



Breastfeeding

*The NUK Breastfeeding Guide
in association with Willi Bruhn,
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Preface

Dear Expectant Mothers,

During the course of the last few months you will no doubt have done a great deal of thinking about pregnancy and birth, looking forward to that great moment when you hold your own little miracle in your arms. Everything will be new, exciting and of course also strenuous at times. But let me as a paediatrician reassure you: You can manage it! Mothers really are quite amazing!

After the birth, breastfeeding will be one of your main concerns. Most mothers want to give their baby the best that nature has to offer – breast milk. For many, breastfeeding will work right away but sometimes, particularly in the early stages, there may be some difficulties.

The well-meant advice from your own parents is frequently not that helpful, because most babies born in the 1970s were bottle fed right from the start – which of course worked. However, nowadays we understand the benefits of breast milk, how unique and inimitable its composition is, as well as the psychological importance that breastfeeding holds, both for mother and child.

With this guide, we would like to offer our assistance during the nursing period with practical answers to the most important and frequently asked questions.

Even when problems occur, there are certain to be ways of overcoming them. You can obtain help from doctors, midwives, other health professionals, or breastfeeding self-help groups. If you have your own reasons for not breastfeeding, then you don't need to feel guilty. The most important thing is that you stand by the decision that you have made. The happier you are, the better it will be for your child.



Together with NUK, we hope you enjoy reading this guide and find the content helpful.

A handwritten signature in black ink that reads "Willi Bruhn".

Willi Bruhn

(Paediatrician in the Neo-natal department of the Barmbek General Hospital, Hamburg, Germany)



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The First Drops

Calories and antibodies that he or she needs in the first few days. Just a few drops are required to satisfy your baby's needs.

The big day has come!

Your baby is born. You are still recovering from the excitement of the birth, and already you are starting to take care of the new arrival. The first drops of milk that your baby receives are called colostrum. This "pre-milk" is a fluid of incomparable nutritious value. The production of colostrum starts sometime

during the second half of pregnancy and continues until approximately the fifth day after the birth. In this short period of time it gives baby everything he or she needs for the best start in life.

Colostrum differs fundamentally in its composition from mature breast milk: It contains more water, vitamins and minerals, and less fat than the mature breast milk which follows. What makes colostrum so unique and vital for a newborn baby is the high proportion of specific proteins, called immunoglobulins. As a comparison: 100 ml of colostrum contains five grams of protein, whereas 100 ml of breast milk contains only one gram. These proteins protect your baby effectively against illness. In the intestine, they coat the mucous membranes like a protective film, preventing among other things the absorption of harmful foreign proteins into your infant's bloodstream.

Moreover, the immunoglobulins contained in colostrum give protection, at an early stage, against pathogens with which you and your child come into daily contact.



For this purpose nature has developed a special mechanism: The mother's body is able to build antibodies almost immediately against the most diverse germs. These are passed onto the baby via the mother's milk in the form of proteins. The high levels of protein enable baby's tiny body to fight swiftly against potential pathogens, thus offering optimum protection.

In addition to this by feeding baby breast milk, only specific "good" bacteria settle in the gut. These bacteria also give the stool of a healthy breastfed infant its characteristic acidic smell. Lastly, colostrum is easier to digest than mature breast milk or baby formula and it promotes bowel movements. This way the digestive system functions perfectly right from the start.



Your stay in hospital

Nowadays, in most hospitals you will receive a gentle introduction to breastfeeding. Next to medical care, the most important thing you will receive will be the support given to establish breastfeeding. Of course, midwives and nursing staff will always be around to assist you, and it is particularly convenient if the hospital provides nursing rooms. If you are sharing a ward with other mothers, nursing rooms offer you an opportunity to retreat to feed your baby, for example when there are visitors on the ward. Nursing rooms provide mothers who wish to breastfeed their babies, privacy and peace and quiet.

If you haven't yet selected a hospital, I recommend that you also take into consideration when looking around whether nursing rooms are available. Also ask whether your baby may stay with you in your room ("rooming-in"). The more experience the hospital team has in this field, the better it will be able to meet your requirements.



The beneficial substances in breast milk can be absorbed much more easily by an infant than the same substances in formula.

This is because breast milk also contains the enzymes needed to digest the various substances.

