

## Chapter 9. Making milk for your Baby

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*Parent educational material for app*

Imperial Neonatal Service, Imperial College Healthcare NHS Trust

## Making milk for your Baby

We encourage, help and support mothers to breastfeed their babies. Your breast milk will make a very important contribution to your Baby's health.

### Aims for this chapter

We want you as a parent to know and achieve:

- an understanding of how our bodies produce breast milk
- how to express milk for your Baby
- how to clean expressing equipment, handle and store breast milk safely
- an understanding of what donor breast milk is and why your Baby may have it
- tips and support to help you comfortably and effectively produce all the breast milk your Baby needs.

### 1.1 The benefits of breast milk

We want to encourage, help and support mothers to make breast milk for their babies. If your Baby is not yet able to breastfeed because they are premature or not well enough, it is important that you express your milk. Your breast milk makes a very important contribution to your Baby's health.

#### **Breast milk:**

- gives your Baby unique nutrition and immunity
- is the best milk for babies with specific benefits over formula
- protects your Baby by reducing the risk of infections including sepsis, meningitis, gastroenteritis, respiratory and ear infections
- reduces a mother's risk of breast and ovarian cancers and osteoporosis
- is easy to digest for the preterm Baby and helps their gut to grow and mature
- reduces the risk of your baby developing necrotising enterocolitis
- helps their brains to grow so improving their developmental outcome.

When you and your Baby are skin-to-skin you share the same environment and bacteria. This leads to you producing antibodies to microorganisms from your Baby's environment. These antibodies then appear in your breast milk within a few hours and this immunity is passed on to your Baby like a tailor-made vaccination every time your milk is given to them.



## 1.2 Making milk for your Baby

To understand the key techniques in expressing and why they are important, it is helpful to understand the basic physiology of breast milk production and why your Baby being born early or unwell may affect it.

- For most women, by 22 weeks of pregnancy, cells in the breast change into cells able to produce breast milk and the breast starts to fill with colostrum, the initial milk that is so important and protective for newborn babies.
- Having your baby at 23 to 25 weeks' gestation does not mean you will not be able to make milk, it may just take a little longer to do so and you need early support from nurses, midwives etc.
- After delivery, the amount of prolactin in your body (one of the hormones involved in producing breast milk) increases to trigger milk to be produced. Frequent early removal of colostrum from the breast means more milk is produced. If you do not express, the milk producing cells are not triggered and may not produce as much milk.
- Your prolactin levels are highest at night between 02.00 and 04.00 in the morning—expressing at this time is important to get the best milk supply possible.
- Oxytocin is the other key hormone involved in milk production and is stimulated by:
  - skin-to-skin contact
  - seeing or touching your Baby
  - breast massage and nipple stimulation.
- Oxytocin causes tiny muscle cells around the milk producing cells to contract and squeeze milk out into the ducts towards the nipples. This is called the milk ejection or let down reflex. It is sometimes felt as a tingling or pins and needles by some mothers and associated with a spray of milk from the nipple.
- Pain and stress can stop oxytocin being released and stop milk flowing.
- Early breast massage and hand expressing is the best and easiest way to remove colostrum.
- You may be exhausted, stressed and not feeling well after your delivery, but it is important to start expressing as soon as possible. Resting for a few hours or days and not expressing may make it harder to produce more milk later. Producing milk for your Baby is such an important role for you in these early days.
- You should be shown and supported to start breast massage and express your milk as soon as possible by nursing or midwifery staff. This may initially be by hand or by electric pump that has a cycle that supports early expressing.
- Try and express eight to ten times in 24 hours, including once at night. This is how often a newborn baby would suck and remove colostrum in the early days. We are trying to mimic what a newborn baby would normally do if they were well enough.
- The volume of colostrum is relatively small – around 50ml a day in the first few days. Colostrum is perfect concentrated nutrition.
- The stomach of the newborn term baby is small and increases in size over the first week of life.



