Breastfeeding a premature baby

1. Breastfeeding a premature baby

1.1 A premature baby

A baby is born too early, or prematurely, if he is born between the 25th and 37th week of pregnancy. Premature babies can be tiny and vulnerable when they are born several months early, but they can also be larger, healthy babies that simply arrived a few weeks before their due date.

In most cases, babies born between the 35th and 37th week of pregnancy only need to grow a little more. Babies born at 34 weeks or earlier often need extra breathing support, and their stomachs are often unable to fully tolerate the food they need.

Proper medical, nursing and lactation support is essential for premature babies and their mothers. Premature babies also need their parents to be around just as much as babies born on time. Premature babies who receive affectionate physical contact and are held lovingly against their parents' skin grow faster and are healthier.

In most cases, premature births occur unexpectedly, and the cause is often unclear. In some cases, babies need to be induced for medical reasons, such as when the risks of continued pregnancy are greater for mother and/or child than the risks of premature delivery.

You can start preparing for your baby’s time at the neonatal unit as soon as it becomes clear that he will be born early. For example, you can have a look around the neonatal unit, and ask about the available breastfeeding support.

1.2 Breastfeeding a premature baby

Breast milk is highly beneficial for premature babies in terms of health, growth and development —it is better for babies than any formula. Breast milk reduces the chance of developing allergies and contains nutrients and cells that boost your baby’s natural defences. That protection is particularly important for premature babies, as they are highly vulnerable.

In addition, the breast milk a mother produces for a premature baby has a different composition to the breast milk a mother produces if she gives birth around her due date. This breast milk is extra valuable in the development of the baby’s underdeveloped digestive system, lungs and brain. Compared to breast milk for babies born on time, breast milk for premature babies contains protein, sodium and calcium, as well as lots of nutrients that

boost the baby's immune system. The fats in this milk are easier to digest and the composition is perfectly tailored to the needs of the underdeveloped nervous system. Over the course of the first two to four weeks, premature milk automatically develops into normal breast milk.

Breastfeeding provides health benefits for mothers too: certain types of cancer are rarer in breastfeeding mothers, and they have a lower chance of osteoporosis in later life.

1.3 Benefits of breastfeeding a premature baby

We have summed up the benefits of breast milk for premature babies below:

- The first breast milk produced right after giving birth is called colostrum. Colostrum contains high concentrations of antibodies, vitamins and minerals. These antibodies protect your baby against infections. Due to the shorter pregnancy, premature babies have received fewer antibodies from the mother's placenta, meaning their own immune systems are underdeveloped.

- Colostrum prepares your baby's intestines for processing food and protects his intestines against infections. This reduces your baby's chance of necrotising enterocolitis, a severe bowel infection that can cause parts of the intestine to die off.

- Colostrum has a slightly laxative effect which makes it easier for your baby to excrete his first stool (meconium). This also reduces the chance of jaundice, as the yellow bile pigment (bilirubin) is excreted through your baby's stool.

- Breast milk contains growth factors, which are important for the development of your baby's digestive system.

- Breast milk contains the right fats for proper brain development and eyesight.

- Breast milk is more easily tolerated by babies and more easily digestible. This enables your baby to break down the food provided intravenously (parenteral nutrition) more quickly, reducing the chance of infections.

- Breastfeeding reinforces the bond between a mother and her baby.

- Mothers are able to do something that genuinely benefits their babies, not to mention all the benefits breast milk provides to babies born on time.

Even if you have decided in advance not to breastfeed your baby, it is worth considering expressing breast milk for a short time regardless.

2. Initiating milk production after giving birth

2.1 How to start expressing breast milk

In most cases, premature babies will be unable to breastfeed during the period right after their birth. As such, the mother will need to start expressing as soon as possible after giving birth. She can start as soon as she is able to. Preferably start the expressing proces as soon as possible after delivery, but at least within 6 hours. Your body produces lots of the prolactin hormone after giving birth, but the hormone levels drop quickly over the first few days if your breasts are not stimulated sufficiently.

To initiate milk production, you need to express milk just as often as you would breastfeed a full-term baby. This means is eight to twelve times every 24 hours. In practice, this is too much for most mothers, so it's best to start by expressing six to eight times every 24 hours.