Mature breast milk – for energy and growth

You will be amazed at how quickly your baby continues to develop after the first few days in hospital. The reason for this is once again the wonderfully harmonised processes going on between mother and child. During the course of the first few days the composition of your breast milk has adapted completely to the changed needs of your baby.

It no longer contains so many proteins – instead it now has more fats, carbohydrates, vitamins, minerals and trace elements, all of which help

your baby grow and thrive. The only type of sugar it contains is lactose. Incidentally, breast milk even changes during the actual breastfeeding process. Although the milk has a thin consistency during the first five minutes, it then becomes thicker, as the fat content increases threefold. This change has a highly practical benefit: First the milk quenches baby's thirst, and then baby can continue sucking happily until satisfied.

Naturally baby can also be fed with formula, as nowadays there is hardly a food type that undergoes more stringent controls. What distinguishes breast milk fundamentally from formula, however, are the antibodies against pathogens. Breastfeeding also has a few more practical benefits. Breast milk is always germ-free, always readily available, always at the correct temperature and it costs nothing.

Breastfeeding is food for the soul

Breastfeeding is not simply the consumption of food. Through breastfeeding you bond with your baby and can fulfil baby's great need for love, warmth and security in a unique way.

Of course, mothers who bottle feed love their babies just as much as those who breastfeed. But before you decide against breastfeeding – for whatever reasons – I would like to pass on something I've learned in my many years of experience: Breastfeeding creates an extremely close physical relationship between mother and baby. Your baby can really feel, smell and taste this when sucking at the breast. Skin contact is of immense importance to infants, as it fulfils their great need for love, warmth and security. Giving baby this love and warmth lays an important foundation for the development of your baby's complete trust. Breastfeeding promotes this close contact and the intensive bonding between you and your child in a unique way.

As well as strengthening the bond with your child, breastfeeding can also mean giving intensively, or being there for another human being. An essential prerequisite for the positive experience of this close bonding and your baby's dependence on you.

New mothers, however, will also experience moments that are not so wonderful. The birth itself is a major physical exertion from which it takes time to recover. Almost as soon as the baby is born, it's time to start breastfeeding. Don't worry if everything doesn't go smoothly from the start – this is quite natural. Particularly with the first child, and during the first feeds, good preparation can help towards minimising any feelings of insecurity.

And if it still doesn't work out quite as planned, don't be afraid to ask for advice or help from your midwife, paediatrician or health professional. You can also exchange ideas and suggestions at breastfeeding self-help groups.

But not only breastfeeding is of significance for a close mother-child relationship. The psychological value of that first eye contact with your newborn baby cannot be overestimated. It is such an intense contact – for fathers too – and one that you'll never forget. This is why you should take baby into your arms as soon as possible after the birth.



In hospitals we often find that precisely this intense moment is decisive for many mothers as to whether or not to breastfeed.

How breast milk is produced

As early as the first weeks of pregnancy your breasts will start to prepare for breastfeeding – the mammary tissue will increase and small sack-like glands

(alveoli) will start to form colostrum. Incidentally, the quantity of milk later produced bears absolutely no relationship to the original size of the breast. When baby sucks on the breast your brain will receive the signal to produce two hormones which regulate both the production and flow of milk:

- Prolactin: This hormone stimulates lactation. The more frequently the infant sucks at the breast, the more milk will be produced.



The more frequently a baby sucks at the breast, the more milk will be produced, with the let down reflex being triggered up to six times per feed!

Breastfeeding has long-term benefits – for you and your baby.

Children's health

Studies have shown that, due to the swift build-up of immunity from breast milk, breastfed children are ill less frequently than bottle-fed children. Infections of the middle ear, diarrhoea and infections of the respiratory and urinary tracts occur much less often. Breast milk even offers long-term protection for little ones: Infections and certain intestinal conditions were observed to occur less frequently in adults who were breastfed as babies. The probability of developing Type 2 diabetes is also considerably less for breastfed infants, even for those at higher risk.

Breastfeeding has an enormous influence on a child's health.

Never again will you be able to do so much for the health of your child as in the first few days and weeks of his or her life.

- **Oxytocin:** This hormone helps to contract the muscle cells in the breast which surround the alveoli, squeezing milk out into the milk ducts. The milk is released to the sucking infant (the let down reflex), and you will experience a pulling or prickling sensation. As this reflex is always triggered in both breasts simultaneously, you will notice that milk will also leak from the breast from which baby is not currently sucking.

