



WORLD HEALTH ORGANIZATION
Regional Office for Europe
Programme for Nutrition Policy, Infant Feeding and Food Security

FINAL DRAFT April 2000

**Healthy Eating
during
Pregnancy and Breastfeeding**

Booklet for mothers

Acknowledgements

This booklet was supported by UNICEF Geneva.

Contents

Acknowledgements	2
Contents	2
Introduction	3
The Placenta - carries life to your baby:	4
Healthy diet - what does it mean?	4
Food Groups	5
What about multivitamin supplements?	12
What about fluids?	13
Some substances may harm your baby	13
How much weight do you gain during pregnancy?	14
How to cope with the food-related problems during pregnancy	15
Guidelines for successful breastfeeding	17
Healthy eating for women who are breastfeeding	18
Tips on food safety and preparation	19

Introduction

Perhaps you just learned that you are pregnant? Your baby may not even seem real yet. However the choices you make and what you eat now and every day you are pregnant or breastfeeding can affect your health and the health of your baby.

It is your choice:

- what you eat
- whether you drink alcohol and/or smoke
- how much your weight may change
- how often you see your doctor

Pregnancy is a very important period. It is a time to think about your lifestyle, habits and diet and how they affect you and your future child. It is a time to consider if you wish to adopt healthy habits that will be beneficial to you and your baby both now and in the future.

It is never too late to make the right choices.

When you are expecting a baby or breastfeeding a baby, nutritious food is very important for both of you:

For You: pregnancy and lactation place extra demands on your body. To meet these demands you need to think about what is best to eat and drink. Good nutrition in pregnancy helps you to stay healthy and energetic and to prepare yourself for taking care of you, your new baby and the rest of the family.

For Your Baby: through your milk your baby eats everything you eat. Thus, the best way of giving your baby a healthy diet is for you to eat a healthy diet.

The Placenta - carries life to your baby:

The placenta brings important things, such as oxygen and nutrients, to your baby and it removes the waste products that your baby produces while in your womb.

However the placenta cannot stop harmful substances such as alcohol and nicotine, from smoking, crossing from you to your baby

Healthy diet - what does it mean?

Contrary to a sometimes often quoted saying, you do not have to “eat for two” - or double the amount of food you normally eat.

From about the 3rd month of pregnancy you need ONLY an extra 200-300 kcal per day in addition to the diet you ate before you became pregnant. This small extra amount can be achieved, by eating for example 2-3 slices of bread extra (or 1 glass of milk and 1-2 slices of bread extra) per day.

A healthy diet is one that is based mainly on plant foods. Therefore it is important to eat lots of vegetables, fruits, bread, potatoes, pasta, cereals, beans and lentils accompanied by only relatively small amounts of: low fat milk, cheeses, kefir and yogurts; fish, lean red meats, and poultry. Whenever possible try to get locally grown vegetables and fruits, especially when they are in season. These can be less expensive, more nutrient dense, fresh and safe from contamination.

The following explanation highlights the relative importance of different foods by placing them into 5 food groups.

Food Groups

1. Bread, cereals, pasta, rice and potato group - aim to eat 6-11 portions per day

What counts as one portion?

- 1 large slice of bread (about 30-40 g)
- 3 small crackers or sooshka
- 1/2 cup cooked pasta (macaroni, spaghetti etc.)
- 1/2 cup cooked cereal (rice, buckwheat or oatmeal)
- 3/4 cup (about 30g) ready-to eat dry cereal
- 1 medium potato

Foods from this group provide you with your main source of energy. They also contain many other important nutrients, such as calcium, iron, zinc and B vitamins. Potatoes are also a good source of vitamin C.

Unrefined cereals and wholemeal bread are good sources of fiber which prevents constipation which you may experience more of during pregnancy.

Some breakfast cereals may be fortified with vitamins such as folic acid - check the label.