Day one	Day three	One week	One month
<b>Size of a cherry</b>	<b>size of a walnut</b>	<b>size of an apricot</b>	<b>size of a large egg</b>
5-7ml/1 teaspoon	22-27ml/0.75-1oz	45-60ml/1.5-2oz	80-150ml/2.5-5oz

- The volume of milk will gradually increase over the first three to five days after your Baby is born. The amount depends on regular effective expressing. It is a case of supply and demand.
- Around five days after you have your Baby, your milk usually 'comes in' and you will have an increasing supply. Record the volumes on the expressing app or diary to help you keep track.
- By day 10 to 14 after delivery, mothers of term babies are usually producing around 750ml a day. Aim to express this amount. It may well be more milk than your Baby currently needs and so you can start to freeze and store it for the future. If you are not yet making this sort of amount of milk, there are lots of potential reasons why, so don't worry. Just ask for support and advice from nursing staff or the breastfeeding team.
- You need to express to the volume your Baby will need when they are bigger in the future.
- The amount of fat in breast milk varies throughout a breastfeed. The milk at the end of a feed tends to be the highest in fat. Milk that is left in the breast for longer than five hours is known to be lower in fat. It's a bit like the difference between full fat and skimmed milk. It is important therefore that you fully empty your breasts and express as often as you can to make sure you have the best fat content and a good volume. If only a little milk is removed, or there is a long gap between expressing, your milk production will slow down.
- The size of your breasts is not a good indicator of how much milk you will be able to make.

## 1.3 Expressing milk

All nursing staff and midwives can show and support you to do breast massage and hand express as soon as possible after delivery – we use a knitted breast to show you the techniques.



- You will be given a hand expressing kit, which has some written information and the syringes and bungs you will need to collect colostrum and two miniboo comfort cloths (see section 1.6 on how these can help with you establish a good milk supply).
- Make sure you are warm and comfortable and as relaxed as possible.
- You may need to think about having some front opening clothes that will make regular access to your breasts easier.

Small wonders film 4: Expressing breast milk - A nice short film to watch talking about making milk for your Baby <http://sw4.bestbeginnings.org.uk/>



### 1.3.1 Breast massage

- Breast massage should be gentle but tactile. Avoid using your finger tips or knuckles too firmly. An over-enthusiastic technique can damage your delicate breast tissue.
  - Breast massage helps to raise the pressure within the breast, stimulate oxytocin and can make milk removal easier. When a baby suckles at the breast he will naturally massage it and stimulate the nipple and we are trying to mimic that action of the baby.
1. Use the flats of your fingers in a circular movement to apply gentle pressure to the breast. Work all the way around the breast in a spiral toward the nipple. Don't forget the underneath of the breast as this is where most of the milk ducts are. Apply gentle pressure to the breast with the flats of your hands and move your hands from side to side. Repeat for about 30 seconds.



2. Starting at the top, 'walk' your fingers down the breast as if pushing the milk toward the nipple. Continue this all around the breast.



3. Gentle nipple stimulation is important, so gently flutter your fingers across your nipple to help elicit the milk ejection reflex.







Gentle massage



C shaped hand



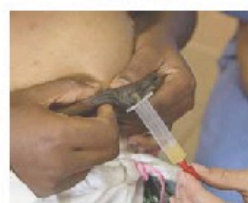
Push back



Compress



Roll towards nipple



Help collect every drop in a syringe

PHOTOGRAPH © PAUL HILLON

<http://newborns.stanford.edu/Breastfeeding/HandExpression.html> This is a nice short video demonstrating the techniques of hand expression particularly for those with a premature baby.

Another useful film showing you how to hand express in the early days

<https://globalhealthmedia.org/portfolio-items/expressing-the-first-milk/>

<http://www.unicef.org.uk/BabyFriendly/Resources/AudioVideo/Hand-expression/> A nice video showing hand expression when you have an established milk supply.

### 1.3.2 Hand expressing



- To work out roughly where to place your fingers measure two fingers back from the base of your nipple, make a 'c' shape with your thumb and your fingers, Taking care not to 'cup' the breast with your hands.
- Gently compress and then release your fingers rhythmically
- If the milk does not flow you could try to compress or 'push' your fingers back toward the chest wall; try not to slide your fingers across the breast tissue. Then 'press' your fingers to meet and 'roll' them toward the nipple and release. Repeat this action all around the breast until it feels like all the colostrum has been removed, then move to the other breast, stopping to massage whenever the flow of milk slows down.
- There does not have to be a rigid routine or set time for expressing, instead express each breast until you feel you have removed all the colostrum or milk.
- Removing colostrum can be a challenging technique as this early milk is thick and sticky and you may have to bring your fingers quite close to the nipple to remove the valuable drops.
- Collecting drops of colostrum with a syringe can be a two-man job and this may be a useful technique to show your partner or support person who may be able to help you with this.
- When you have finished expressing, gently push all the colostrum to the top of the syringe and replace the bung.