Regular sucking by your infant will activate and sustain production of the hormones. As it is difficult to estimate just how much milk your baby will take at each feed, and most mothers wonder at the beginning whether their baby is really getting enough, I recommend that you leave it completely to your child. Please also read the section "What is a breastfeeding crisis?" on Page 20.

Your health

Breastfeeding is not only good for your baby, it also has health benefits for you. The hormone oxytocin, which is produced during breastfeeding, has a further important function in addition to contracting the muscles in the breast (the let down reflex): It stimulates contraction of the uterine muscles, helping the uterus to recover more quickly. Early and regular breastfeeding is the best protection against bleeding in the post-natal period and infections during confinement. New research confirms that the risk of breast cancer among mothers who breastfeed is lower than with those who do not.

As shown by the German Cancer

Research Centre, the risk of developing breast cancer is around 14% lower for mothers who breastfed for six months or more, than for women who did not breastfeed.

Incidentally: As a breastfeeding mother you will probably live a more healthy lifestyle. You will be more concerned about your diet and your well being. You are likely to maintain certain lifestyle changes – such as not smoking or drinking alcohol – beyond the pregnancy. In some cases these positive changes in the way you live will also apply to the father.

In order to minimise the risk of allergy for your child, it is imperative that you breastfeed for a longer period and create a smoke-free environment.

Breastfeeding and allergies

The frequency of allergy-related illnesses in children is around 20 to 30% and rising. This risk of allergies can be reduced by up to 50% if babies are breastfed exclusively for the first six months. This is because allergies are triggered, among other things, by the absorption of foreign proteins via the intestine. Foreign proteins are present in baby formula as well as in cow's milk and should therefore be avoided wherever possible. And you should also consider: Passive smoking is one of the main causes of allergy-related illnesses in children!

Particular care must be taken with children who have two direct relatives (father and mother or father and sibling for example) affected by allergy-related illnesses (neurodermitis, allergic asthma and hay fever fall into this category). The risk in these cases of a child developing an allergic condition is greatly increased (approx. 60 – 70%). If this could affect you it is wise to speak with your paediatrician, preferably before the birth, in order to clarify whether any additional changes should be made to your diet or home environment.

The First Feed

Your baby is born with an innate survival instinct. Virtually straight after birth an infant will seek the breast and try to suck.



Baby needs a “good mouthful of breast” to be able to feed properly, in other words, a large part of the areola, not just the nipple.

After a normal delivery it is highly important that your baby is laid on your stomach as soon as possible. This way you can both get to know each other – using all your senses. This important process is known as bonding and forms the basis of all human relationships.

In most cases your baby will soon start to seek the breast and try to suck – a great experience for every mother. At this point the sucking reflex of the infant is particularly strong. After just a few hours it is no longer so pronounced, which can make the first breastfeeding experience considerably more difficult. Incidentally, after breastfeeding for the

first time, it is quite normal for baby only to want to feed once or twice more in the next 24 hours. The nutritious colostrum will have given baby everything he or she needs. So now is the time for you and your baby to take a deep breath and recover from the birth.

The correct breastfeeding technique – how to get it right

Breastfeeding may be the most natural thing in the world, but that does not mean it is necessarily easy. Breast infection (mastitis) and sore nipples are often the result of an incorrect latch on to the breast or an inappropriate breastfeeding position.



Support your breast with your whole hand cupped.

“Toughening up” the nipples to prepare them for breastfeeding before the birth – e.g. by rubbing with a cotton hand towel – puts unnecessary strain on the sensitive skin. However, you can prepare yourself by getting familiar with the technique and the various positions before breastfeeding for the first time:

Baby should be offered the breast with the C-hold, i.e. the fingers lying flat under the breast, with the thumb above the nipple. The important thing here is that the fingers do not touch the area around the nipple (areola), thus enabling the infant to take it into



To remove the nipple push your little finger gently into the corner of baby's mouth.

its mouth. Baby's mouth must be wide open for this. You can help by gently stroking baby's cheek or lower lip with either the nipple or finger. For optimum success with breastfeeding I also recommend that you observe in particular the following three points:

- Once baby's mouth is wide open, remember baby-to-breast and not breast-to-baby.
- While feeding you should support the neck of your baby, not the head.
- Body position is also important: Baby's chest and tummy should form a straight line turned towards your body.

