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Further information on many aspects of WHO's work is presented in the Organization's publications.

WEANING

from breast milk to family food

A guide for health and community workers



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Preface

This booklet is about the weaning period in an infant's life. That is the period when the diet changes from complete breast-feeding (up to 4–6 months) to when the child is able to eat normal family food (around one year). We hope the publication will be used by health workers and others concerned with mother and child care. We suggest that this publication is used as a companion to the WHO booklet *Breastfeeding*.¹

You can adapt many of the points made in these two publications to your local situation. You will find spaces in which you can make notes and observations on the basis of your knowledge of the local situation, and discussions with mothers and families. In this way you can make the publication more useful to you in your work to promote good infant and young child feeding. For example, in local adaptations you could add examples of locally appropriate weaning mixes.

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¹ Available from: Maternal and Child Health, World Health Organization, 1211 Geneva 27, Switzerland.

Summary

Human babies grow much more slowly than the young of other animals. They remain dependent on their parents for a long time. This can be emotionally rewarding for parents as they see the growth and development of their children, but it can also be difficult because of the extra food, time and energy they must give.

Breast milk is the natural food that is first available to babies. They are slowly weaned from it on to the regular foods used by the family. This process must be very carefully watched to make sure that every baby grows well and stays healthy.

This booklet deals with aspects of feeding young children, including ideas on how to save time, and use energy efficiently. It will help you to discuss the following main points with mothers and other people who look after infants:

1. A baby needs small amounts of food at first.
2. Slowly increase the amount of food a baby is given, making sure that the intake matches the baby's growing appetite.
3. Feed often, and according to the baby's ability to chew and digest.
4. Prepare nutritious mixes, using foods of good quality. These protect babies from illness and help them gain weight in proportion to age.
5. Feed foods that are high in energy and concentrated in nutrients.
6. Make sure all foods and the utensils used to prepare them are clean.
7. Breast-feed for as long as possible.
8. Give the baby care and attention to stimulate mental as well as physical growth.
9. Feed more during and after illness. Give more liquids, especially if the baby has diarrhoea.

These nine points are all described in more detail in this publication. We hope you find it useful.

1. The weaning process

Weaning, physical growth and health

Weaning is the process by which a baby slowly gets used to eating family or adult foods and relies less and less on breast milk. The process varies from culture to culture and is often regulated by the child's individual needs. Healthy babies of weaning age are growing and developing very fast, so great care has to be taken to see that they are getting enough of the right kind of food.



Fig. 1. A baby of weaning age being fed by her mother.

During weaning babies move about more, and become more independent of their mothers. They start to come into greater contact with germs in the environment.

At the same time the way in which a baby's body is protected against germs changes. When babies are very small they still have

protection (immunity) received from their mothers during pregnancy. But after about 4-5 months this protection has gone, and babies start to develop their own immunity as they come into contact with germs in the environment. Because of this change babies are very likely to get infectious illnesses, from the age of about 4-5 months, especially if they are not breast-fed. This is why any food prepared for babies should be stored and fed to them in very hygienic ways.

Weaning can be a dangerous time for babies. In many places babies of weaning age do not grow well. They often fall ill and get more infections, especially diarrhoea, than at any other time. Babies who are malnourished may get worse during the weaning period, and babies may become malnourished for the first time during weaning. Poor feeding and illness stop many children of weaning age growing well. This shows up on the growth chart as poor weight gain, or in more serious cases, as weight loss.

Increasing the amount and quality of the baby's food

A child of weaning age has a small stomach, but needs plenty of food for growth and activity. There are two main ways of making sure these children get enough:

1. very frequent feeding;
2. using foods with a high concentration of nutrients.

A family may eat up to three meals a day, possibly with snacks in between. Weaning-age children need something to eat about every two hours when they are awake.

THE SMALLER THE CHILD THE MORE OFTEN HE OR SHE NEEDS TO BE FED.

The food the family eats is often filling and bulky. A child of weaning age needs food that is:

1. concentrated in energy;
2. nutritious; and
3. soft and easy to chew and swallow.

These children need mixtures of foods, specially prepared for them. The foods do not have to be expensive. You can usually

The weaning process

make these meals from the family foods, but you will have to prepare them in special ways.

Chapter 2 gives ideas on how you can feed children frequently with suitable weaning foods.

Decreasing the risk of infection from the baby's food

Good food, well prepared, will keep a baby healthy and improve growth. Food that is infected with germs will make the baby sick with diarrhoea or other illnesses. Food can be infected with germs:

1. before it is brought into the home;
2. during storage;
3. during preparation; or
4. after it has been prepared but before it is fed to the baby.

Breast milk is perfectly safe for babies. But as soon as a baby is fed other foods, infection with germs is more likely. This is why so many babies begin to get diarrhoea during weaning. To avoid the danger of a baby getting an infection, you should teach the parents to prepare weaning mixes carefully, under the most hygienic conditions possible. The utensils used to feed the baby should be kept clean, and hands should be washed before food is prepared and before the baby is fed. Do not let flies or other insects settle on any food.

Chapter 4 gives you ideas on keeping the weaning foods clean.

Weaning and mental and emotional growth

Weaning is a time of great changes in behaviour for both the baby and the parents. Babies become more interested in the world around them and independent in their actions. Mothers at first spend almost all their time with their new babies. During weaning this changes. Mothers need to get back to their usual work patterns or even take up new duties and interests.

