



Breastfeeding

Tips on continuing
healthy breastfeeding



Build confidence in your journey of breastfeeding

Breastfeeding is nature's most precious gift to mankind and seen as a major cultural element in raising their offspring.

Through breastfeeding, mothers give not only the most natural and best nutrition to their children, but it embodies the philosophy of selfless giving and art of love, the wisdom of a mature interpersonal relationship, and the wholistic approach towards motherhood.

Exclusively breastfeeding for the first 6 months is most beneficial to your child's well-being as well as yours and the family.



Contents

page 4	How Breastfeeding Works
page 5	Components of breast milk
page 6	Characteristics of colostrum and mature milk
page 7	Advantages of breast milk
page 8	The three key factors of breastfeeding
page 9	How to help your baby latch on
page 10	Breastfeeding positions
page 12	Storing breast milk
page 13	Returning to work
page 14	Breast milk supply
page 16	Nipple problems
page 17	Breast problems
page 18	Breastfeeding and fatigue
page 19	Drug ingestion and breast milk
page 20	Diet during breastfeeding

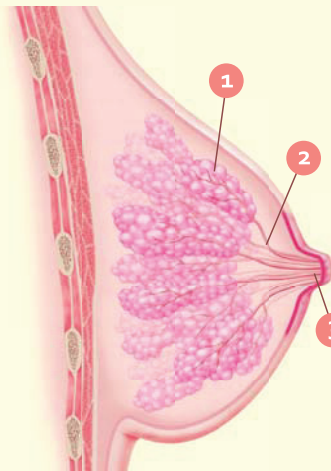
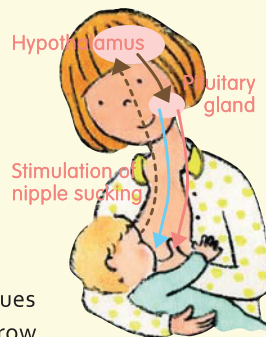
How Breastfeeding Works

All about breast milk and the process of breastfeeding

Action of hormones

When your baby sucks on the nipple and areola, the stimulation is transmitted to the pituitary gland and hormones called prolactin and oxytocin are produced. Prolactin conveys commands to change blood into breast milk, and oxytocin aids in channeling the breast milk into the milk ducts where it becomes available to the baby through the nipple's openings. Breast milk is then released when the baby compresses and actively sucks on the breast. As the mother continues to breastfeed her baby often, both will grow more adept at it.

Mechanism of breast milk secretion

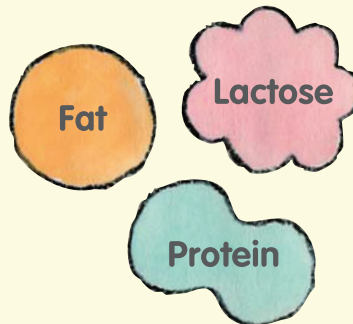


- 1. Acini cell (Where breast milk is made)**
The alveolus, which looks like cluster of grape, gathers to make blood into breast milk.
- 2. Milk duct (Where breast milk goes through)**
With the aid of the alveolus, it helps to eject the milk into the ducts.
- 3. Nipple opening (Where breast milk comes out)**
There are many pores in the nipple through which breast milk is expressed.

Components of breast milk

The contents of breast milk change over time.

Breast milk has various advantages, one of which is that it contains well-balanced nutrients, including fat, lactose and protein as main ingredients. The proportions of these ingredients are automatically adjusted at different times to match the growing needs of a baby. This makes breast milk the best food for your baby.



Breast milk components and their functions

The main components of breast milk are fat, lactose and protein. Fat is an important ingredient in the development of your baby's brain and in the maintenance of the body structure. Lactose is a source of energy and makes up the largest proportion (among fat, lactose and protein) in breast milk. Protein is broken down into amino acids when it is absorbed into your baby's body, and becomes a source for building muscles. It also contains important immunoproteins such as lactoferrin and IgA.

Characteristics of Colostrum and Mature milk

Colostrum

- Rich in antibodies help prevent infections and allergies. It acts as babies' first immunization, which can help prevent infections and allergies.
- Immunocompetent cells create resistance against bacterial and viral infections.
- As prostaglandins and oligosaccharides that facilitate meconium discharge and help relieve jaundice.
- Growth factor facilitates gut maturation, and prevents allergies and milk intolerance.
- Good source of Vitamin A promotes vision and maintain healthy skin. It helps reduce the possibility of infection in babies.