Once you notice that your baby has emptied the first breast offered and is simply enjoying sucking, you can carefully remove the breast by gently pushing your little finger into the corner of baby's mouth, thus releasing the suction. See whether baby needs to bring up wind and then offer the other breast.

Remember which breast baby fed from last, and start next time with that one. This sequence is important, because when both breasts are emptied it helps stimulate the production of milk and prevent plugged milk ducts.

Inverted nipples

Women with inverted nipples need not feel insecure about breastfeeding. Baby may just need a little more practice to latch on to the nipple. This is where breast pumps can help. Use a pump gently and briefly before breastfeeding. The vacuum that forms pulls the nipples somewhat outwards. Try to avoid the use of nipple shields and soothers, as baby may become confused by the considerable difference between these and the mother's nipple. This is particularly the case in the first six weeks. It is advisable to seek the advice of your doctor or midwife before the birth.

Your baby has the correct sucking technique when he has taken the whole areola into his mouth.

Then you should be able to hear his swallowing sounds, followed shortly by the audible sound of the milk being digested; the tense feeling in your breast should subside and baby will also visibly relax – all these are signals that your baby is feeding correctly.





Breastfeeding positions

The Reclining Position

This feeding position is the most comfortable after the birth and in the first few days, when sitting may still be uncomfortable. Your infant lies in this position across your tummy, with you lying slightly propped up, supporting your upper body with pillows.



Side-lying Position

I would recommend this position for night-time feeds or when you wish to relax. Both you and your child should lie on your side, tummy to tummy, so that baby's mouth is level with the nipple. Your arm and shoulder will be flat on the mattress, with only your head being supported by a pillow. Baby's back can be supported in this position by a rolled up towel or similar.



The Cradle Position

The cradle position is the best-known feeding position. Baby's head will lie in your arms, with your hand supporting baby's bottom and with the tummy turned towards you, so that good body contact is possible. Support your arm with a cushion or armrest, so that you don't have to tense your muscles raising your shoulder unnecessarily high. Putting your feet up will help you to relax in this position (e.g. on a footstool).



The Clutch or Football Hold

This position is particularly suitable for feeding twins or with an older child that also wants to lean against you. The child will lie tucked under your arm, hip to hip, supported by cushions as required. Your lower arm will be supporting baby's back. You should bend over slightly to put baby to the breast. As soon as baby is feeding, you can relax and lean back. This position is especially good for emptying the lower area of the breast.

Bringing up baby's wind

Right from the point at which you start breastfeeding you will realise that your baby will perform the expected "burp", either during or after feeding. Bringing up wind is vital for your infant's well being. This is because babies swallow air at regular intervals when feeding, and this collects in the stomach, causing discomfort.

Bringing up wind releases this pressure. It is best to lay baby over your shoulder, patting lightly on the back until you hear the "burp".

Bringing up wind is important after breastfeeding, as babies swallow air when sucking at the breast, and this collects in the stomach, causing discomfort.

If the baby doesn't burp, lay your baby on his or her side, then pick him or her up again. Try and see what works best for your child. Your baby may be one of those that bring up wind while feeding. All babies are different, and much depends on how they suck. Babies that take it easy and suck very slowly tend to swallow hardly any air and will often not need to bring up wind.

Breastfeeding at home

Many questions, many answers

Pregnancy and birth will make demands on your body which will then need time to gradually recover at home. Mood swings and feelings of insecurity in the first few weeks are quite normal. I have, therefore, put together some answers to the questions most frequently asked during the first few weeks of breastfeeding:

How often should I breastfeed?

Basically you should breastfeed your baby to suit both of you! This can mean “on demand” or when baby becomes restless, or when your breasts become full and tense and you feel the need for relief. In this situation, wake your baby and encourage feeding. As a guideline, eight feeds per day are normal for the first few weeks. If your baby asks for one or two more or less feeds, there is no cause for concern. Babies are just as individual as we are and have different needs.

When a baby cries from hunger, this is the most urgent signal. You can, however, recognise hunger signs before this point by one of the following symptoms:

- General restlessness, tossing and turning
- Moving the head from side to side
- Hand-to-mouth movements
- Searching and sucking motions

Once you get to know each other better, it will become easier to recognize the signs your baby is giving you.