So during weaning the close ties between mothers and their babies must gradually loosen. Babies will start to be apart from their mothers for longer and longer times. Mothers may need to rely on others in the family to take care of their babies as they return to their regular duties in, or outside, the home.

These changes in the way children are looked after during the weaning period can mean that babies are not fed properly, or become upset and unhappy. For example, babies may lose their appetites when their mothers are away. Or they may be given too little food if the person looking after them is careless, or does not know what to do. If you are aware of these dangers they can usually be avoided.

Healthy growth and development is not just to do with correct feeding. Babies also need emotional stimulation and the right kind of care when they are ill. Successful weaning involves taking all these points into account.

This booklet gives you ideas on how to make sure babies stay happy and contented during weaning. Chapter 3 deals with feeding children when they are ill.

2. Weaning foods

When should mixed feeding start?

When a baby is about 4–6 months old, the mouth starts to become ready to accept non-liquid foods. Teeth begin to appear and the tongue no longer automatically pushes solid food out of the mouth. The stomach also begins to digest starch better. By about 9 months, babies are able to use their hands to put things into their mouth. Clearly, during this time children are becoming ready to eat some solid foods.

Babies who begin to eat semi-solid or solid foods before they are 4–6 months old usually take less breast milk, because their small stomachs are easily filled. As a result, they may not grow well. This will show up on the growth chart. A child may start to cry more often than before because of hunger and malnutrition. On the other hand, after 4–6 months of age, children are growing too big to thrive on breast milk alone. For these reasons, great care needs to be taken in deciding what foods to give to babies, and when and how to give these foods. Every baby is different. Very big babies may need to start a mixed diet earlier than smaller ones.

In general, breast milk alone is perfectly adequate until the baby is at least 4 months old, or weighs 6–7 kg. Other foods are unnecessary before this time, and can be harmful. On the other hand, if other foods are not given as well as breast milk by the age of 6 months most babies will not get enough food to grow well.

START WEANING WHEN A CHILD IS BETWEEN 4 AND 6 MONTHS OF AGE.

Remember that a child is part of the family. Babies are weaned by starting to give them the foods the rest of the family eats. Remember also that these foods do not at this time replace breast milk; they add to the diet of breast milk. They meet the baby's growing needs, and help develop the baby's ability to eat new foods. Breast milk will go on being a baby's main source of food for

some time. It should be given for as many months as possible. Only later will family foods completely replace breast milk.

Breast-feeding should also continue because it gives close contact between the mother and her baby. This contact is good for the baby's well-being, and the mother's feelings of love and attachment. The closer the contact, and the more a mother holds her baby, the more aware she will be of the baby's special needs. She will discover any new problems quickly. Sudden weaning should be avoided, and a mother should avoid suddenly leaving her baby with someone else for long periods. If a mother is going to hand over responsibilities for looking after her baby to someone else she should do this slowly and carefully.

What foods are best for babies of weaning age?

For babies of weaning age it is best to use foods that are:

1. good for the baby;
2. easily available to the family; and
3. not too expensive.

Usually these foods can be taken from those the family eats. Special ready-mixed 'baby foods' from stores and pharmacies may be easy to prepare, but they may also be more costly and less nourishing than foods prepared at home. Also if a mother cannot really afford these foods, she may try to make them last longer by giving too little food, or too few feeds, to meet the baby's needs.

Only when the family diet is very poor in quality and quantity should foods be provided from outside. Foods not usually eaten by the family need only be given:

1. during famine;
2. to extremely poor people who eat only the local staple food;
3. as treatment for severe malnutrition.

In these cases food brought in from outside the family may be needed for the baby to survive.

The staple

A very good first food to give a baby, along with breast milk, is a soft, thick, creamy porridge, made from the staple food of the community.

Every community has a main staple food. It is often the first food that people think of when asked about their diet. The staple food contains starch, and it is eaten by most of the people in the community at most meals. It is usually less expensive than other types of food. The staple varies from country to country. It may be rice, wheat, maize, cassava, yam, potato, etc. In rural areas, families will probably spend a lot of their time growing, storing and cooking the staple food.

The staple is an excellent base for preparing babies' first weaning foods because it is usually cheaper than other types of food, is easily available, and provides most of the carbohydrates (starch) and often other nutrients needed for growth. A soft, thick, creamy porridge can be made from any staple food, and can be given to the baby along with breast milk.

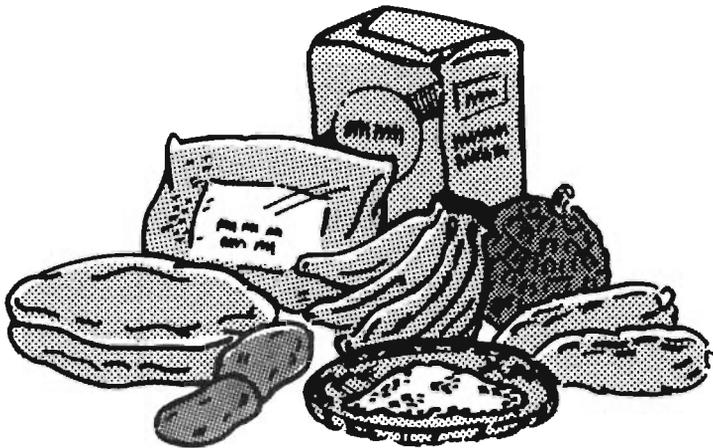


Fig. 2. Staple foods.