### 1.3.3 How to use a manual or electric breast pump?

- You should be shown how to use a electric pump as soon as you feel ready. Some Mum's like to use the pump straight away others prefer to wait but at some point the addition of suction is necessary to support a good milk supply
- You will be given an expressing set and shown where the electric breast pumps are kept on the unit.
- Breast sizes vary so we have a range of funnel sizes to ensure best fit and avoid damage to the breast tissue. Your breasts may change in size during your lactation so you may need different funnel sizes in the first few weeks of expressing.

For more information on funnel fit follow this link  
[https://www.medelabreastfeedingus.com/assets/file/1908488\\_RevA%20Breastshield%20Sizing%20Tool.pdf](https://www.medelabreastfeedingus.com/assets/file/1908488_RevA%20Breastshield%20Sizing%20Tool.pdf)



- Wash your hands well.
- Wipe the pump clean before you use it. Wash kit with warm soapy water before first use and rinse with sterile water
- Assemble the milk collection kit.





- Before using the pump, start with some breast massage and nipple stimulation to release oxytocin and stimulate the milk ejection reflex.
- Place the funnel with the nipple central in the funnel. If you are expressing less than 20mls per expression select the initiate cycle to support you until you are regularly producing more than 20mls per expression, then move to the regular setting.
- In the regular cycle, the pump starts with a stimulation phase then goes into the expressing phase. Start with low vacuum initially. The amount of milk you produce does not correlate with the power of the suction. It needs to be comfortable and pain free. If you increase the suction too much you can damage your nipples. When the milk starts to flow you can increase the vacuum within comfortable limits.
- Double pump reduces the time it takes to express and makes the most of the milk ejection that occurs in both breasts.
- Do not time limit your expressing but continue until the last few drops of milk are expressed as this will have the highest fat content.
- Expressing kits need to be washed by hand in hot soapy water, rinsed dried and rinsed with sterile water. See section 1.4.



- Electric pumps can be used on the unit or rented – ask your nurse for information on rental and available discount codes
- A manual hand pump can also be very useful to help support you expressing while on the move, in and out of hospital
- The way a baby removes milk from the breast is different to how a pump removes milk. Some mothers don't get a lot with a pump but their baby is able to remove milk more effectively. Expressing volumes are not an absolute indicator of your breastfeeding success.
- You can choose to express wherever you feel most comfortable in the expressing room, by your Baby's cotside or in your rooming-in room.

### 1.3.4 How Dads and partners can help with breast milk production

Some Dads and partners can feel a bit helpless watching their partner working hard to get her milk supply going and producing precious drops of milk. It can feel like there is nothing you can do to help. Here are some things that may be helpful:

- Read through the information on lactation and expressing. It will help you understand and support the process.
- Make sure your partner is comfortable in a chair with a footstool or in bed with pillows.
- A trip home to get appropriate bras and clothing may be helpful.
- Make sure they have snacks and meals regularly and water to drink. Producing breast milk can make Mums thirstier.
- Give lots of encouragement for every drop of milk. It's full of all the good things your Baby needs for protection, development and growth.
- A shoulder or foot massage can help as can hugs and general support during this time.
- Make sure your partner rests and takes a nap when she can between expressing, however it is important that she expresses regularly even in the middle of the night!
- You may be able to take the milk up to your Baby as soon as it's collected so they can have it as fresh as possible.
- Collecting drops of colostrum with a syringe can be a two-man job and this may be a useful thing to help with.
- Some partners choose to help with hand expressing – it's up to you as a couple to work out what feels right for you.
- Delivering milk to the unit or putting it in the fridge can be helpful



## 1.4 Cleaning expressing equipment – wash and dry

Breast pump collection kits and nipple shields come into contact with breast milk, so need cleaning between each use.

### Step 1

- You will be given a breast pump set and one plastic bag.
- Expressing kits need to be washed by hand in hot soapy water, rinsed dried and rinsed with sterile water before first use.