How long should a feed last?

In the first two to four days I would recommend short, but frequent feeds, as this makes the production of milk considerably more effective and helps prevent the nipples from becoming sore.

After this, a rhythm will gradually form of its own accord. The length of feeds will then no longer need to be regimented. As a guide, I would say a total time for both breasts of between 20 and 45 minutes per feed. This gives both breasts the best chance of being emptied.



Is my baby getting enough milk?

In the first four to six days a newborn baby may lose 10% of its birth weight – and this is quite normal. After that baby will rapidly gain weight. If your infant is healthy and full-term it will suffice if the medical professional team weighs your baby once a day.

Weighing before and after every feed will only cause anxiety. Newborn babies vary enormously in the amount of breast milk that they drink, sometimes drinking only a very small quantity. The amount of milk taken in one day, the weight gain and the contentment of your child are the decisive factors.

At 10 to 14 days your baby should have regained the original birth weight. If he or she now continues to gain weight and produces wet nappies several times a day and a bowel movement at least once a day, you can rest assured that your baby is getting enough milk.

Bowel movements say a lot about the health of your baby: The smell (acidic) and the colour (yellowish) are important. The consistency, on the other hand, can vary considerably without giving any cause for concern.



What is a “breastfeeding crisis”?

After approximately 14 days and at around six weeks your baby will go through leaps in development, both physical and mental. In these phases baby will need considerably more milk and may want to feed up to 12 times a day or more. These phases often unsettle mothers considerably and are therefore also known as “breastfeeding crises”.

You need not worry that your baby is not getting enough milk. By putting your infant to the breast more frequently you can increase milk production. After just one or two days your breasts will have adapted to

an increase in demand and baby will become satisfied again with fewer feeds. Top-up bottle feeds are definitely not advisable at this point as they can have a detrimental impact on breastfeeding. But you may rest assured that with time you will come to recognise the signals your baby gives you and you will react accordingly.

Should you have any questions give your midwife or health professional a call. Try also not to put yourself under unnecessary pressure: Being a good mother is more than simply being able to breastfeed immediately and successfully everytime!

Breastfeeding problems and their solutions

The first few days with your baby are exciting – everything is new and has to be learnt. This also applies to breastfeeding. Your infant has to practise latching on to the nipple and sucking correctly. And you are also gradually learning to react to the signals that your baby gives you. When is baby hungry? And when does he or she simply want to cuddle? During this mutual learning process mistakes can occur, resulting in problems with breastfeeding. Mothers should not, however, become discouraged when this happens. Once the causes are known they are usually swiftly rectified. My experience has shown that most mothers overcome their initial problems to enjoy happy and problem-free breastfeeding. What can go wrong and how to obtain help:

Plugged milk duct

A plugged milk duct will cause a tense feeling, pain and a hardening inside the breast, and sometimes a reddening of the breasts may occur. The most frequent cause of this is baby not being put to the breast often enough, resulting in the breast not being completely emptied. In these cases more frequent feeds will help.

If your baby is taking less – because of a deeper sleeping phase or a cold for example – this may also result in a plugged duct. In this case you should

express the excess milk, freeze it and keep it for later as required.

Even an incorrect latch-on technique can cause a plugged duct. Take care to ensure that your baby latches on not only to the nipple, but also the areola, as only then can the breast be completely emptied.

A helpful tip!

Friends and relatives like to give toys or baby clothes to celebrate the birth of a child. Often you will receive more than you actually need.

A tip: Let them donate time instead by helping with the daily chores – for example cooking, cleaning and shopping. While feeding your baby, peace and quiet is particularly important for you and stress should be avoided. Household responsibilities should be shared. The more time you have for your little one at the beginning, the more content you will be, and the more likely you are to succeed with breastfeeding.



Using two fingertips massage the breast tissue using a circular motion. Start at the outer part of the breast, massaging in a spiral movement towards the nipple.

What should I do if I have a blocked milk duct?