Try to eat a variety of foods from this group, including wholemeal and rye breads, macaroni, spaghetti, rice, buckwheat,

oatmeal or your traditional cereal and potatoes.

2. Vegetables and fruits group - aim to eat at least 5 portions per day (more than 400g)

What counts as one portion?

1/2 cup (about 100 g) of vegetables (for example:

carrots, onions, beets, leeks, turnip etc. –
including that eaten in soups and stews)

1 cup of green leafy vegetables (cabbage, lettuce,
spinach, broccoli, etc.)

1 medium tomato

1/2 cup of sprouted beans

1 medium piece of fruit (1 apple or 1 pear or 2
small plums)

1/2 cup (about 100 g) of fresh, preserved, or
cooked berries

160 ml fruit or vegetable juice (try fresh carrot and
orange squeezed and mixed)

Vegetables and fruits provide the best source of many vitamins and minerals, including folate and iron, which are important to prevent you becoming anaemic during pregnancy. Remember, vitamins such as vitamin C are needed both by you and your baby and cannot be stored in your body. Thus, it is important to eat plenty of vegetables and fruits every day, especially those that are locally grown.

Each of the following will give you enough vitamin C every day:

1 large pepper or 3 medium potatoes or 160 g of cabbage.

In addition vegetables contain many protective components which help keep us healthy: fibre, flavonoids and many more substances which we have not even discovered yet! This is one reason why vitamin and mineral tablets cannot replace the vegetables we eat.

Fresh vegetables and fruits may sometimes be difficult to find. Out of season, when fresh produce may not be available, don't forget about frozen, home-preserved, tinned, pickled and dried varieties - they also contain essential nutrients. You might like to try "sprouting" beans when no other sources of vitamin C are available.

The following fresh weight of sprouted beans will provide 10 mg vitamin C:

Black-eyed beans	50 g
Fenugreek, Mung beans, green lentils	70 g
Haricot, Alfalfa	90 g

Remember, that vitamin C is lost during storage and preparation. Therefore it is important to cook vegetables in a minimum amount of boiling water for only 5 to 10 minutes. Try steaming, baking or microwaving instead of boiling. Try to eat raw fresh or lightly cooked vegetables every day and try not to add excess fats, oils and salt.

3. Milk and dairy products group - aim to eat 3 portions a day

What counts as one portion?

- 1 cup (about 200 ml) of yogurt/kefir
- 45 g of hard cheese (the size of matchbox)
- 1,5 cup (about 250 g) of cottage cheese
- 1 glass (200 ml) of milk

Dairy products are one of the richest sources of calcium in your diet. Calcium is essential for the development of healthy bones and teeth of your baby; in lactation it is important for the formation of your own breast milk. However if you do not eat calcium containing foods your baby will not suffer since calcium will be taken from your body stores. But for your own health it is important that you replace your stores of calcium.

Dairy products are also a good source of protein and other minerals and vitamins, such as some B vitamins, vitamin A and sometimes iodine depending on whether or not the cows are fed iodine fortified fodder.

Contrary to the beliefs of some people, creamy, high-fat milk and dairy products are not healthier than low-fat alternatives. Where possible choose low-fat milk, kefir and low-fat milk products - they contain more calcium and protein and have a lower fat content, so are good for all of the family.

Remember, that neither butter (made from the cream of milk) nor cream contribute calcium or protein to your diet, only fat.

4. Fish, poultry, meat and bean group - aim to eat 2 portions a day

What counts as one portion?

1 to 1,5 cups (about 150-200 g) of cooked beans

2/3 to 1 cup (about 100-150 g) of nuts

2 eggs

80 g of cooked lean fish, poultry or meat

This group includes beans and lentils, fish, meat, poultry, eggs and nuts, which are all rich in protein. Try to eat a wide variety, especially beans, lentils, nuts and fish, these are especially healthy for you and your family. Meat, especially organ meats (such as liver and kidney), provide some of the best sources of iron. Iron from meat is absorbed better than iron from plant sources. However, liver should be taken in moderation to avoid excess intake of vitamin A.