Colostrum Mature milk

Mature milk

Mature milk replaces colostrum within the first 3-4 days postpartum. It is less thick than colostrum and has a lower protein content and higher content of lactose and fat compared to colostrum, making it higher in calories. Mature milk generally looks more white.

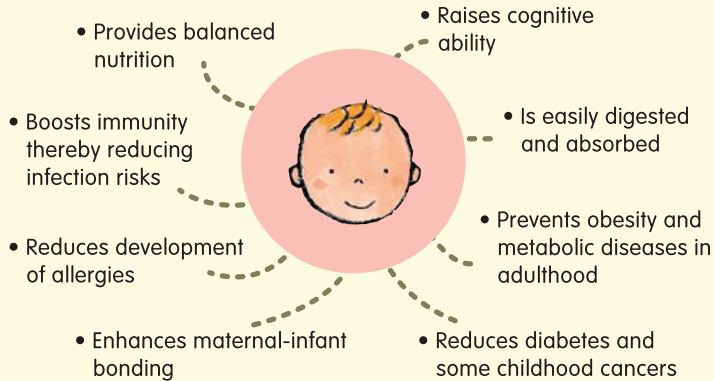


Advantages of breast milk

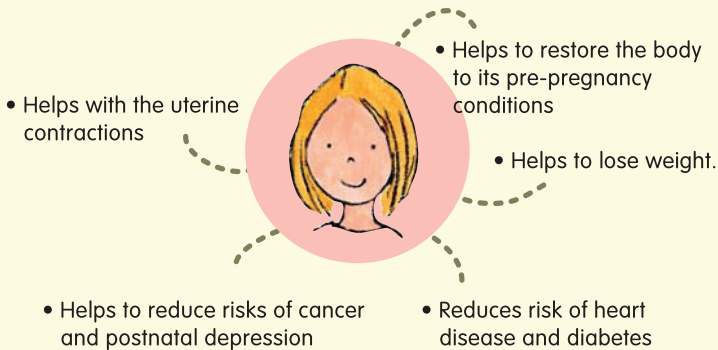
Bond with your baby through breastfeeding

Breastfeeding is an ideal way for mother and baby to bond. In addition to that, there are other advantages to both, as below.

Baby



Mother

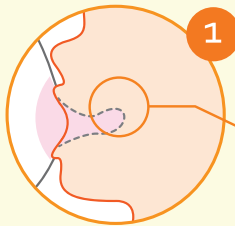


The three key factors of breastfeeding

Attachment, Peristaltic tongue movement, Swallowing

A baby is born with the ability to drink milk in a completely different way to that of an adult. First, a baby tightly attaches his lips and tongue onto the nipple ("attachment"). He then begins moving his tongue in a wave-like way of motion called "Peristaltic tongue movement."

This motion compresses the areola and breast to extract the milk ("sucking"). Finally the back of the tongue rises, channeling the milk into the esophagus ("swallowing"). These three key steps work together to enable a baby to suck milk smoothly and efficiently.

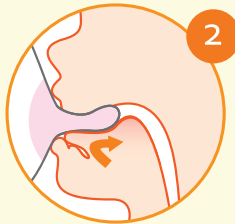


1 Attachment (Latch on)

The lips open outward and latch on to the areola.

Sucking fossa

Small round cavity in the center of the upper jaw found only in babies



2 Peristaltic tongue movement (sucking)

Wave-like tongue movement squeezes the nipple and extracts milk.



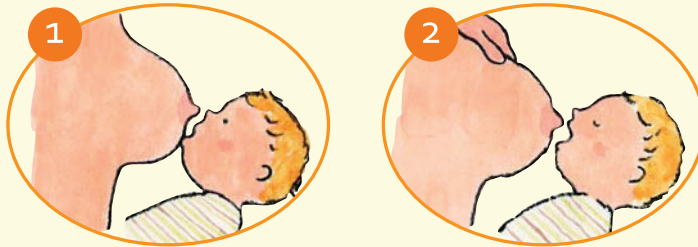
3 Swallowing

The back of the tongue rises, channeling the milk into the esophagus.