If your baby is able to breastfeed directly on occasion, you should express every feeding session it skips. Alternatively, if your baby is not drinking enough during a feeding session or only needs a small portion, it is important to express after feeding, as an empty breast is the best trigger for your body to produce more milk.

For the first few days after giving birth, you may only be able to produce a few drops of milk when expressing. This is perfectly normal. The point of expressing during this period is not to produce a large volume of milk, but to properly stimulate your breasts
to produce breast milk both in the short term
and over the period of the next few weeks.

The first few drops of breast milk are called colostrum and contain lots of antibodies for your baby. Even small amounts are highly valuable for your baby and contribute to his health. You should never let these drops go to waste. Make sure your baby gets as much colostrum as possible.

To properly initiate breast milk production for a premature baby, you need a good breast pump. A double breast pump saves time and optimally stimulates your breasts to produce milk, increasing your breast milk production over time. You can express small amounts of colostrum by hand after mastering the technique.

During your stay at Máxima MC (MMC), we provide a fully automatic electric pump with adjustable suction force and expressing rhythm. Once you have been discharged from hospital, you can rent this type of pump from medical equipment suppliers and some lactation consultants.

Smaller electric pumps or manual pumps are perfectly adequate for expressing occasionally when your milk production is fully up and running. However, while you are still trying to get your breast milk production going, a fully automatic electric pump is recommended.

For more information about expressing, please see the Expressing breast milk brochure.

2.2 What is good breast milk production?

It may seem contradictory, but you can express as much breast milk as you would for a full-term baby.

For the first few days after giving birth, it is important to stimulate your mammary gland tissue as much as possible to ensure it develops properly. The best way to do so is by expressing regularly. If you do not stimulate your breasts enough, insufficient mammary gland tissue will be prepared. This will cause problems at a later stage, when you need larger amounts of breast milk to meet your baby's growing needs, as you will have insufficient properly functioning mammary gland tissue.
It is difficult to define "normal" breast milk production, as it varies greatly between mothers and depends on their exact situation. As a general rule, after 14 to 21 days of intensive expressing, the total volume of breast milk you produce in a day should be over 500 ml.

Not all mothers will find that expressing helps stimulate breast milk production. A pump is simply no match for the feeling of a baby on your breast. The volume of milk you produce also depends on your baby's condition. Worrying about your baby will slow down or impede your let-down reflex, making it more difficult to express lots of milk.

Even if you can only express a little, the expressing process will encourage your body to keep producing milk. In the end, even small amounts of breast milk are good for your baby.

Make sure you bring enough "fresh" breast milk to last for the next 24 hours when you come to the hospital. Any extra milk you express can be frozen. Freezing breast milk changes its composition and affects its quality to some degree—some of the living cells will be lost. However, the antibodies and other protective elements will be retained.

2.3 Donor milk

Sometimes there is no or insufficient breast milk available for premature babies. Possible causes are, for example, that the mother is still too ill to express milk or is given medication to which the baby should not be exposed (via breast milk). In addition, stress surrounding the intake can (temporarily) adversely affect breast milk production.
If there is no or insufficient own breast milk available, donor milk can offer a solution. Donor milk is milk from other mothers who also have a baby, but who have leftover breast milk. These mothers are happy to make their milk available to other children. The donor milk is collected by the Dutch Mother's Milk Bank.