Choose lean varieties of meat or cut the fat off when possible, think about limiting the amount of smoked and salt-cured sausages if you eat these often because it is better not to eat too much salt and fat.

5. Lard, butter, margarine, oils, sugar, sweets and salt group - use sparingly

This group includes butter, margarine, oils, lard, sugars, candies, sweet desserts, pastry, sweetened drinks: in other words foods that have a high fat, salt and/or sugar content.

These foods are dense in calories but provide little in the way of other nutrients. Therefore it is better not to indulge in these products at the expense of more nutritious foods from the other

food groups.

Try to use oils (such as olive, canola or rapeseed oil) instead of animal fats as much as possible, but if this is not possible then just try to reduce the total amount of fat you eat.

Remember, eating a diet low in fat and, especially low in animal fat, reduces your and your family's risk of getting certain cancers and cardiovascular disease - the two major "killers" of the population in Europe .

Consume salt in moderation (up to 6 g per day in total): try to use less salt at the table and in cooking, eat less salty or pickled foods. This will decrease your risk of high blood pressure and related health problems.

Try whenever possible to get salt which is iodized to ensure that you and especially your baby get enough iodine during pregnancy and breastfeeding.

Remember about these important nutrients

1. Folic acid

This vitamin is extremely important during pregnancy, especially in the early period and even before conception. A good intake of folate greatly increases the chance of your baby being born without any abnormalities, thus, all women thinking about becoming pregnant, and throughout the first 3 months of pregnancy, should eat food sources rich in folate. Eat plenty of folate-rich foods such as spinach, lettuce, cabbage, green beans, cauliflower and fortified cereals.

Some women who are at particularly high risk of folate deficiency may be advised to take a daily supplement of 400 mcg (0,4 mg) of folic acid but you should talk to your doctor about this.

2. Iron

You need iron to form the red blood cells for you and your baby. Iron helps to carry oxygen in your blood from the lungs to the tissues. Your baby's brain and body need iron and oxygen to grow.

Too little iron leads to anaemia, in which case your baby may not be getting enough oxygen for normal growth and development. Fortunately your ability to absorb iron increases during pregnancy and while you are breastfeeding.

The best sources of iron are lean meats, especially liver and kidney. Some vegetables (e.g. green leafy vegetables, cooked beans and peas) are also a good sources of iron. To absorb more iron from vegetables (especially beans and peas), eat foods rich in vitamin C or acidic foods at the same time (e.g. fruits, juice, bell peppers, tomatoes, kefir, fermented foods). Tea and coffee reduce your ability to absorb iron, so try to drink them between meals rather than when eating iron rich foods.

In case of extreme tiredness you may be suffering from iron deficiency anemia. Discuss this with you doctor who may wish to prescribe iron supplements for you. Do not take iron supplements unless advised by the doctor. They can cause

constipation and may interfere with the absorption of other nutrients.

3. Calcium

Calcium is important for the healthy bones and teeth of both you and your baby. The best sources of calcium are milk, dairy products and some cereals. Try to choose low fat milk, kefir cheese and yogurt, they provide more calcium than full fat varieties.

4. Vitamin D

Vitamin D is very important both to prevent rickets in your newborn baby and to keep your teeth and bones healthy.

Try to spend as much time as you can outdoors, especially in sunny weather: vitamin D is produced in your skin when you are exposed to sunlight.

Vitamin D is found also in foods, such as oily fish, eggs, butter, and fortified margarine. In the Northern parts of Europe with low amounts of sunlight you may be prescribed supplements by your doctor, especially during the winter months.

What about multivitamin supplements?

Do not take vitamin or mineral supplements unless prescribed by your doctor. Besides being an unnecessary expense, an excessive intake of these supplements can cause toxic effects or interfere with the absorption of other nutrients.

What about fluids?