If you have a blocked duct, you should contact your midwife without delay. She is the best one to establish the cause and offer help accordingly. While you are awaiting for the midwife/health professional to arrive you can take some positive measures to relieve the pain yourself:

- Massage the hard areas of the breasts under a warm shower and then cool them down again with a cold compress e.g. of cabbage leaves, yoghurt, or similar (but not ice). The nipples, however, should not be treated.
- Try out the different breastfeeding positions to enable all parts of the breast to be emptied. You may manage to position your baby such



Bending over, stroke the breast from all directions towards the nipple, keeping your hand flat.

that the lower jaw is facing the direction of the painful areas when baby is feeding, thus allowing the breast to be emptied in precisely those areas.

Preventive measures to avoid breast infections:

- **Change breast pads after each feeding session. These pads should be highly absorbent and should trap moisture inside the pad, leaving the nipples dry. (See Nursing aids).**
- **Wash your hands each time before touching your breasts to prevent transmission of germs!**



Now place thumb and index finger flat on the breast, a few centimetres behind the nipple, expressing the milk with rhythmic, rolling movements.



Change the position around the nipple. However, do take care! Never pinch, pull or squeeze the breast.

Sore nipples and breast infections

Nipples become sore if baby is either latched on incorrectly or fed too frequently. Some babies want to suckle continuously at mother's breast, simply to satisfy the sucking desire. Nipples, however, are not meant to replace a soother.

What to do if nipples become sore

If your nipples become sore, you should contact your midwife or health professional as this can easily turn into an infection. You can, however, help yourself by taking the following steps:

- Allow your nipples to "air out" frequently.

- Express a few drops of milk after breastfeeding and let them dry on the nipple – this is better than any cream.
- Application of purified lanolin promotes healing.
- If one breast is affected more than the other, then for a while take extra care with the affected breast, i.e. let your baby suckle only for a short time on the sore breast and express the remaining milk in order to prevent a blocked duct.
- Use nipple shields (see Nursing aids) for a short time only. They may relieve the symptoms, but they do not treat the cause.



Nursing aids

Nowadays there are many practical nursing aids for mothers to help alleviate breastfeeding problems, thus promoting problem-free breastfeeding:

Breast pumps

Breast pumps offer some freedom during the breastfeeding period. This is because they allow the healthy breast milk to be expressed in a simple manner, to be given to baby later from the bottle as required – whether at home or out and about, whether by you, your partner or another carer. Breast pumps are particularly useful for mothers wanting to return to work quickly without having to wean the infant off the breast immediately – they can then build up a supply of breast milk for the whole day without a problem. If breastfeeding has to be

interrupted due to mother becoming ill (e.g. in cases some medication taken could be harmful to baby), expressing the milk can prevent total weaning. During treatment simply express the milk as often as if you were breastfeeding – at night too – and then discard. This way you can maintain optimum milk production for later.

As mothers have completely different needs and requirements when breastfeeding, NUK offers both a manual breast pump in addition to an electric one. The electric pump is characterised by an individually adjustable suction strength. With the use of a button to interrupt the suction even baby's natural suction motion can be simulated to a large extent. The gentle and rhythmical pumping is easy on sensitive or sore nipples.



Expressed breast milk can be kept refrigerated for 24 hours, and in a freezer compartment for up to 3 months. The longer the milk is frozen, the more the antibodies will lose their effectiveness.

The Comfort manual breast pump also has an individual suction strength adjustment. It is especially practical as it can be operated easily using only one hand, and the suction funnel has a silicone insert that is soft and pleasant on the skin – creating a feeling of well being.

Nipple shields

Should breastfeeding become difficult due to sore or sensitive nipples, the tried-and-tested nipple shield made of latex or silicone will help here. These also offer effective protection against those first sharp little teeth.

Cold compresses

Cold compresses relieve pain caused by plugged milk ducts or breast infection. Cold compresses should, however, only

ever be put in the refrigerator, never in the freezer compartment. Please note that cold compresses should only be used after breastfeeding, as warmth is required before feeding to ensure optimum milk flow.

Breast pads

The breasts continually leak fluid during the breastfeeding period, and this is completely normal. Don't let this disturb you. Breast pads protect clothing, keeping it dry. We recommend breast pads that trap the fluid securely in the inside of the pad (e.g. NUK Ultra Dry Breast Pads). These will help to protect the skin, keeping it noticeably dry. Important: In the interest of hygiene, the pads should be changed after every feed. This will help prevent breast infection.



Maintaining good health during the nursing period – essential questions

What about smoking and drinking during the breastfeeding period?