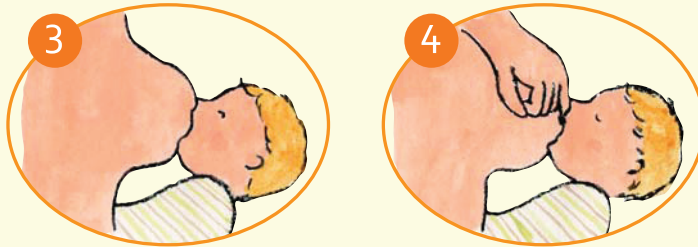
Pigeon was the first in the world to explain the mechanics of the special muscle contraction in infants, using an intra-oral camera.

How to help your baby latch on

Help your baby latch on properly to take full advantage of this peristaltic movement, which the baby is born with.



Position the baby so his nose is facing the nipple. This is best achieved if mom and baby are stomach to stomach. The baby's lower jaw should be touching the bottom of the areola. Touch the baby's lips with the nipple or areola to stimulate the rooting reflex. Wait until the baby opens the mouth, and move the baby closer to the breast.



The part of the areola next to the baby's lower jaw enters the baby's mouth first. Check to see if the baby has firmly latched on to the breast.

Your baby will usually unlatch when he or she is finished feeding, but sometimes stays on but not actively sucking. If this happens, slide your finger gently into the side of the baby's mouth to break the seal.

Breastfeeding positions

Hold your baby appropriately to breastfeed comfortably

Mothers generally breastfeed their babies at least 8-10 times in a 24 hour period and feedings can last from 10-30 minutes at a time but this can vary. It is important for moms to watch their babies for their hunger cues and not watch the clock. It is important for mothers to feel relaxed to continue to breastfeed. Holding your baby correctly and helping your baby latch on are very important for smooth breastfeeding. Appropriate positioning and latching on will help the baby take in breast milk effectively and reduce or prevent discomfort when breastfeeding.

Positioning

Positioning involves holding your baby appropriately and maintaining the appropriate posture while breastfeeding. There are 4 main ways to position your baby, and the following points are important.

Four basic points:

1. Keep your baby's head and body in a straight line.
2. Your baby's face is towards you and his mouth and nose are facing your nipple.
3. Hold your baby close to you to ensure your baby takes in as much nipple and areola.
4. Keep your baby's head and body aligned and back well supported.

Four basic positioning:

1. Side hold/cradle hold

Hold the baby at breast level; your stomach and that of your baby should be close together, with the baby facing you. Support your baby's head on the arm that is on the same side as the breast you are nursing with. This is one of the most common breastfeeding positions.

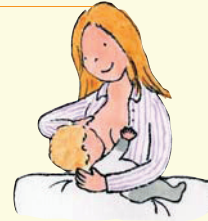


Mother's view



2. Cross cradle hold/transitional hold

In this position, you support the baby's head (base of the neck) using the arm on the opposite side of the breast you are nursing with. Support that breast with the opposite hand with which you are holding your baby. Babies sometimes don't like it if you press too strongly on their heads, and this position is good for such babies. It is a better position for babies who have difficulty latching on and for babies with low birth weight, and you can control the movement of your baby's head better. You can shift to the more common cradle hold after the baby has latched on tightly and started to drink.

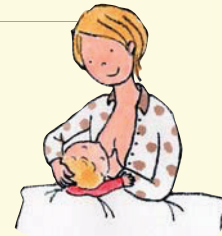


Mother's view



3. Clutch hold/football hold

Support the breast with the hand on the opposite side of the breast your baby is nursing from, and support the baby's head and body with the other hand. Your baby's legs will pass under the arm supporting the baby, and point toward the rear. Hold your baby close to your side. This positioning is good for babies who have difficulty latching on, for babies with delicate health, and if you have to breastfeed from different directions because of nipple or breast problems. It is also good for mothers with Caesarean scars, since the baby won't be pressing directly against the abdominal area.



Mother's view



4. Straddle hold

Sit the baby on your knee and support the baby's head and shoulders. This position is better for babies who have difficulty latching on firmly, and for smaller babies.

Various breastfeeding positions



Storing breast milk

Express your breast milk in an appropriate way

There are situations when the mother cannot breastfeed directly her baby due to various reasons. Yet, you can still continue to nourish your baby with breast milk if you express and store breast milk for baby's use.



Breast milk Expression

Expressions in a day should be similar as that of the normal breastfeeding.