Drink plenty water - 6 to 8 glasses a day. Women who are breastfeeding should drink the amount needed to satisfy their thirst. Water, milk products and unsweetened juices are the best choices. Limit tea and coffee to in-between meals in order not to interfere too much with iron absorption. Try to avoid excessive amounts of lemonade or drinks with a high sugar content, especially if you are gaining too much weight.

Some substances may harm your baby

1. Alcohol

Try not to drink alcohol during pregnancy. An occasional glass of wine at special events is OK.

Alcohol crosses placenta and can lead to physical, growth and mental problems in some babies. It is especially important not to drink alcohol at the time of conception and during the first 3 months of pregnancy when the embryo is most vulnerable to the toxic effects of alcohol.

2. Smoking

Try not to smoke during pregnancy or at least try to reduce smoking substantially. Mothers who are heavy smokers are at much higher risk of having low birth weight babies. Smoking can also be a cause of premature birth, miscarriage and stillbirth and may impair your child's growth and development.

Remember: it is never too late to stop or at least reduce smoking or drinking. Your baby will benefit from each alcoholic drink or cigarette you give up!

3. Caffeine

Effects of caffeine on the foetus are not well established yet. Tea, cocoa and cola-type drinks contain about the same amount of caffeine while coffee contains about twice as much caffeine. Try to limit your coffee intake to 3-4 cups a day.

Remember also, that tea and coffee tend to impair your ability to absorb iron from foods, such as beans and cereals, and iron supplements.

4. Medications

Many medications can adversely affect your baby and are contra-indicated for pregnant women or women who are breastfeeding. Consult your doctor before taking any medications, including aspirin and vitamin supplements.

How much weight do you gain during pregnancy?

On average you should expect to gain 10-12,5 kg by the end of your pregnancy.

Starting with the 4th month of your pregnancy you will probably gain around 1,5-2 kg per month. Check your weight periodically and consult the doctor if you notice you are gaining less than 1 kg or more than 3 kg per month.

Both too little and too much weight gain can adversely affect the health of you and your baby. Thus, make sure that you and your baby get enough calories, but do not overeat (especially sweets and fatty foods). Remember, “eating for two” does not mean “twice as much”. Just follow your appetite and the healthy eating advice in this booklet. Avoid excess under- or overeating.

If your weight before pregnancy was substantially lower or higher than normal, ask your doctor for specialized advice on diet and weight gain.

Remember, during your pregnancy is **not** a good time to go on a diet in an attempt to lose weight!

How to cope with the food-related problems during pregnancy

1. Morning sickness

About 70% of women suffer from sickness, usually in early pregnancy - around week 9-10. Later, by the end of the 4th month of pregnancy, symptoms usually disappear or become much milder. To relieve the symptoms of sickness, try to:

- eat small but frequent meals (with about 2 hr intervals)
- avoid smells and foods that make your sickness worse
- eat more nutritious carbohydrate foods: try dry toasts or crackers, breakfast cereals, fruits and vegetable salads at any time during the day
- eat less fatty and sugary foods

2. Constipation

35-40% of pregnant women suffer from constipation during pregnancy.

How to deal with the problem:

- drink plenty of fluid such as plain water (6-8 cups a day)
- increase intake of foods rich in fiber (wholemeal bread, brown rice, wholegrain cereals, fresh and dried vegetables and fruits, especially prunes and figs)

Remember, iron supplements can sometimes cause or aggravate the symptoms of constipation. If you are taking iron supplements and notice that the symptoms of constipation progress, consult your doctor.

3. Heartburn

May occur anytime during pregnancy, but symptoms usually get worse at the end of pregnancy. Also a common problem - about 30-50% of pregnant women suffer from heartburn.

Some suggestions on how to deal with the problem:

- avoid chocolate, fatty foods, alcohol and mint, especially before bedtime - they tend to relax oesophageal muscle so that acid from the stomach regurgitates up into the oesophagus more easily
- avoid acidic and spicy foods that may irritate mucosa (tomato, citrus fruits and juices, vinegar, hot pepper, etc.)