Examples of staples

You will see from this list that there are three main types of staple: cereals, roots and similar underground vegetables, and starchy fruits. Different staples grow in different parts of the world.

Circle the names of those staples that are used in your community and write the names of any we have missed in the blank spaces.

Cereals

Rice, maize, wheat, oats, barley, sorghum, millet, teff, macaroni, bread, _____, _____.

Roots

Yam, cocoyam, taro, cassava, potato, sweet potato, _____, _____, _____.

Starchy fruits

Banana, plantain, breadfruit, _____, _____, _____.

The staples you have circled or added are the ones that, with special cooking, will feed the young children in your area.

The staple is a good base for infant foods, but it is not enough. Other foods are needed as well. At first breast milk is this other food. But as the baby gets older further types of food are needed. These other food types are:

- peas and beans
- food from animals
- green leafy vegetables and orange vegetables
- oils and fats
- fruits.

Peas and beans

These are nutritious foods. When they are eaten with cereal staples they are just as nutritious as foods from animals and are often less expensive. The skins of peas and beans are difficult to digest, but careful preparation overcomes this problem. Soak them first, and then cook them until they are soft. Then break up or remove the skins by sieving. Peas and beans are also good for older members of the family. To make sure that babies get to like the taste it is best at first to mix small amounts of peas and beans with the staple porridge. The amount can then be built up slowly. Nuts and seeds can also be nutritious additions to the staple porridge.

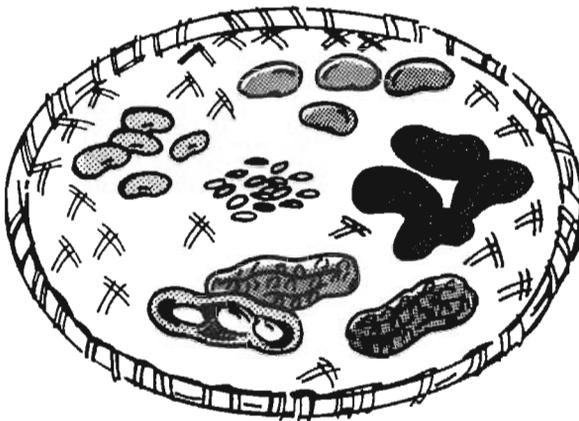


Fig. 3. Some examples of peas and beans.

Examples of peas and beans

There are many different types of peas and beans in the world. Find out how people cook peas and beans in your area and think about the best ways these dishes can be made suitable for small children.

Circle the names of the peas and beans used in your community and write the names of any we have missed in the blank spaces.

Chickpea, cowpea, peanut (groundnut), pigeon pea, lentils, split pea, blackeye bean, red bean, navy bean, broad bean, french bean, soya bean, sesame seeds, melon seeds, mung bean, lima bean,

_____, _____.

Dark green leafy vegetables and orange vegetables

Many different green leafy vegetables are grown in different places. Generally the darker the colour of the leaves the better the food value. Leafy vegetables soften and shrink during cooking. They can then be easily chopped and mixed into a child's staple porridge. Orange or yellow vegetables are also often found locally. They too are very good for children. There are usually ways to make them soft to eat. They can then be eaten by themselves or mixed into a child's staple food.



Fig. 4. Dark green leafy vegetables and orange vegetables.

Examples of dark green leafy vegetables

Circle the dark green leafy vegetables and the orange vegetables that are used in your community, and write any names we have missed in the blank spaces. As a general rule the darker green leafy vegetables and the brighter orange vegetables are best. So put these first on your list.

Spinach, kale, amaranth, calalu, pumpkin leaves, sweet cassava leaves, _____, _____, _____.

_____, _____.

Examples of orange vegetables

Pumpkin, carrot, paw paw, _____, _____,

_____, _____, _____.

Food from animals

Nearly all foods from animals are nutritious. But they are often expensive. They come in different forms;

1. Meat, including fish and organ meats such as liver.
2. Milk from different animals including foods made from milk such as cheese or yoghurt. Although butter is from animals, it is not in this group. It is included as a fat.
3. Eggs.

Meat often needs to be chopped very finely, or pounded with a pestle to make it easy for babies to eat. Great care needs to be taken to remove fish bones that could choke the baby. Food from animals can be mixed with the staple and fed to babies.

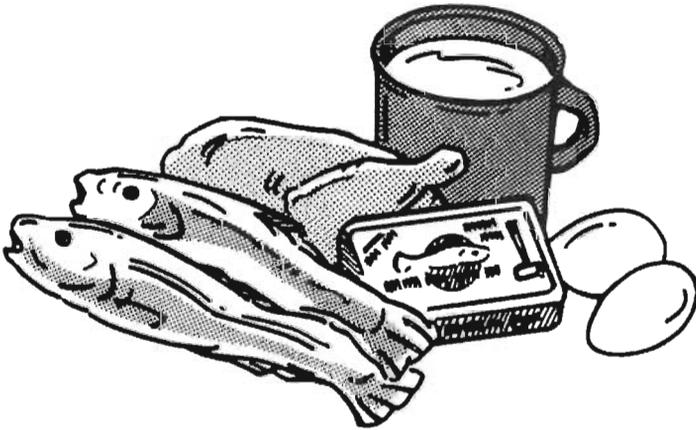


Fig. 5. Some foods from animals.

Examples of food from animals

Write down here the main foods from animals that are used in your community.