- (i) When preparing your breasts for expression, you may use breast massage gel when massaging your breasts.
- (ii) You may express breast milk by hand or by using a breast pump.

Repeated expression of breast milk helps in the production of milk and relieves mammary swelling and eliminates duct blockage.

Preserve

(Source: Pigeon)	Refrigerated Storage (Approx. -4°C)	Frozen Storage (Approx. -18°C)
Freshly Expressed Breast Milk	24 hours	3 months (ideal) Up to 6 months (acceptable)
Thawed Breast Milk (Non-Heated)	24 hours	Do not refreeze

Advice on expressed breast milk

- Breast milk should not be microwaved, as much of the nutritive value would be lost and hot spots formed as a result of uneven heating could scald your baby.
- Breast milk that has been warmed / thawed should not be refrigerated or frozen.
- It is advisable to thaw frozen breast milk naturally by putting the breast milk to thaw overnight at the refrigerator.
- To thaw breast milk taken out from freezer, put the frozen breast milk bag / bottle in a container of warm water (approx. 40°C) and change the water frequently to allow milk to warm up faster. Alternatively, a warmer could be used to thaw / warm breast milk for the convenience.

Returning to work

How to continue breastfeeding after returning to work

Breast milk will keep the relationship between you and your baby close when you can't be with your baby. Seek the understanding of your family, employer and child-care worker so that you can balance a career and raising your child.



Tips to continue Breastfeeding after returning to work.

- Breastfeed directly before and after work and whenever you and your baby are together.
- Dress in clothes that enable you to breastfeed or express milk easily.
- You may wish to consider preparing a breast pump to assist in expressing at the office.
- It's best to freeze the breast milk that you express during the day, and have it thawed and given to baby at the nursery center.
- You should plan to express at times similar to your baby's breastfeeding timings. You may also express in between the sessions to relieve any breast engorgement or to stimulate milk production for increased milk supply.
- Make use of facilities such as nursing rooms, which enable mothers to express breast milk.
- It's a good idea to bring something that will relax you such as your baby's photo to look at while expressing breast milk at the workplace.
- You may inform the staff of the childcare centre or care giver not to feed baby too full nearer the time for you to fetch your baby.
- Breastfeed frequently at night and on weekends.

Breast milk supply

The more you breastfeed, the more breast milk your body will produce.

Baby's appearance, how the baby drinks breast milk, the amount and frequency of urine and stool output, and the baby's weight are indicators that you are providing enough breast milk. In the first few days, you will be nourishing your baby with colostrum and as your mature milk comes in around the 3rd or 4th day postpartum, the number of wet diapers begin to increase.



Baby's frequent crying and slight engorgement of the breast do not indicate that insufficient breastmilk is being produced. Breast milk secretion increases and the amount of breast milk produced stabilizes as you continue to breastfeed.

Baby's appearance and causes

There can be other causes of the symptoms that are making you think that your breast milk is insufficient.

1. Your baby cries frequently, wakes up and cries while asleep

Even when your baby has consumed enough breast milk, the baby can be in a bad mood or sleep only lightly for other reasons.

2. Your baby wants to nurse frequently

Because breast milk is easily digested and doesn't produce a long-lasting feeling of satiety, breastfeeding intervals are often short. This is normal. Additionally, your baby's rate of growth will not always be the same. During periods when your baby is growing more quickly, your baby will want breast milk frequently. This is your baby's way of telling your body to make more milk.

3. Your breasts don't get engorged

A mother's breasts often stop being engorged a few weeks after the baby's birth as the body gets used to how much milk your baby needs, but this doesn't mean that breast milk production has decreased.

4. Your breasts seem smaller

Breast size has nothing to do with breast milk production.

5. The amount of breast milk your baby takes in is small

The amount of intake differs from baby to baby. A more accurate indicator is whether your baby is gaining weight appropriately.

6. Only a little breast milk is expressed

The amount of milk secreted and the amount the baby takes in are not the same.

Signs that a newborn is receiving sufficient breast milk

1. Your baby breastfeeds at least eight times in 24 hours.
2. During a feed, his suckling rhythm will slow down as milk is released, and swallowing or gulping may be heard.
3. Your baby is alert, and displays good muscle tone and healthy skin.
4. Your baby is contented between feeds. In some cases, well-fed babies may become fussy and it is because of other reasons, not due to insufficient milk.
5. Your baby has six or more wet diapers in 24 hours, with pale, diluted urine.
6. Your baby has three to eight bowel movements in 24 hours especially as milk supply sets in. As babies grow older, frequency of stools maybe less frequent.
7. Your baby shows a consistent weight gain, with an average of 18-30 grams/day.
8. Your breasts may feel full before a breastfeed and become softer after feeding, although some mothers do not experience such change.