You should refrain from smoking, not only during pregnancy, but also during the breastfeeding period. The chemicals in tobacco (e.g. nicotine) go straight into the mother's milk and are of a higher concentration than in the mother's blood. This means that, to a certain extent, when you smoke one cigarette, your baby smokes two. For a developing organism this has graver consequences than for an adult. Studies have shown that for children of mothers who smoke, the risk of allergies is considerably higher than for

children of non-smoking mothers. It is also suspected that there is a higher risk of cancer later in life.

Our experience in hospitals has also shown that there is no point in forcing a mother to stop smoking. If the urge is too strong, the addicted mother's frustration will be directed towards the child.

Therefore: If you can't manage to give up smoking completely, you should at least try to smoke no more than three to five cigarettes a day. If you exceed this quantity, you should talk to your doctor as to whether it would not be better for your child if you stopped breastfeeding completely.

Alcohol is also only permitted in very small quantities while breastfeeding. A glass of wine, beer or champagne is acceptable if consumed directly after feeding. The period until the next feed should be as long as possible to enable your body to break down the alcohol.

Diet – what should you be aware of?

Good news here: While breastfeeding, basically you can eat what you like – you do not have to avoid anything. If your baby is at higher risk of allergies you should talk to your health professional (see page 11). Every nursing mother should have a well-balanced diet. Calcium (in milk and milk products) and iodine (e. g. in salt water fish and iodine salt) are particularly important after the birth. Too many pulses may (but not necessarily) give

Research has established that a mother's diet does not affect the quality of the breast milk: Its composition is virtually the same worldwide, although women differ greatly in their eating habits.



baby flatulence; too many citrus fruits may give baby a sore bottom. Observe your baby and you will soon see what he or she can tolerate and what not. You should drink plenty of fluids, as your body will now need more! Keep a glass of water by your side for you to sip while breastfeeding.

If you are a vegan, i.e. someone who refrains from eating not only meat, but also all animal products such as milk, eggs and butter, it is imperative that you seek advice from your health professional, in order to ensure that your child does not suffer in any way. The same applies to mothers who are underweight.



Is it safe to take medication whilst breastfeeding?

Taking medication whilst breastfeeding is not generally recommended, as virtually every medicine is passed into the mother's milk, and this could be potentially harmful to a baby. You should, however, discuss this with your doctor or health professional – they may be able to suggest a harmless alternative. If, in exceptional circumstances, and when there is no alternative other than to take medication, simply express your breast milk, instead of breastfeeding. This will sustain your milk supply and you will be able to resume breastfeeding after you have finished the course of the medication.

Are there harmful substances in breast milk?

In the last 20 years the level of harmful substances in breast milk has been reduced by 50 % and in Germany this is no longer considered a danger. But

what is important to know is that harmful substances can be passed into breast milk when fats are broken down i.e. when the mother is on a diet. It is therefore vital that you do not diet while breastfeeding!

Are exercise and breastfeeding compatible?

It is unlikely that you will want to participate in any sports activities for a while after the birth, as your body will still be somewhat weaker, and breastfeeding is quite strenuous in itself. If you are one of those women who really need physical activity you should not start any sport until the post-natal bleeding (lochia) has stopped and then gradually begin with a light programme. Unless your nipples are cracked or sore, swimming is a suitable activity. You should ensure, however, that you shower well afterwards to rinse off any chlorine.



The earlier you express to your employer your wish to return to work as well as your wish to breastfeed, the easier it will be to reach a mutual solution. Find out what your rights are with respect to employment law. This way you will be prepared for the discussion.

Breastfeeding and your career

If you decide to go straight back to work after the birth of your child there is no reason why you should not do so. Going back to your job does not necessarily have to be a decision not to breastfeed. There are some practical aids here to make your day easier. One example is the breast pump – you can easily keep a supply of expressed milk in the refrigerator. This expressed milk can then be used by the father, or whoever is looking after your baby, to feed your baby whilst you are at work. Your baby will then still receive the full quota of vitamins, proteins and antibodies to help protect him/her against infections.

Combining work with breastfeeding does, of course, demand considerable organisation on the part of the mother – but it is worth the trouble.

Gaining the support of your employer and colleagues is essential for a working mother wishing to breastfeed – but this does not always happen. I would, therefore, recommend that you speak to your employer and work colleagues as soon as possible about your decision to breastfeed, and the effect this might have on you and them. A joint discussion with them about incorporating breastfeeding into your work schedule hopefully allow you to reach a decision that suits everyone involved.