Meats and fish

Milk products

_____, _____, _____, _____, _____,
_____, _____, _____, _____, _____.

Eggs

_____, _____, _____, _____, _____,
_____, _____, _____, _____, _____.

Oils and fats or sugars

Oils and fats add useful energy to young children’s meals. They also make the food softer and easier to swallow. Sugar or honey can also provide extra energy but are not as good as oils and fats.



Examples of oils and fats

Circle the oils and fats used in your community. Write the names of any we have missed in the blank spaces.

Oils

Corn oil, palm oil, sunflower oil, groundnut (peanut) oil, coconut oil, coconut milk (that is the milk from the flesh of the coconut, not the coconut water)

_____, _____, _____, _____, _____,
_____.

Fats

Ghee, butter, margarine, lard, any animal fat, _____,

_____.

Fruits

Fruits, if very clean, are good for young children. Start giving babies fruits after they have learnt to eat the staple food. The fruits can be mashed, or made into juice. Make sure the fruits are clean so no infections are introduced. If fruit purées or juices are diluted with water, the water should be very clean.

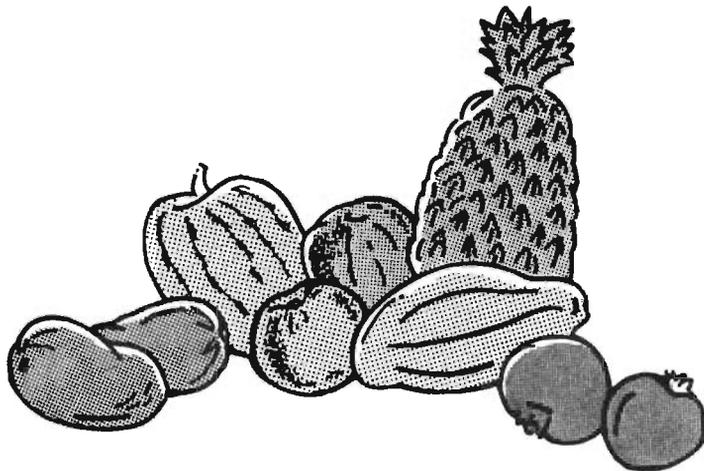


Fig. 6. Some fruits.

Examples of fruits

In the blank spaces write the names of fruits used in your community. It is a good idea also to write in brackets after each fruit the months it is in season. Then you can work out how babies can eat fruit all year round.

_____ (), _____ (), _____ (), _____ (),
_____ (), _____ (), _____ (), _____ (),
_____ (), _____ (), _____ (), _____ (),
_____ (), _____ (), _____ (), _____ ().

An ideal food mixture for a young child contains all the following types of food.

1. The staple.
2. Peas and beans.
3. Food from animals.
4. Dark green leafy vegetables and orange vegetables.
5. Fruits.
6. Oils and fats.
7. Breast milk.

A baby does not have to eat everything at the same meal. If food from animals is not available to the family every day peas and beans are very good instead.

How should weaning foods be mixed?

Starting off

At first babies will eat a little porridge made from the local staple, boiled in water or milk, and enriched with a little oil or fat. The porridge should be thick or semi-solid, and not thin and watery. Porridge that is too watery does not give babies enough nutrition. It takes a few days to start to like the new taste so the baby may eat only a little at first. This is not a problem as one to two tea-spoonfuls are enough. Most of the baby's food will come from breast milk. Later the baby will eat more solid food and enjoy the taste.



Fig. 7. Porridge made from the local staple: it should be thick or semi-solid.

MAKE THE PORRIDGE SEMI-SOLID. ALWAYS ADD OIL OR FAT.

After less than two weeks most babies will be eating and liking the staple porridge. Other foods can then be added to the diet. They should be finely chopped or minced and can be mixed with the porridge or given separately. Peas and beans, or food from animals, are important and should be fed to the baby with the porridge whenever possible. Oil or fat should always be added. The other food types can be given less often.

Staples that are roots, similar underground vegetables, or starchy fruits (see page 9) are not as nutritious as cereals. If you are using them for the porridge, it is important to add foods from animals, such as meat, fish, eggs or milk, as soon as the baby is used to the porridge, i.e. within a week or so.

Two-mixes

When the staple has **one** other type of food added to it, we call it a two-mix. Two-mixes are quite nutritious, and form the main part of many meals. There are three types.

Examples of two-mixes

- Staple + peas or beans
- Staple + food from animals
- Staple + dark green leafy vegetables or orange vegetables

Remember:

Continue with breast-feeding.
Always add a little oil or fat to the mix.
Give babies some fruit.

Three-mixes

Three-mixes are better than two-mixes. They are made up of the staple plus **two** more food types. There are three types of nutritious three-mixes:

Examples of three-mixes

Staple + peas or beans + food from animals

Staple + peas or beans + dark green leafy vegetables
or orange vegetables

Staple + food from animals + dark green leafy vegetables
or orange vegetables

Remember:

Continue with breast-feeding.

Always add a little oil or fat to the mix.

Give babies some fruit.

Four-mixes

Best of all are four-mixes. These contain all **four** major food types. They are a mixture of: the staple; plus peas or beans; plus food from animals; plus dark green leafy vegetables or orange vegetables.

An example of a four-mix.

Staple + peas or + food from + dark green leafy
beans animals vegetables or
orange vegetables

Remember:

Continue with breast-feeding.

Always add a little oil or fat to the mix.

Give babies some fruit.