(Source: UNICEF WHO, "UNICEF/WHO Breastfeeding Management and Promotion in a Baby-Friendly Hospital, an 18-hour course for maternity staff", 1993, p. 68)

Nipple problems

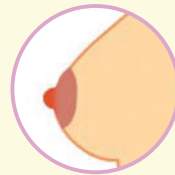
Breastfeeding with flat or inverted nipples

1. You may apply breast massage gel / cream to the nipple and areola to moisturise them.
2. Use a nipple suction device to pull the nipple until the nipple and part of the areola protrude. The suction time should not be too long.
3. Then bring the baby to the breast to latch on.

Breastfeeding with irritation/cracked/bleeding nipples

Nipple irritation

- The nipple is unusually sensitive because it isn't used to external stimuli.
- There is nipple soreness with no visible damage.
- The pain can be an initial symptom of internal bleeding, blisters and cracking (rhagades).



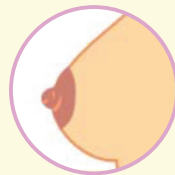
Bleeding, internal bleeding

It is believed that there is edema or pooled blood in the nipple, and the negative pressure produced by the baby's sucking promotes anoxia in the papillary tissues, which increases capillary permeability and leads to burst capillaries and internal bleeding.



Crack

Created on the tip, sides and/or neck of the nipple; it resembles chapped skin and hurts when pressed or sucked.



1. Evaluate whether the newborn is attached to the breast properly and correct it if necessary.
2. You may use a nipple shield to lessen the pain during breastfeeding in the case of sore / cracked nipples.
3. Apply breastmilk (hindmilk) or nipple cream. You may use a breast shell to protect sore / cracked nipple from friction, giving time for nipple to heal.

Breast problems

Take appropriate measures depending on the symptoms

Common symptoms of breast trouble are presence of lumps or swelling that hurt and can be caused by plugged ducts or an infection called mastitis. Consult your healthcare provider such as your doctor, midwife, lactation nurse or lactation consultant, as these breast problems may lead to breast milk insufficiency and later result to poor weight gain in your baby.



Lumps and swelling

If you find lumps or swelling, try to breastfeed using the appropriate positioning and latch on, besides increasing the frequency. Another way to take care of lumps and swelling is to express breast milk after and between breastfeedings. Expressing breast milk often helps, even when the lump causes a burning pain. There is a possibility that a lump in the mammary gland will become mastitis if it is left untreated. Additionally, if your baby suddenly stops wanting breast milk, it may be a sign of mastitis.

Mastitis

Mastitis is a breast infection accompanied by pain, fever (38.5 degrees C and above) and engorgement, chills, flu-like body pain and systemic symptoms. In some cases, it is from a bacterial infection.

It is said to be most common 2-3 weeks postpartum, but it can develop at anytime during the breastfeeding period. It is very important to keep breastfeeding even if you have mastitis as sudden stopping or allowing milk to build up in the breast can lead to further issues.

1. Stagnation mastitis

Stagnation mastitis (noninfectious mastitis) causes breast inflammation without bacterial infection. It is usually accompanied by redness, engorgement, lumps, a burning sensation in one breast, and sometimes a mild systemic fever. If you have these symptoms, try to breastfeed using the appropriate positioning and latch on to cope with the disruption of breast milk.

2. Acute purulent mastitis

If symptoms do not improve within 24 hours of the start of the symptoms in (1) and you have flu-like symptoms such as fever, chills and body pain, you may be infected by this bacterial form of mastitis. If the symptoms are severe, a course of antibiotics may be recommended, but in any case, see a specialist and obtain advice.

Breastfeeding and fatigue

For mothers who feel tired when breastfeeding

It's hard to stay positive when you feel tired. Babies are very sensitive to their mothers' moods. It's good for both the mother and the baby if the mother's fatigue is relieved, so seek support from your family or get some time for yourself in a positive way.



