fertility and is nature's way of helping ensure a safe spacing between children<sup>40</sup>.
- I Faster return to pre-pregnancy weight<sup>41</sup>: Feeding your baby breastmilk can help burn through over 500 calories per day. That's equivalent to running 8 km or walking 11 km every day.



In addition, breastfeeding or breastmilk feeding has several benefits beyond infant and maternal health:

- I Strong bonding between parents and their infant
- I Lower household expenditures by avoiding the high cost of formula
  - Formula costs can run up to \$ 50/week, or \$ 2,500/year
- I Lower healthcare costs for mum, baby and society overall than for formula-fed infants

## How you can participate

Every time she breastfeeds, mum releases oxytocin, the socializing hormone that helps us form relationships with others. Even if you cannot physically place your baby to your breast and nurse him, there are many other ways you can bond with your baby and support mum in the process. As you interact with your baby, and especially as you foster skin-to-skin contact, the more oxytocin your body will produce.

- I Share the feeding responsibilities with expressed breastmilk: You can take responsibility for 1 or more feeding sessions. If mum can pump a bottle in advance, you can feed your baby during the night and give mum a chance to get a little extra sleep. Some partners will take an evening (around 8 pm) and late evening (around 11 pm) feeding session so that mum can get some uninterrupted sleep or quiet time.

- I Define your relationship with your baby: Take advantage of all the other ways you can bond with your baby, such as:
  - Giving him a bath
  - Giving him a massage
  - Cuddling him naked on your bare chest
  - Carrying him in a sling
  - Changing his diaper
  - Playing games with him
  - Reading books to him

## Support breastmilk feeding success

In addition to bonding with your baby, you have an important role in helping foster breastmilk feeding success. If mum knows that you are in favour of her decision to feed breastmilk, it will give her the energy and determination to continue, especially if there are bumps along the road<sup>56</sup>.

- I Be her advocate: It is not always easy for mum to get the support she needs when she makes the decision to feed breastmilk for as long as you two have decided to feed your baby breastmilk. If friends and family are not supportive, she needs you to be her most enthusiastic advocate.
- I Help create a safe, calm space at home: There are so many things to do after your baby comes home that it can all feel a little overwhelming. Your partner already has a lot on her mind as she tries to learn this new breastfeeding skill. Your help with some of the household chores such as making meals, cleaning, and shopping will help mum focus on getting enough rest in order to adapt to this new routine. Remember: when you feed mum, you feed your baby.

I Understand the challenges mum might face: It is important to know that breastmilk feeding may pose challenges along the way, but that these can be overcome with the right support. Inform yourself about questions related to milk supply and nipple discomfort so you can discuss your partner's concerns if these arise. Be her moral support to help her through any challenging times.

## Nurture your relationship with mum

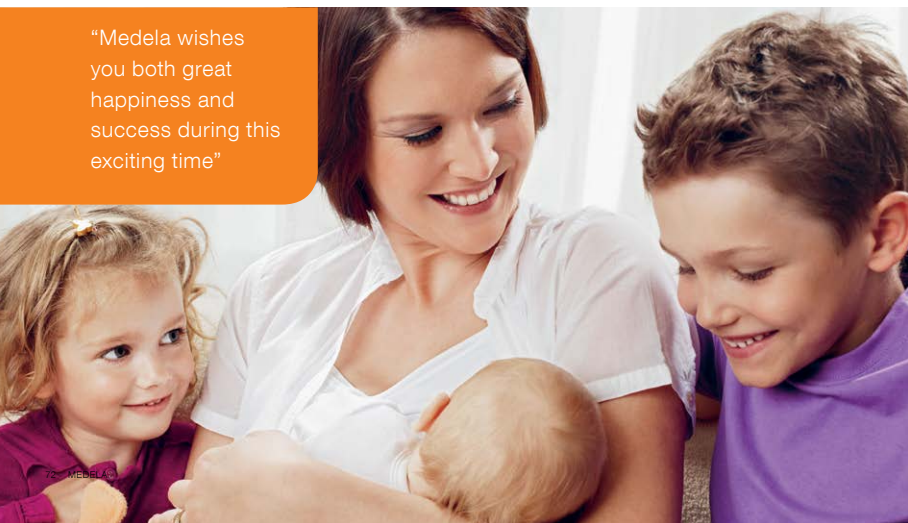
With all the demands that your baby puts on you at this time it is easy to lose sight of your relationship with your partner. Good communication is key to maintaining a healthy relationship. It will take a special effort, but it is worth making time for the two of you – after all, your baby is here because of your love for one another and you should celebrate that love even when time is tight.

Remember to continue to have conversations and discussions like you did before your baby arrived. While it may seem obvious, if one of you has been home all day with baby, you may cherish the idea of an adult conversation related to something other than baby.

While you may not be able to take a whole night out together, try getting out for coffee for an hour while a friend or family member watches your baby. If leaving your baby is not possible, plan some activities at home you two can do while your baby is sleeping – even if it means that your baby is sleeping in a sling on you.

When you get home from work, you may be excited to see your baby and it is understandable that the first thing you want to do is hold him. Try to remember that you fell in love with your partner, who has spent the day looking after your baby, and that you need to let your partner know just how much you love her too. A kiss, a hug, and “I love you” may be all that is needed.

“Medela wishes you both great happiness and success during this exciting time”





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# Notes

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