Three-mixes and four-mixes can be expensive for many families. It is not really necessary to have both peas and beans and food from animals at the same time. If a baby eats a variety of different two-mixes, or at least two types of three-mix, this is just as good as a four-mix.



Fig. 8. Mothers should continue to breast-feed their weaning-age babies.

Always add a little oil or fat to a child's meal whether it is a two-mix, a three-mix or a four-mix. If you have no oil or fat you can use a little sugar or other sweetener such as honey instead. But oil or fat is better as it makes the food softer. Do not forget the breast milk, and give some fruit or fruit juice either at meal times, or as snacks between meals.

Because breast milk is unique and so important for babies, nothing should interfere with the normal course of breast-feeding. So added foods or meals should always be given between breast-feeds. At first breast milk is a baby's main food, and the weaning porridge is extra. Later, the weaning mix becomes the main food and the breast milk becomes an important extra. Weaning porridges should be given to children using a spoon and a cup or bowl rather than a bottle. The porridge should be thick (too thick to be given through a bottle) and concentrated, but soft.

CONTINUE BREAST-FEEDING — THE BABY NEEDS IT.

How should these foods be mixed with the staple?

The 1-1-4 rule is a good guideline to follow. One spoonful of food from animals and/or one spoonful of cooked peas or beans can be eaten with every four spoonfuls of thick, cooked staple. Just a little oil or fat should always be added to this plus, when available, some dark green leafy vegetables or orange vegetables. A handful of dark green leafy vegetables is enough for one meal. After cooking, the handful becomes much smaller. It is a good idea to add slightly more peas and beans each time a mix is made, gradually building up to the 1-1-4 rule.

More detailed recipes can be worked out for the porridge mixtures useful in your area. The aim is for babies to start eating the family food as soon as possible. The 1-1-4 rule still applies, however, even when the food is being taken from the family pot. Breast-feeding carries on in addition to this.

At first mothers often find it easiest to mix all the foods into the staple porridge. Later, they can sometimes give them separately. Whether the foods are mixed or given separately the 1-1-4 rule should always be followed.

How often should these foods be given, and how much?

Frequent breast-feeding should continue but, at the same time, start giving babies porridge mix, as described above, about twice a day. One to two teaspoonfuls are enough to start with. The number of feeds should soon be increased.

As babies grow, the amount of food they need increases. After they are used to the new food, they will take about 3–6 large spoonfuls at each feed. Of course, they still need to be breast-fed. It is very important to continue breast-feeding as before.

SMALL BABIES HAVE SMALL STOMACHS. THEY NEED FEEDING SMALL AMOUNTS OF A THICK PORRIDGE MIXTURE AT LEAST FOUR TIMES A DAY.

By the time babies are 6–9 months old they need at least four porridge meals a day, in addition to regular breast-feeding. Also if they still seem hungry they can have snacks, for example, a banana, an avocado pear, or a biscuit. Fruits make excellent snacks, as does any nutritious food that is available. Babies need something to eat about every two hours when they are awake.

BABIES NEED SOMETHING TO EAT ABOUT EVERY TWO HOURS.

By about 9 months babies have a few teeth, and can start eating larger pieces of food. Chewing is good for them. By about one year, young children will be eating more of the foods cooked for the rest of the family. But they should be eating them about four or five times a day. Babies should still eat the same mixture of staple, peas and beans, food from animals, dark green leafy vegetables or orange vegetables, plus oils or fats, and fruits. These nutritious foods can often be taken from the family cooking pot, or they can be specially cooked for the baby. Babies can be breast-fed to the age of two years or more.

A two-year-old child needs to eat half as much food as an adult. At meal times it is a good idea to give a young child a bowl containing a well-chopped portion of the family meal. In this way, with the mother watching, the child can eat at his or her own speed.

Children aged between 1 and 3 years have very small stomachs. They can eat only about 1–1½ cupfuls (200–300 ml) of food at a time. This is why they need frequent feeding.

Feeding from the family pot

Foods can be expensive, and cooking them adds cost and takes time. Very often it is not necessary to cook special food for the baby. A good porridge mixture can be made from the food eaten by older members of the family. The right amounts of the staple, and other food types needed by the baby can be taken from the family cooking pot. These foods will then need special preparation – such as pounding, chopping, mashing and straining – to make them soft for the baby. Warm porridge is softer than cold porridge, so it is better for young babies.

In some countries mothers ‘malt’ the baby’s porridge by adding a powder made from sprouted grains. This makes the porridge soft and easy to eat, without taking away any of its goodness.

INFANTS AGED BELOW 6 MONTHS NEED TO HAVE THEIR FOOD STRAINED.

THOSE AGED BETWEEN 6 AND 8 MONTHS NEED TO HAVE THEIR FOOD MASHED.

FOR INFANTS AGED 9–11 MONTHS, FOOD SHOULD BE CHOPPED OR POUNDED.

FROM ABOUT ONE YEAR, CHILDREN CAN START EATING PIECES OF FOOD.

Sometimes families prefer to cook foods specially for the baby in a small pot that is kept very clean. This is a good idea but it is not always practical.

Making your own weaning mixes

You may find it useful to discuss good weaning mixes for young children with mothers and grandmothers in the community. Together you can think of traditional mixes. You can then suggest improvements if necessary. You can encourage the mothers to try the mixes out, and to see how their babies like them.