### Step 2

- After expressing, take the set apart, taking care that you remove the white plastic membrane.
- Wipe the cap or membrane that attaches to the pump and the tubing with a sanitised wipe, allow to dry and put into the 'clean' bag.
- Take the rest of the breast pump, set on a paper towel or disposable paper bag, to the washing area.



### Step 3

- Wash your hands and prepare a clean area with a sanitised wipe and a paper towel.



### Step 4

- Rinse off the milk under the running tap.
- Put the plug in the sink and add warm soapy water.
- Place the pump set in the sink.
- Separate and wash each part.
- **Please do not wash the tubing, membrane and cap.**



### Step 5

- Rinse well in warm or cold water to remove the soap
- Rinse with sterile water
- Place the rinsed parts and the bag on the clean paper towel and dry each part carefully with a paper towel



### Step 6

- Place the washed, rinsed and dried parts in the clean' plastic bag with a clean, dry paper towel to absorb any moisture left.



### Step 7

- Close the bag after contents are completely dry and store.
- Place the set in your Baby's area.





### Step 8

- Sets will be exchanged weekly.

## 1.5 The use of donor milk to support lactation and breastfeeding

The milk bank at Queen Charlotte's & Chelsea Hospital supplies screened, tested and specially processed breast milk donated from mothers. Each year several hundred babies receive donor breast milk (DBM) from the milk bank. The majority of babies only need it for a few feeds during the early days when a mother's milk is coming in. Human milk is important for your preterm baby and DBM can be a support and encouragement for you until you can give your Baby your own colostrum and milk. There may also be occasions when you, due to illness or adverse circumstances, are unable to provide any or enough of your own milk and at these times the use of DBM may also be used.



Verbal consent for giving your baby DBM is requested from you and this will be documented by a member of staff.

Every effort will be made to help you provide your own colostrum and breast milk. Your own breast milk is superior in terms of immunological and nutritional properties compared to DBM.

All women who donate their milk are extensively screened prior to being accepted as a donor. This includes blood tests for HIV, hepatitis, syphilis and human T-cell lymphotropic virus. Having a blood transfusion is no longer a contraindication to becoming a milk donor, but we ask that mothers wait until four months after their transfusion to start donating. Donors must be non-smokers and if they routinely take medication, including herbal medicines, this will be discussed as some will prevent mothers from being able to donate.

Do let us know if you are interested in becoming a milk donor in the future. [milkbank@nhs.net](mailto:milkbank@nhs.net)  
tel: 020 3313 3559

For more information about donor milk nationally see the UK Association of Milk Banking website <http://www.ukamb.org/>

### 1.5.1 Use of DBM

In our units we use the following criteria for using donor breast milk:

- All babies born below 32 weeks.
- Babies requiring cooling treatments.
- If your baby is born between 32 and 34 weeks and you wish to exclusively breastfeed, DBM may be used for the first five days as a supplement until your milk comes in.
- If one of a set of multiples is receiving DBM it can be made available to the others.
- All infants receiving TPN and for five days after starting feeds.
- Babies who are growth restricted
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## 1.6 Establishing a good milk supply – helpful hints

- If you are not getting any milk, persevere as the first milk, colostrum, is thick and can take some time to hand express. Continue expressing and the milk will come.
- Skin-to-skin contact with your baby will improve your milk supply.
- Your supply of breast milk is determined by how often you express; the more often you express the easier it is to increase your supply. If you do not express regularly you will make less milk.
- Always massage your breasts before starting to express, good massage techniques before and during expressing can improve milk volumes expressed.