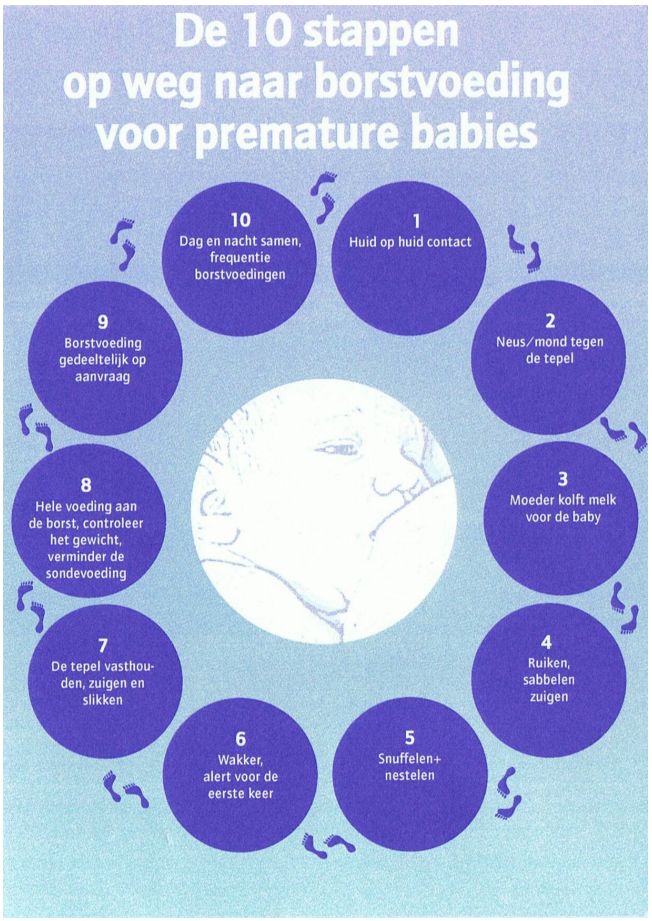
When using products that come from donors, extreme care is required, because it is possible to transmit certain diseases via the donor products. The breast milk bank ensures that the donor milk meets the strictest safety requirements, comparable to the blood bank. All donors are inspected and their blood is tested for various diseases. In addition, the donor milk is pasteurized and the milk is checked for the presence of bacteria before and after pasteurization. The milk is then frozen until it can be given to premature babies.

Given the beneficial effects of breast milk and the possible side effects of formula feeding, the Intensive Care Neonatology treatment team strives to feed preterm infants with breast milk as much as possible. Own breast milk is the first choice. Our nurses and the lactation

consultant will guide the mothers in expressing their own breast milk. If there is (temporarily) no or insufficient breast milk available, we advise children born before a gestational age of 30 weeks and/or a birth weight lower than 1000 grams of donor milk.

3. The 10-step plan

It is impossible to predict how quickly your baby will progress from his first careful sips to being fully breastfed. As such, MMC uses a 10-step plan. Depending on your baby's age and health, he will go through each of these breastfeeding steps.



1. Skin-to-skin contact

Long and frequent periods of "kangarooing" will help your baby feel safe and close to you. Skin-to-skin contact also encourages the production of hormones that help you bond with your baby and trigger the production of breast milk.

2. Nose/mouth against your nipple

While you are kangarooing, try to position your baby’s mouth and nose at the same height as your nipple. Your baby will smell your breast milk and become curious.
Slowly try out the various feeding positions once your baby starts becoming more responsive and starts actively taking part. The important thing to note is that the emphasis here is on contact and practice, and not on feeding.

The most common feeding positions for premature babies are as follows:

- Adjusted madonna hold: this is an effective hold for most small premature babies. In this hold, the focus lies on supporting your baby's back and head.
- Rugby hold: this is a good hold to use for premature babies, as their faces are more easily visible and the mother has more control over the baby's head, allowing her to provide extra support when breastfeeding.

When you latch your baby using either of these holds, you will also have a hand free to support your breast. The nurse or lactation consultant can provide more details on these holds.

3. Tasting breast milk

When your baby is level with your nipple, carefully express a little milk from your breast by hand. Your baby will smell these drops and might even have a little taste.

4. Smelling, mouthing and suckling

Your baby will increasingly show signs that he wants to drink. First, your baby will lick carefully, then he will open his mouth. There is nothing your baby loves more than tasting a few drops of breast milk.

5. Sniffing and nuzzling

Position your baby at the same height as your nipple and rub your nipple across his bottom lip. Your baby will open his mouth wide and stick out his tongue over his bottom lip. This is the perfect moment to slide your baby a little closer so that he can take your nipple far enough into his mouth when he closes his mouth. This often takes a little practice: he will try to suckle and let go, then try again a few more times.

6. Awake and alert for the first time

7. Holding your nipple, sucking and swallowing

In time, your baby will "latch on" when he is wide awake
and not let go. When this happens, he will also suckle for the first time. It may take a while to arrive at this stage. Your baby will often close his mouth but not start suckling.
The suckling reflex is triggered when your baby feels something against the top of his mouth—he will start suckling automatically when that happens. If your nipple is not far enough into your baby's mouth, it will not touch the top of his mouth.