Local weaning mixes

Write down some weaning mixes useful for your community in the spaces below:

Two-mixes

_____ + _____

_____ + _____

_____ + _____

_____ + _____

_____ + _____

Three-mixes

_____ + _____

+ _____

_____ + _____

+ _____

_____ + _____

+ _____

Four-mixes

_____ + _____ + _____ + _____

_____ + _____ + _____ + _____

_____ + _____ + _____ + _____

Remember:

Continue with breast-feeding.

Always add a little oil or fat to the mix.

Give babies some fruit.

Checking progress by weighing babies

You can tell if a baby is being properly fed by checking what types of food are being eaten, how much, and how often. It is just as important and useful to see how much the baby has grown by looking at the growth chart. If weaning foods are given too soon (before 4 months), growth may slow down. If weaning foods are given too late (after 6 months), growth may also slow down. Big babies may need extra foods before smaller babies do. Some very big babies weighing over 6 or 7 kg may need to start weaning as early as 3 months.

If the growth chart shows that a baby's weight gain is slowing down you should check if he or she is getting enough food.

1. Is the child being fed often enough?
2. Is the child getting a good mixture of foods that includes oil or fat?
3. Is the food clean?
4. Is the child still being breast-fed?

Also check if the baby has an infection.

Babies need to be weighed every month during the early weaning period. Problems with weaning can be found as they start, and can then be corrected before they become too severe.

**FOLLOW THE WEANING PROCESS ON THE
BABY'S GROWTH CHART**

3. Illness

Children who are ill often lose their appetite. Also the mother may think that the child should eat less during illness. This is not true. Sick children need more food than healthy ones. Food is vital to fight off illness, so the mother should coax the sick infant to go on breast-feeding, and to eat the porridge mix.

Once the baby starts to get better and appetite returns, he or she should be fed more than usual. This will make up for the food missed during the illness. It will help rebuild strength, and resistance to other illnesses. A good rule is to feed the baby twice as much as usual after an illness for the same number of days as he or she was ill. This is most important for babies who are under-nourished, and who have less protection against illness.

**CONTINUE FEEDING CHILDREN DURING ILLNESS.
GIVE MORE FOOD THAN USUAL AFTER ILLNESS.**

If a child does not get enough vitamin A, some diseases such as measles, diarrhoea, and respiratory infections can produce severe illness, and may even produce blindness. So it is especially important to give foods that are rich in vitamin A to children who are ill. Such foods include dark green leafy vegetables, orange vegetables, liver and eggs. It is also important to go on giving these foods when the child is getting better. The foods can be mixed with the staple porridge. Children can also be given vitamin A capsules.

A young child with diarrhoea must drink more than usual to put back the liquid lost in the stools. It is important to breast-feed frequently, and to give soups and other liquids. If a child becomes dehydrated through losing too much liquid, oral rehydration salt (ORS) solution or home-made sugar and salt solution should be given. While the dehydrated child is being given these solutions, food should also be given every 4 to 8 hours. For the rest of the

Weaning— from breast milk to family food

illness the child should be given as much food as he or she can be persuaded to eat.

**DIARRHOEA IS DANGEROUS. DURING DIARRHOEA,
A CHILD SHOULD CONTINUE TO TAKE FOOD AND
DRINK.**

4. Keeping weaning foods clean

Many families can only afford to cook food once or twice a day. In such cases food mixes for babies need to be kept until needed. They should be kept cool, covered, and clean. It is best not to keep these foods for longer than two hours before giving them to the baby, but this is not always possible. The next best thing is to re-heat the food until it starts to bubble, and then let it cool quickly, until it is cool enough for the baby to eat.

Rules for personal hygiene

1. Wash your hands before handling food, dishes, eating utensils, and before feeding the baby.
2. Wash your hands after defecating.

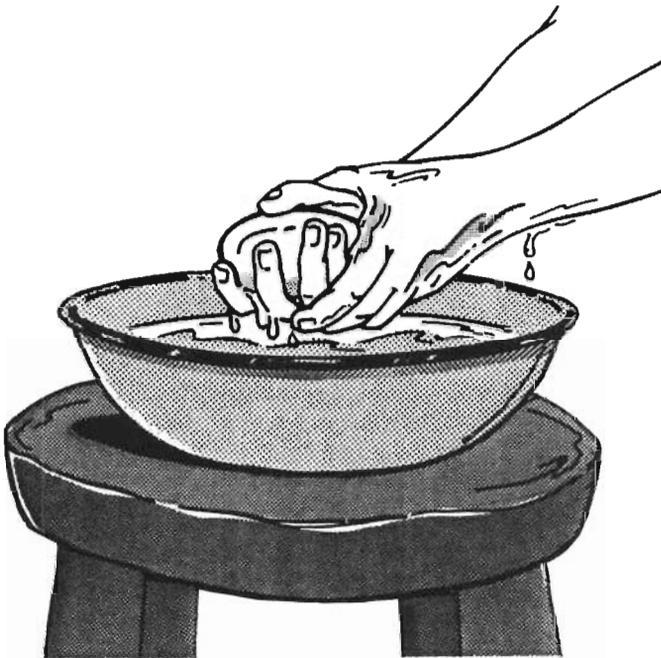


Fig. 9. Frequent hand-washing is an important part of personal hygiene.

Rules for food hygiene

1. Wash and rinse all equipment before preparing the food.
2. Scrub cutting boards, tables etc. with soap and water after preparing foods.
3. Get rid of rubbish and kitchen waste quickly.