- milk and dairy products can temporarily relieve the symptoms of heartburn
- eat slowly, drink fluids between meals rather than with meals
- eat small frequent meals, do not eat large meals before bedtime
- sleep well propped up, not lying flat

Remember to consult your doctor before taking antacid medications. Some antacids can bind iron in foods and make iron unavailable for you to absorb.

Guidelines for successful breastfeeding

Breastfeeding can be a wonderful experience both for you and your baby.

Remember:

- breast milk is by far the best food for your newborn baby; no commercial-made baby formula as well as any other food or drink can match breast milk;
- breastfeeding (as compared to artificial feeding) protects against common infections, especially diarrhoeal and respiratory diseases as well as urinary tract and ear infections;
- breastfeed as often as baby wants, do not restrict frequency of feeding according to a timetable;
- let the baby come off the breast spontaneously, do not take baby off the breast before the baby is finished;

- try to breastfeed exclusively for 6 months and then continue for as long and often as possible (*exclusively means giving your baby only breastmilk for 6 months – no other fluids, including water, tea or glucose!*);
- anaemia is not a contra-indication to breastfeeding and even if you are anaemic you should continue to breast feed;
- weight loss is not a contra-indication to breastfeeding and even if you have lost weight you should continue to breast feed;
- you should not stop breastfeeding even if you are smoking or occasionally consume alcohol – your milk is still the best food for your baby.

You can get more information on breastfeeding from a WHO booklet for mothers on infant feeding (available on internet: <http://www.who.dk/Nutrition/main.htm>).

Healthy eating for women who are breastfeeding

After birth you will probably be about 3-4 kg over your pre-pregnant weight. Don't try to lose weight immediately – since these stores are used to make breast milk. Breast milk production itself demands a lot of energy - so breastfeeding will help you to get back to a normal weight.

The principles of healthy nutrition recommended for pregnancy apply also during breastfeeding.

Remember:

- alcohol can pass into the breast milk, so do not drink or at least restrict alcohol intake during lactation;
- there is no evidence of any beneficial effect of alcohol on breast milk production;
- smoking may decrease your ability to produce breast milk and thus affect the growth of your baby, smoking also decreases the vitamin C content in breast milk;
- try not to harm the lungs of your newborn child - never smoke in baby's room;
- caffeine can pass into the breast milk and cause hyperactivity and sleeping problems in your baby - try not to drink too much coffee, tea and cola drinks (recommendations are the same as for pregnancy);
- many medications can also pass into breast milk - check with your doctor before taking any (however, taking most medications is not a contraindication to a breastfeeding)

Tips on food safety and preparation

During pregnancy and breastfeeding you should be particularly careful about not getting an infection from contaminated food products.

Some bacteria and parasites can be harmful to your unborn baby.

- do not eat raw or undercooked eggs: eggs must be well cooked so that both white and yolk are hard;
- avoid home-made pates or pates that are not canned;

- avoid unpasteurized ice creams and unpasteurized (or unboiled) milk;
- thoroughly cook meat and poultry; make sure the frozen meats are defrosted properly before cooking;
- thoroughly re-heat ready-to-eat meals and leftovers before serving;
- store raw meat in the refrigerator so that it does not drip and contaminate other foods; wash your hands and kitchen surfaces after handling meat;
- thoroughly wash all fruits and vegetables;
- to preserve vitamins boil vegetables in a minimum amount of water, do not overcook; try cooking over steam or microwaving (if you have a microwave);
- if you use microwave, follow manufacturer's instructions and make sure that food is cooked right through to the centre;
- check the use-by date on the food package;
- wear gloves when gardening and wash hands afterwards;
- avoid contact with cats, use gloves when handling cat excrements: cats can be the source of Toxoplasmosis - serious infection that can cause blindness, mental retardation or even intrauterine death of the foetus.