The suckling reflex will not be triggered, and your baby will not suckle. If this happens, temporarily using a nipple shield may be an option.

Your baby will start drinking better and more effectively as time goes on. We will teach you how to see and feel whether your baby is breastfeeding effectively. Based on your baby's progress, we will gradually reduce tube feeding.

8. Your baby drinks effectively during all feeding sessions, is growing properly and no longer needs tube feeding

9. Breastfeeding partially on demand

Your baby is now with you, and you can breastfeed him as soon as he shows signs of hunger. If the breastfeeding is progressing and your baby is happy, growing well and peeing and pooing properly, additional feeding will no longer be required and you can reduce the amount you express.

10. Together day and night, breastfeeding on demand

Your baby is happy and growing well, and you no longer need to express.
In many cases, you will go through the final two steps while still at the hospital. Once your baby has shown several times that he can complete a full breastfeeding session and meets all other criteria for discharge, you can room in for 48 hours and fully breastfeed your baby during this period. Once these 48 hours have passed, your baby will be weighed. His weight will be compared to the start of the 48-hour rooming-in[1] period. Depending on his weight after 48 hours and the mother's experience of that period, we will decide whether your baby can be discharged and fully breastfed, or whether additional feeding is required at home along with breastfeeding. At the end of the 48-hour period, we will also help you draw up a breastfeeding plan to use at home.

4. Feeding expressed breast milk

If your baby is not yet able to breastfeed properly or is only able to get small amounts of milk, he will need additional feeding. There are various ways to do this, the most common of which are detailed below:

Tube feeding

When your baby is tube-fed, food enters his stomach directly through the tube. The benefit of tube feeding is that your baby does not need to make any effort to feed. The downside is that your baby will not feel any food in his mouth. Your baby will not taste the food, and it will not mix with saliva, which contains digestive enzymes. As such, when your baby starts showing a desire to suckle and feed by itself, it is important for you to be present for

[1] *If you have no medical conditions and are staying the night with your baby, we will pass the cost of these hospital stays to your health insurance provider for up to 28 days after you gave birth. Your basic insurance will cover this, but it will come out of your deductible. If you have supplementary coverage, there may be less or a lower deductible. Contact your health insurer for more information.*

breastfeeding. This will allow tube feeding to be slowly replaced by breastfeeding. Once your baby is able to breastfeed properly, he will be able to return home to be fully breastfed.

Cup feeding and finger feeding
Cup feeding and finger feeding are two other options when your baby needs additional feeding. These methods are only an option when your baby is only expected to need additional feeding for a few days, and when he is alert enough to feed this way. The preferred food to give using these methods is expressed breast milk.

Bottle feeding
Breastfeeding requires a different technique to bottle feeding, so it is best to delay using this method for a while, until your baby is able to breastfeed properly. It is important to offer a bottle in the exact same way as you would your breast. Allow your baby to root and open his mouth wide, then put the teat on his tongue. If your baby needs a break in between, let him have it. Again, expressed breast milk is the preferred option when bottle feeding your baby.

Breast compression
You can also help your baby get more breast milk by putting pressure on your breast while feeding. This technique is referred to as breast compression.

Dummy
A dummy can be an important source of comfort and pain relief for a sick or premature baby. As a consequence, premature babies whose need to suckle has developed properly but whose mothers cannot be present all the time to meet this need, will be offered a dummy. Sucking on a dummy stimulates the release of digestive enzymes, which help your baby digest his food. A dummy will also satisfy your baby's need to suckle, meaning he will be calmer and grow better. The nipple confusion problem is much less of a concern in premature babies than it is in full-term babies.

For more information on breastfeeding in general, please take a look at the information pack on the ward. The Expressing breast milk and Breastfeeding brochures are available from the brochure stand, as well as on www.mmc.nl/geboortezorg.

5. Useful addresses

La Leche League International
https://www.llli.org/breastfeeding-info/

Netherlands Association of Lactation Consultants (NVL)
www.nvlborstvoeding.nl

6. Any questions?

If you have any questions after reading this brochure, feel free to ask the nurse on the ward where you or your baby are staying or the lactation consultant (tel. +31 40 888 84 42).