Rules for storing weaning foods

1. Use clean, covered containers that keep out insects.
2. Store the food in a cool, airy place.
3. Keep insecticides, pesticides, disinfectants etc. away from the food, and in labelled containers.

COOL, COVERED, CLEAN AND COOKED—THE FOUR Cs OF FOOD CARE.

If a mother has serious difficulty with food hygiene, personal hygiene or with storing weaning food carefully it may be better to delay weaning. The risks of doing this are less than the risks of infection, but it is not good to delay after the baby is 6 months of age.

Storing the weaning food

Here are some ideas for making coolers for storing weaning foods¹; they will prevent the food from spoiling. They all rely on the fact that water evaporates into the air, and that the evaporation process cools the air inside the cooler.

Cupboards

A crate or packing case used either on its side or on its end makes a good cupboard for evaporative cooling. Put the crate on bricks to raise it off the floor. Put a container of water on top of the crate and drape sacking or other coarse cloth over the bowl and around the crate, so it does not quite reach the floor. Let the cloth dip well into the water in the bowl. Place the food to be cooled inside the crate. The cloth will get wet and the water held in it will evaporate, cooling the air and food in the crate.

¹ Adapted from: *Rural home techniques*. Rome, Food and Agriculture Organization of the United Nations, 1975 (Food Preservation Series).



Fig. 10. A cooling cupboard.

Pottery

A double-pot cooler has been developed in India. It is made of a small pot inside a larger pot. The space between the two pots is filled with water. The outer pot and the lid are non-glazed to allow the water to evaporate. The inner pot is glazed on the inside to stop water seeping into stored foods. To use the double pot cooler, soak the outer pot and lid in water until they are wet through. Then pour some water into the outer pot (enough to fill the space between the inner and outer pots). Put the food to be cooled into the glazed inner pot, and place this in the outer pot. Check that the space between the pots is filled with water and cover with the lid.

A simple cooler can be made using a plant pot and base. Place a brick in the plant pot base and then fill the base with water to a level just below the top of the brick. Put the food to be cooled in a container, and put the container on the brick. Soak the plant pot in water until it is wet through, and place it upside down over the brick and food container so that it is standing in the water.



Fig. 11. Pottery coolers.

Baskets

A basket loosely woven from split bamboo, thin wood or raffia straw makes a very good cooler. Place the basket on stones or bricks in a low container of water. This water container may be round or square and may be either earthenware (pottery) or metal. Drape sacking cloth, or other coarse cloth, around the basket and allow it to hang down into the water. Place any food to be cooled in containers in the basket. Several containers of food may be stored on top of each other. Cover the basket with a lid. Remember to keep the water container filled with water, and to dampen the covering cloth from time to time.

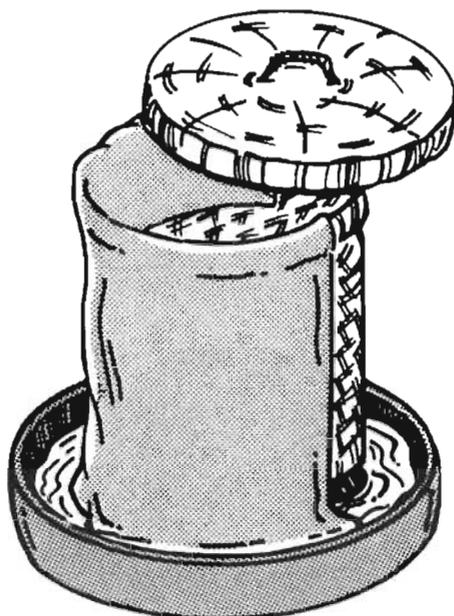


Fig. 12. A basket cooler.

Another basket cooler can be made by cutting a number of lengths of thin bamboo. They can be used to form a round container. The bottom of the container can be made from a round piece of wood or from lengths of bamboo.

Make the lid from lengths of bamboo, as shown. It may be easier to use a round piece of wood as a lid. Use this bamboo evaporative cooler with wet cloth in the same way as described above.

Food covers

To make a cover to protect food against insects, stretch mosquito netting or wire screening on to a lightweight frame. The frame can be made of pliable wood, bamboo or light metal wire.

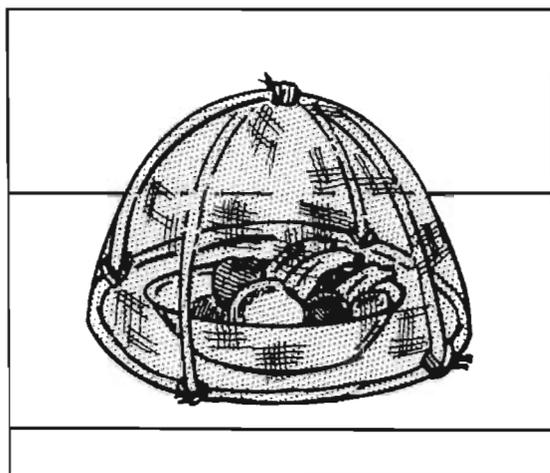
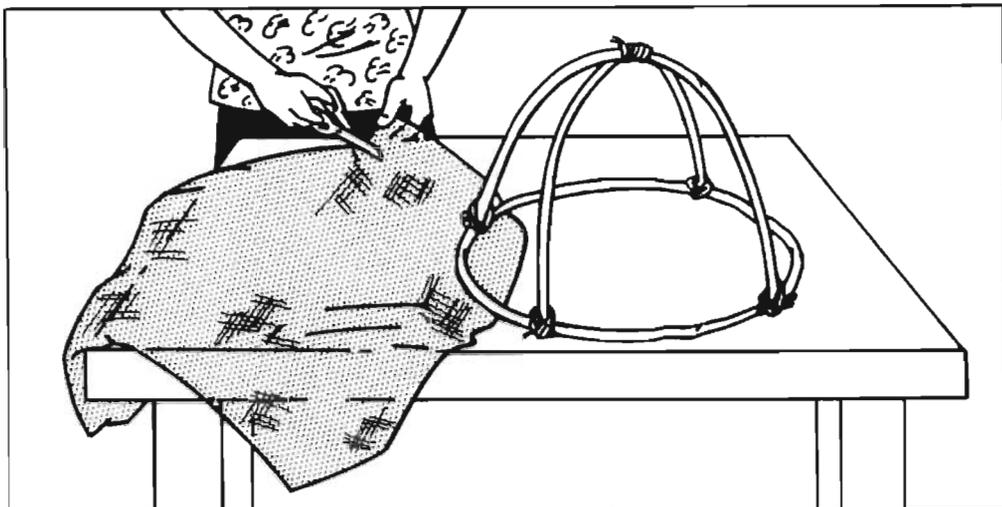