- Expressing does not have to be at set three-hourly intervals but should be as often as is possible for you. Important times to express are:
  - before you go to bed.
  - once in the night between 02.00 and 04.00 am . This is important as your hormone levels will be higher and so you should produce more milk in the following 24 to 48 hours. Even if you collect very little milk at this time it is still beneficial.
  - as soon as you get up in the morning.
- Do not delay expressing just because your breasts do not feel full.
- Adequate sleep is also beneficial. Try to sleep for several hours before waking up to express and then sleep again, eg, if you go to bed at 22.00, wake up at 02.00, if you go to bed at midnight, wake up at 04.00. Hand expressing in the night-time may interrupt your sleep less than using a breast pump.
- Expressing at the cotside where you can see and touch your Baby can help you to express milk.
- If you can't be with your Baby when you express, having a photo of them or something that smells of them can be helpful.
- Two comfort cloths or "Miniboo's" can be helpful; one you keep close to your skin so it smells of you and the other you leave with your baby so it smells like them. When you see each other you can swap so you take the one that smells of your baby, having this with you can remind you of them and help you make milk and they keep the one that smells of you which is comforting for them. Ask your nurse for more information and to make sure you get your miniboo's.
- Stress can inhibit oxytocin and potentially impact on supply; relaxation techniques can be helpful and can be discussed with the psychology team.
- Poorly fitting funnels can damage breast tissue and nipples, cause pain and reduce supply, so do ask for help with funnel fitting if you think this could be a problem.
- Bright red vaginal blood loss in the first few weeks post-delivery can indicate that you may have retained placental fragments. Hormones that suppress milk production will be contained in these fragments; you need to go and see your midwife who will be able to provide support.
- Using a milk log can be helpful to record frequency of expressing and volumes produced. Logs are available through this app and on the unit.



- If you are not getting more than 600ml in 24 hours by day 10, do let the team know so we can see how we can best help you.
- The team will carry out regular assessments of your expressing in the first two weeks to check everything is going well and you have all the support you need.
- Try and eat a well-balanced diet and drink sufficient fluids. We have a useful teaching session and leaflet: 'Healthy eating for breastfeeding' which gives more detailed information about diet including the importance of taking vitamin D. Please ask your nurse for a copy or when the next session is scheduled.
- <http://newborns.stanford.edu/Breastfeeding/MaxProduction.html> This is a nice 10 minute video with tips for improving milk supply.
- You do not have stop drinking alcohol whilst you are breastfeeding. There is no evidence that having the occasional drink will harm your baby. Alcohol levels are highest 30 to 90 minutes after drinking. You do not need to "pump and dump", alcohol passes back into your bloodstream as your own blood levels fall. For your health you should not drink more than 14 units of alcohol over a whole week.
- Smoking is bad for your health and harmful near your Baby. Nicotine passes into your breast milk and may make your baby unsettled or reduce your milk supply. However, your breast milk is still important to your baby so still express if you do smoke. Try to restrict smoking to after expressing or feeding your Baby so you reduce the amount of nicotine that reaches your breast milk. If you do smoke please speak to a member of staff who can talk to you about how we can best support you and your Baby.
- Talk to the staff on a daily basis about how you are getting on.
- If you are producing a good volume of milk and your lactation is well established after the first couple of weeks it is possible to stop expressing quite so frequently. Talk to the team about how your expressing pattern can best support your supply and work with your routines.



## 1.6.1 Medications and breastfeeding

It is generally accepted that all medications transfer into human milk to some degree, although the level is always quite low. Only rarely does the amount transferred into the breast milk cause any concern. If in doubt it is the responsibility of the doctors and pharmacist to review the research that we have on drugs and make a clear decision as to whether it is safe to give your baby your breast milk.



**Medicines which you CAN take whilst breastfeeding**

- Painkillers e.g. paracetamol and ibuprofen
- Antibiotics e.g. penicillin
- Hayfever medicines e.g. Claritin, Zirtek
- Cough medicines which don't make you sleepy
- Asthma inhalers
- Vitamins at normal doses
- Medication to help with symptoms of depression.

Please contact the Drugs in Breastmilk Helpline if you need further information.

**MEDICINES WHICH YOU SHOULD NOT TAKE WHILST BREASTFEEDING**

- Aspirin
- Cold remedies e.g. Sudafed, without more information
- Sleeping tablets, without more information
- Codeine, without further advice/information

Do not take any medicines (including over the counter remedies) without checking with your doctor, pharmacist or BfN Drugs in Breastmilk Helpline.

Drugs in Breastmilk Helpline: 0844 412 4665

Ask your GP or pharmacist to phone the Drugs in Breastmilk Helpline if they need more information. They can also check the British National Formulary for Children. If a drug is licensed to be given to babies and children then it is likely to be safe to be taken by a mother who is breastfeeding. (See NICE Maternal and Child Nutrition recommendation 15).

**BfN** The Breastfeeding Network

You should continue to express your milk so your milk supply is not affected and it can be stored in the fridge or freezer until a decision is made.