Physical fatigue

1. Frequent feedings can interrupt sleep

Newborns need time to master breastfeeding. Sometimes they can take in a lot, another time only a little, and the frequency with which they want to take in breast milk differs at different times. However, rest assured that you will both settle into a rhythm as your baby gets used to breastfeeding. It is also possible for you to arrange your lifestyle around the baby's demands.

2. Feeling exhausted while caring for your baby and feeding

Strength and energy are needed for the mother to hold her baby and breastfeed many times a day. If you are feeling physically tired after breastfeeding and caring your child on your own, it is good to seek the support from your partner or other family members at home to care for your baby while you take a break and rest for a while. This may also creates a bond between other family members and the baby.

Mental fatigue

1. Make time to rest

A mother could feel tired and sleepy after breastfeeding. It is important to make time for rest, like taking a nap with your baby, to relieve your fatigueness instead of doing housework while your baby is asleep.



2. Make time for yourself

It's important to make time for yourself once in a while. If it is hard to seek the support of your family, another option is to use a day nursery, babysitter service or confinement nanny service.

It is a good chance to take a look at what is important to you, and you will be a better mother when you see your baby the next time. Don't forget to express breast milk beforehand and have them give it to your baby when you leave the baby at a day nursery or with a babysitter. It is also important to pump when you and baby are apart so your breasts do not become overfull and so you can ensure that you are keeping your supply up.

3. Exercising with your baby

Taking a walk with your baby can refresh both of you. In addition, these days there are more gyms or facilities where you can exercise with your baby. Exercising with your baby lets you to feel refreshed and reshapes your body postpartum and it can also be a happy time for your baby to bond with you.

Drug ingestion and breast milk

Consult your physician on the appropriate medications during the breastfeeding period

When taking medications while breastfeeding, some of the drugs will transfer to your breast milk then to the baby. However, only a few drugs harm breast milk or affect your milk supply. While there are some medications that should not be used by breastfeeding mothers, there are many that can be taken safely. To be safe, check with your doctor before taking any kind of medication including over-the-counter drugs and herbal medications.

The doctor can evaluate appropriately the detriments and danger of stopping breastfeeding with the amount of drugs that are transferred to the breast milk, as the risks depend on the kind and amount of the drug.



Diet during breastfeeding

Maintain a balanced diet for yourself and your baby



Well-balanced diet

Postnatal mothers need more energy and caloric intake when breastfeeding than during pregnancy. As they care for their babies, sometimes they suffer from lack of sleep. Under these circumstances, mothers may tend to neglect their diet.

Be sure to maintain a balanced diet for yourself and your baby. Give yourself at least 6 months to lose the weight gained during pregnancy coupled with exercise. Avoid restricting your diet excessively to lose weight faster, as this not only affects your health, but also the production of breast milk.

Tips to yield quality breast milk

- Eat reasonably well-balanced meals
- Consume foods that are less spicy, and low in fat and sugar
- Avoid smoking, drinking alcohol or excessive caffeine as babies can be sensitive
- Drink adequate amount of fluids
- Sleep well and take time to relax



Capitalize to increase your bone mass

A mother's bone mass decreases substantially during pregnancy and breastfeeding. But they have a chance to increase bone mass during the 6 months to one year after their periods restart following childbirth. If you supply the building blocks of bones, which are calcium and vitamin D, then stronger bones will be produced. Dairy products, small fish, beans, seaweed and wheat are all rich in calcium.

The effects of drinking and smoking

As much as 2% of alcohol in the maternal system will find its way into the breast milk. Your newborn's ability to rid alcohol would be slower than that of an adult due to his immature liver. This may affect your baby's growth and his ability to thrive. It has been reported that nicotine has direct effect on babies, including causing vomiting, diarrhea, an increased pulse rate and restlessness. The whole family should take the opportunity afforded by pregnancy to give up on smoking.



The effects of caffeine

It is said that when mothers drink beverages that contain caffeine, such as green tea and coffee, the caffeine is excreted in the breast milk *1. Limit as much as possible your intake of products that contain caffeine, since breast milk that contains caffeine can cause sleeping disorders to your baby. *2.



*1 Source: Berlin, C., et al.: Disposition of dietary caffeine in milk, saliva, and plasma of lactating women, *Pediatrics*, p. 73, p. 59-63, 1984

*2 Source: Supplements & Health Support Food Data Base Ver. 1, National Institute of Health Sciences, p. 144, 2007