Fig. 13. A food cover.

Bend a piece of light wood, bamboo or wire into a circle to make the base, and tie the ends together. Bend two more pieces of the same material, and tie them to the base circle as shown in the picture. They make the top of the food cover. Stretch netting or screening over the top and sew it down strongly onto the base and two top pieces. This food cover will keep flies off the food and utensils used to feed the baby.

5. Working mothers

Bringing up children is important work. It takes lots of time, especially during weaning. Mothers have many other jobs to do as well. That is one reason why many parents plan when they have their babies. It is best to space pregnancies. In that way both babies and mothers will be healthier.

Mothers and other people who look after children often have many other things to do as well, for example, farm work, paid work, fetching water or firewood or going to meetings. A mother may not be able to give enough care to her child during weaning. In some places mothers can get help from relatives and friends.

Health workers need to help mothers to combine their child care with their other work. This may not be easy, but often something can be done to help both mothers and children. For example, some communities have started day-care schemes or centres, and mothers' groups.

Many mothers have to go out to work soon after having a baby. If possible, it is best to delay the return to outside work for about three months. But often this is not possible. Sometimes a mother can take the baby with her to work. In this way she can breast-feed and feed the baby small amounts of weaning food every two hours, as described in this booklet. In many parts of the world a baby is kept on the mother's back and goes everywhere with her. This is a very good practice.

There are times when a baby has to be left with someone else, e.g. with a grandparent, a friend, an older sister or brother, or at a day-care centre. It is important that whoever looks after the baby knows about feeding young children and remembers to feed the baby often. In some places a wet-nurse may be employed to breast-feed the baby. You should encourage this practice if the mother has to go away, and the wet nurse is healthy.

When a mother is separated from her baby for several hours every day she may have to start giving mixed feeds sooner than otherwise. The principles are the same as described earlier in this booklet, but breast milk is squeezed out and mixed with the porridge before the mother leaves the house each day.

Weaning— from breast milk to family food

When a working mother is at home, she will need to take extra care to feed the baby well and to give him or her a lot of love and affection. She can then breast-feed the baby very often, including at night. If the baby sleeps with the mother, this will make night-time breast-feeding easier.

6. Factory-produced weaning foods

Crowding and poverty are common in towns and cities. Families have little or no land and often cannot grow food. So they have to buy most of the food they eat. This means that people in towns often have to pay more for food than people in villages.

More and more families who live in towns are beginning to use ready-made weaning foods bought from shops. These factory-produced foods taste and feel different from local foods. Some are easy to use as they do not need much preparation. But they are often expensive and can be unsafe for the reasons mentioned on page 8.

Some countries have worked out their own locally made, low-cost weaning foods. Some of these are nutritious porridge mixes very like those described in this booklet. Most are based on a staple, mixed with peas or beans, usually with milk added. They may be just as nutritious for babies as a home-made porridge mix. It is important to mix these weaning foods with clean water, to add some fat or oil, and to make sure they are not made too thin and watery.

Where these low-cost weaning foods are available, some mothers may not know about them. You should tell the mothers about them, and about how and when to use them. Be careful to recommend only those that the Ministry of Health recommends. Some foods that are sold for babies are not nourishing enough and can cause malnutrition.

In some countries, certain foods are given free or at low cost to families with very low incomes or with severe problems. The taste and texture may be different from the foods the people are used to. Some need to be mixed with other foods to make them nutritious and tasty. Work out to which food type the donated food belongs: staple, peas and beans, food from animals, dark green leafy vegetables, orange vegetables, oils and fats, or fruits. Then work out porridge mixes that can combine the donated food with foods the families already use.

Some communities prepare their own weaning mixes. Usually community members bring their own staples and peas or beans to

a central grinding mill. They are mixed together into a two-mix and ground there. The beans or peas should be lightly toasted before they are mixed in with the raw staple. Toasting the peas or beans makes them taste better, and shortens the cooking time. The final mixture keeps better if the peas and beans are lightly toasted first. Also the weaning mixture is more digestible.

The two-mix can then be stored at home. It is cooked in water when needed, and other foods are added to it. In this way mothers are saved a lot of work in preparing weaning mixes. Community projects such as this can be very successful.

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