If you have specific questions about medications or treatments, you can message the Drugs in Breastmilk information service Facebook page or email [druginformation@breastfeedingnetwork.org.uk](mailto:druginformation@breastfeedingnetwork.org.uk)

Further information and factsheets are also available on their webpages

<https://www.breastfeedingnetwork.org.uk/detailed-information/drugs-in-breastmilk/>

## 1.7 Milk storage and handling

You should always try to give your Baby your own fresh breast milk. There may be times when this is not possible and because you will be expressing a larger volume of milk than your Baby needs it is inevitable that you will have to store your expressed breast milk either at home or on the neonatal unit.

Breast milk that has been incorrectly stored or collected could become cross-infected.

Breast milk can become discoloured by blood or other pigments, causing its appearance to vary considerably. The appearance of your milk is of no clinical concern and can be safely fed to your Baby.

Breast milk should be handled hygienically at all times. You should wash and dry your hands before and after expressing or handling your milk. You should also observe good general hygiene practises including a daily shower and breast care.

Nursing staff will wear gloves when handling your milk, you don't have to.

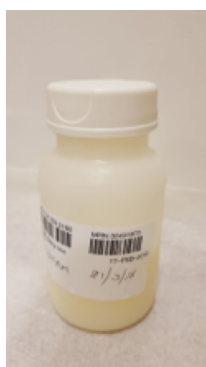
Spillages or splashes of your milk should be cleaned up immediately using a paper towel with soap and water and/or a sanitised wipe.

### 1.7.1 Collection of breast milk



The best way to collect colostrum is by hand expression. You will be given sterile syringes to catch the valuable drops.

You should label the syringes with your Baby's name and the date and time that it was expressed. It should then be put back in to the paper outer wrapper and brought to the neonatal unit where it can be given straight to your Baby. If for any reason you are not able to bring it straight away you should put it in the fridge. It can be safely stored for up to 48 hours.



If the colostrum will not be used within this time, the syringe and its wrapper should be put into a clean plastic bag and put in to the freezer soon as possible.

Whilst you are in the hospital setting we will continue to support your expressing journey and when you are ready to move on to electric pumping you will be provided with a clean milk collection kit weekly. These kits are to be used with the hospital grade pumps on the neonatal unit.

You may prefer to use your own personal electric pump or a manual hand pump whilst on the unit. These should be disinfected as per manufacturers' guidance and brought to the hospital in a new clean zip-lock bag.

Cleaning of milk collection kits for use in the hospital is covered in section 1.4.



You will have been made aware of the importance of frequent expressing both in the hospital and at home. You will be provided with a daily stock of sterile syringes or bottles to collect and store milk. You will also be given labels with your Baby's name on them. Each expression should have the date and time recorded on them.

Expressed breast milk should be consumed by your Baby as soon as possible after expression, but it is often necessary for milk to be stored.

### 1.7.2 Storage of breast milk

Breast milk should be kept at room temperature for as short a time as possible and refrigerated immediately after you have expressed it.

If you are expressing at home and have no access to a fridge you can keep your milk at room temperature for up to six hours. After this time, if not used you should discard it.

Milk kept in the fridge at home and in hospital should be stored at 2–4°C and used within 48 hours.

You should store it away from other food, in a clean plastic box. You should not store it in the door of the fridge as the temperature fluctuates too much when the door is opened. You should clean your fridge inside weekly, and the storage box daily. Any visible spillages should be cleaned straight away.

Milk which has not been used after 48 hours should be put in a freezer and stored frozen at -20°C for a maximum of six months at home.

Milk that is stored in the icebox of a domestic fridge should be transferred to the freezer as soon as possible or used within two weeks.

On the neonatal unit there are dedicated fridges and freezers allocated for the storage of your breast milk. Each nursery has its own milk storage fridge; your milk should be placed in a plastic storage box separate from other mothers' milk. It should be clearly labelled with your baby's name. Any milk you put in the nursery fridge should be clearly labelled.

It's a good idea to keep an eye on how much milk you have in the fridge at any one time. Milk that is coming up for 48 hours old should be put in the freezer. Ask your cotside nurse to put your milk in the freezer where it can be stored for up to three months in the hospital. Alternatively you could take it home and put it in your own freezer where you can keep it for up to six months. There are breast milk storage bags available which may make storing milk at home easier as they take up less space in the freezer than using bottles.