For children with an increased risk of allergies there are a few important rules regarding diet: avoid cow's milk, fish, nuts and eggs at all costs for the first year! When buying baby formula and foods look for packages marked "hypoallergenic." This food contains no intact cow's milk proteins, so these cannot enter the infant's bloodstream. Soya milk is not recommended for helping to prevent allergies, as it is just as likely as cow's milk to trigger an allergy.

Weaning your baby

Natural weaning

At six months your child's organism has developed to the extent that it can now tolerate solid foods. Giving your baby solids starting at six months of age is also important for health reasons, as breast milk can no longer completely fulfil all nutritional requirements of the growing infant. Iron (e.g. from meat), zinc, fibre and many other nutrients need to be added to baby's diet by feeding solids.

The introduction of solids does not, however, mean that baby must be weaned completely. Weaning should be gradually introduced. You can do this by replacing one daytime milk feed with a cereal feed every four weeks. The first introduction of baby cereal does not mean that every milk feed should be replaced at once. This way your

breasts can also become accustomed to the decreasing demand and can produce less milk accordingly.

Start by offering a few spoonfuls each day of a simple cereal or vegetable puree, e.g. pureed carrots or rice. As soon as baby can eat well from a spoon, try a vegetable/potato puree with meat, which will soon replace a complete feed.

Then try a milk cereal feed (preferably made with breast milk or baby milk formula and gluten-free cereal) followed by a fruit cereal feed.



At baby's regular check-ups your paediatrician will advise you with regard to the ideal composition of these feeds.

By the end of the first 12 months your baby should be receiving three cereal feeds and two milk feeds a day. At the one-year stage your infant can gradually be weaned from the breast completely. Cooling the breasts

and drinking herbal tea (sage or peppermint) will help to stop the production of milk.

Perhaps you belong to that group of mothers that either wish or have to wean their infant early, e.g. due to illness, for career reasons or because of recurring breast infections. Don't let anyone try to make you feel guilty about it – stand by your decision.

And Last but not Least

Where can I obtain information and assistance?

Should you have any questions or be unsure about anything, your midwife is a good contact person. If breastfeeding problems arise, you can still contact your midwife even many weeks after the birth. Addresses and telephone numbers of midwives working in your area and offering post-natal care can be found on the lists of midwives available in hospitals or from gynaecologists.

Breastfeeding self-help groups offer the opportunity to exchange experiences and ideas with other mothers after your baby's birth. These sessions frequently take place in hospitals and are run by midwives, health visitors or lactation consultants. They are also offered by other organisations such as La Leche League. Information is also available on the Internet.

Here are the most important addresses:

WHO
World Health Organisation
Global Data Bank
on Breastfeeding
www.who.int

Ibfan
The International
Baby Food Action Network
www.ibfan.org

La Leche League
www.lalecheleague.org



Dear Mothers

One of the most important prerequisites for a successful and happy breastfeeding period is that you and your baby have time, and peace and quiet – especially in the first few weeks following the birth. Be patient with yourself and your cherished little one, who is experiencing so many new things and has an incredible amount to take in and learn. However, for you too, this is a time of major adjustment. Forget the housework for once and concentrate completely on your baby. Your partner will surely

be willing to help. Maybe he would also like to read this guide. The more the father knows about breastfeeding and the close relationship between mother and child, the more understanding he will be.

But above all, enjoy the unique breastfeeding experience. Both NUK and I would like to wish you all the best.

Willi Bruhn

(Paediatrician in the Neo-natal Department of the Barmbek General Hospital, Hamburg, Germany)

Imprint

This brochure was produced in co-operation with Willi Bruhn, Paediatrician in the Neo-natal Department of the Barmbek General Hospital, Hamburg, Germany.

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Breastfeeding

The NUK Breastfeeding Guide was produced in association with Willi Bruhn, Paediatrician in the Neo-natal Department of the Barmbek General Hospital, Hamburg, Germany.

This guide is the first in the NUK Library Series and contains useful information on the following topics:

- **Breast milk**
- **Breastfeeding**
- **Breastfeeding and allergies**
- **Breastfeeding techniques and feeding positions**
- **Weaning**

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