### 1.7.3 Handling of breast milk



Breast milk should be handled hygienically at each stage of collection, storage and when being fed to your baby. This is to reduce any risk of contamination.

Frozen milk should ideally be thawed in the fridge. If it is thawed at room temperature it should be placed in the fridge or used as soon as it has thawed.

If frozen milk has to be thawed quickly in an emergency, the best way is to hold the bottle under cold running water. Extreme care should be taken if using this method; you should gently shake the bottle, but make sure that the water does not enter the bottle via the cap.

Do not leave the bottle standing in a bowl or jug of water as they could easily tip and water could enter the bottle.

You should never use a microwave oven to thaw milk as it destroys some of the components of breast milk.

Frozen milk which has been defrosted should be used within 12 hours or discarded. Once removed from the fridge, defrosted or fresh milk should be used within two hours.

### 1.7.4 Feeding your breast milk to your Baby

You should warm your milk to body temperature before giving it to your Baby. At home you can use a bottle warmer to warm your milk as long as you follow the manufacturers' instructions. You could also stand the bottle of milk in a jug of hot water. Drop some milk onto the inside of your wrist to test it's not too hot.

In hospital the use of multi-use water-filled bottle warmers is not an acceptable practice because of possible contamination from the water that is used.

On the neonatal unit we use a warm air method of heating your Baby's milk.

An individual liner will be provided for you to use. The liner will be changed weekly unless it becomes damaged and needs replacing before that. The liner needs to be cleaned in between each use with a sanitised wipe and left to air dry.





### 1.7.5 Transporting milk

Home to hospital: You should always bring your milk to the hospital in an insulated container or freezer bag that can be easily cleaned.

Coolant blocks should be used to maintain a cool temperature.



### 1.7.6 Record keeping

All bottles of milk should be labelled as follows:

- the baby's hospital label with the baby's name and hospital number
- date and time of expression.

### 1.7.7 Storage times for Maternal Expressed Breast Milk (MEBM)

**NHS**  
Imperial College Healthcare  
NHS Trust

Neonatology

## Breast milk - storage, handling and transport

### Information for parents

When you are expressing milk at home it is very important that it is stored, handled and transported carefully to make sure that it is safe to give to your baby. This leaflet explains the steps you should take to help keep your milk safe. If you have any questions about the information below please speak to the nurse looking after your baby.

Storage times for mothers expressed breast milk (MEBM) – once these times have passed you must throw the milk away						
	Freshly expressed, stored at room temperature	Stored in a fridge at 2-4°C	Removed from fridge before feeding then brought to room temperature	Frozen and stored at -20°C	Thawed (defrosted) and stored at 2-4°C	Thawed and kept at room temperature before feeding
<b>In hospital</b>	Up to 4 hours	Up to 48 hours but, if not used within this time, freeze as soon as possible.	Up to 4 hours	Up to 3 months	12 hours once fully thawed	Up to 4 hours
<b>At home</b>	Up to 6 hours	Up to 8 days if stored at 2-4°C, up to 3 days if stored at 5-10°C. Freeze as soon as possible after expressing if to be kept for more than 8 days	Up to 4 hours	Up to 6 months. But only 2 weeks if in the ice box of a domestic fridge.	12 hours once fully thawed or 24 hours from the start of defrosting in a fridge	Up to 4 hours

## 1.8 Problem solving: common conditions and symptoms – what to do?

During your lactation journey you may experience some of the following. It's best to discuss your concerns and symptoms with your nurse or lactation consultant as soon as possible to get the individual advice you require for your issue.

### 1.8.1 Flat nipples

Women frequently worry, or may even be told, that their nipples are flat and they won't be able to breastfeed easily as their baby won't attach. During pregnancy and lactation the nipple tissue becomes more elastic and you will see when you hand express or use the pump how elongated they become. Sometimes by massaging and expressing a little you can draw the nipple out. Very few nipples are truly tethered to the extent that they cannot be drawn out a little. The baby is able to take the breast tissue into their mouth and with sucking take it right to the back of their mouth. They do not in fact attach just to the nipple but use it as a guide to take a bigger mouthful of breast tissue including the brown area around the nipple.

### 1.8.2 Pain or sore nipples

Pain and discomfort can be caused by poor expression technique – do ask someone to help check your technique and to see if there is anything to do to make it less painful. Using less suction pressure or a different size funnel may help.

If you have pain when breastfeeding it may be due to ineffective attachment – ask for support to help correct this.

If you have sore or cracked nipples, leave them exposed to the air as much as possible. If expressing you may want to go back to hand expressing. If feeding, try feeding from the unaffected breast until the other heals. It is important to keep the milk supply going in the affected breast by expressing milk.

Sometimes you and/or your baby may have thrush that can cause pain. The symptoms of thrush for you are itching, stabbing, burning pain. Your nipple may look red and shiny or have small white spots. You may notice a white coating or spots on your babies mouth or tongue

Talk to the lactation consultant team for further support.

### 1.8.3 Engorgement

Engorgement can be a term used to describe the breast fullness that occurs around three to five days after delivery of your Baby, when your milk 'comes in'. It is usually quite shortlived but can be very uncomfortable and your breasts may feel very hot, lumpy and hard. Engorgement can also happen at other stages of your breastfeeding journey if milk is not effectively removed from the breast.

It may be that you need to express more frequently to help your breasts feel more comfortable. You also may need to express by hand to enable you massage and target the areas that feel more full.

If you are using an electric breast pump make sure that the pressure of the pump is gentle as sometimes higher pressures can make the engorgement worse.

You may find that a warm compress or pouring warm water over the breasts – say in the shower – will help get the milk flowing.

### 1.8.4 Mastitis

Mastitis or inflammation of the breast is characterised by a red, swollen and usually painful area on one of the breasts. It may also present as a lumpy breast, which feels hot and aching, or as a flu-like illness (aching, raised temperature, shivering etc).

It is important to continue to breastfeed and/or express milk to keep your milk flowing and keep the breasts well drained. Expressing regularly and expressing after feeds if the breast does not feel emptied are ways to both prevent and help mastitis by helping to prevent blocked ducts and engorgement.

Antibiotics are useful in the case of a bacterial infection. If you think you may have mastitis let us know and discuss this with your GP or a pharmacist who may recommend ibuprofen or paracetamol.

If your GP prescribes antibiotics, these can be safely taken whilst breastfeeding. If you develop mastitis, it is not necessary to stop giving the milk to the baby and you can be reassured that your breast milk will continue to make a very important contribution to your Baby's nutrition and care.

Useful leaflet for parents and health professionals about mastitis:

<http://www.breastfeedingnetwork.org.uk/wp-content/dibm/BFN%20Mastitis%20feb%2016.pdf>

### 1.8.5 Domperidone

If you have a borderline milk supply (350 to 450 ml or less) at around two weeks after your Baby was born, especially if you delivered extremely preterm, you may need the help of what is known as a galactagogue. Our galactagogue of choice is domperidone. As a side effect, domperidone raises prolactin levels, which drop around two weeks after delivery. It is not a wonder drug and relies on expressing frequently including at night. Domperidone is not licensed as a galactagogue so therefore needs to be prescribed by your GP. We can give you a letter and information to take to your GP to get a prescription. We also have a parent information leaflet you can read to understand more – ask your nurse for a copy. Your nurse should discuss the potential use with a member of the breastfeeding team who can then offer support and a letter for your GP if required.

Useful leaflet for professionals and parents about domperidone:

<http://www.breastfeedingnetwork.org.uk/wp-content/dibm/Galactagogues.pdf>

## Key messages and reflection:

After this chapter you should be able to:

- understand the value of breast milk for your sick or preterm infant
- help you to understand how can you can get your milk supply off to a good start
- be familiar with where to get support and self-help strategies if things are not going so well.

## Further learning in this topic

If you wish to know more:

- ask our neonatal team for support any time
- ask for extra support from one of our lactation team.
- use this app or your expressing leaflet/log to record notes and questions
- attend small group teaching in topic: Making milk for your baby
- You can use the expressing diary to record your volumes. You can show this to our staff and discuss any further support.

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## Resources

<http://www.bestbeginnings.org.uk/small-wonders>: This website has a range of information for parents of sick or preterm babies including films on expressing, kangaroo care and feeding.

[www.breastfeedingnetwork.org.uk](http://www.breastfeedingnetwork.org.uk)



**National Breastfeeding Helpline: 0300 100 0212**

[www.expressyourselfmums.co.uk](http://www.expressyourselfmums.co.uk) for pump hire and breastfeeding resources

