
Guide Part 2

Pregnancy





Guide Part 2 Pregnancy

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Guide Part 2 Pregnancy

1. From embryo to newborn baby

The new life that is created in the womb and sees the light of day after around 40 weeks of pregnancy: what a miracle the female body performs during this time!

Only eight weeks after the egg cell fertilised by the sperm has successfully implanted itself in the lining of the uterus, all the child's internal organs are already in place. Its heart beats about 120 to 160 times a minute.

The tiny being is only two centimetres long at this point. However, the beginnings of arms and legs are already recognisable, and the eyes are beginning to appear on the head – it is markedly larger than the rest of the body. The transition from embryo to foetus takes place at this stage.

By the twelfth week, the rapidly growing child has then reached a size of ten centimetres and a weight of 15 grams. Nose, ears, elbows, knees, fingers and toes have formed and the baby now gradually begins to move its limbs. Blood cells develop in the spleen and liver, and the kidneys begin their excretory function. From the 16th week onwards, the labia and clitoris form in girls, and the scrotum and penis in boys.

After about 20 weeks, the mother can feel the first movements of her offspring. When the baby is awake and active, it demonstrates its joy of movement by kicking and boxing. From the 24th week onwards, it likes to suck its finger, and later it will occasionally hiccup.

The foetus is now 30 centimetres long when stretched out and weighs 900 grams. By the 28th week, the critical point is passed: In the event of a premature birth, the newborn would be able to survive in an incubator.

In the last ten weeks until it is born, the baby takes another giant step: it can distinguish between light and dark, it hears better and better, and it continues to grow in size and weight. When born, it will measure an average of 51 centimetres and weigh 3.5 kilograms.

The placenta plays a central role in the entire development and growth process: it not only supplies the baby with the necessary nutrients, but also produces hormones and antibodies and acts as a placental barrier to protect the child from infections. But be careful: unhealthy substances such as alcohol, nicotine and medicines can pass through the placental barrier (read more about this on page 12).

About four weeks before the big moment, the child gets into the birthing position by turning its head, which usually leads the way at birth, downwards towards the pelvis. The individual bones of the skull are not yet firmly connected and can be moved against each other – this makes it easier for the baby to pass through the birth canal. These gaps in the bones are called fontanelles.

Contractions to open the cervix and the rupture of the membranes that follows a few hours later finally induce the birth. Once the cervix is fully open as a result of the contractions, pushing contractions follow. Then, everything happens very quickly: the child pushes through the birth canal under the enormous pressure, takes its first breaths and is ready to be held in the arms of its overjoyed parents.

2. Important nutrients – an overview and recommendations

During pregnancy, the female body performs a Herculean act. No wonder, energy requirements increase by 250 calories a day from the 4th month of pregnancy onwards, and by 500 calories later on.

Vitamins and minerals, however, are needed most of all to ensure the child's healthy development. A varied and balanced diet is the foundation for meeting the high demand. For some nutrients, however, the use of food supplements is recommended in order to avoid a deficiency.

The following list provides an overview of the key nutrients that are important during pregnancy. The recommendations linked to this list originate from the Federal Food Safety and Veterinary Office (FSVO).



Folic acid

Relevance: essential vitamin for the development of the nervous system and blood formation. In the event of a lack of this vitamin, the child can be damaged and suffer a neural tube defect ("open back"), which either leads to death or is associated with severe disability.

Nutrition: foods such as green leafy vegetables, cabbage, pulses, wholemeal products, tomatoes or oranges contain plenty of folic acid. However, the amount needed to prevent malformations is usually not met through the diet.

Recommendation: If possible, start taking folic acid in tablet form before you become pregnant – as soon as you want to or can become pregnant. The recommended daily intake is 400 micrograms of folic acid in addition to a balanced diet. Continue taking it until at least the end of the 12th week of pregnancy.

Vitamin D₃

Relevance: plays an important role in bone formation and strengthens the immune system.

Nutrition: hardly present in food, except in fatty fish, liver, butter and egg yolk. The body can produce vitamin D₃ itself when exposed to sunlight.

Recommendation: in Switzerland, there is a widespread deficiency of vitamin D₃. Improve your intake by taking 15 micrograms (600 International Units) of vitamin D₃ daily during pregnancy in the form of a food supplement.

Vitamin K₂

Relevance: recent findings show that vitamin K₂ in combination with vitamin D₃ has an influence on bone and jaw formation.

Recommendation: therefore, take a combination preparation containing vitamin D₃ and vitamin K₂. These are available in spray or capsule form, for example.

Iron

Relevance: blood formation requires large amounts of iron during pregnancy.

Nutrition: present in meat and eggs. Plant foods such as whole grain products, legumes, nuts and some vegetables such as spinach and cabbage stems also contain iron. However, they are not absorbed by the body as well as iron from animal foods.

Recommendation: the simultaneous consumption of foods rich in vitamin C, such as chillies, Brussels sprouts, broccoli, kiwi, berries or citrus fruits, can improve iron absorption. Iron supplementation, for example with iron tablets, can be prescribed by the gynaecologist if necessary.



Iodine

Significance: iodine is needed during pregnancy, especially for the production of thyroid hormones.

Nutrition: iodine is only present in small quantities in most foods.

Recommendation: at home, always use iodised salt. Other good sources of iodine are foods prepared with iodised salt, such as bread. Fish, seafood, cheese and eggs are also sources of iodine. Talk to your gynaecologist about whether it would be a good idea for you to take additional iodine tablets.

Omega-3 fatty acids

Relevance: the omega-3 fatty acid DHA (docosahexaenoic acid) in particular is a vital polyunsaturated fatty acid that is an important building block of cells, especially brain and nerve cells as well as in the retina of the eyes.

Diet: found in fatty fish such as salmon, tuna, sardines and anchovies. DHA fatty acid is also found in small amounts in tree nuts and rapeseed oil.

Recommendation: eat 1 to 2 portions of preferably fatty fish a week (but avoid types of fish that may contain dioxins: Swordfish, shark, Baltic salmon and Baltic herring). Alternatively, you can take DHA in the form of capsules made from fish oil or algae after first getting advice from your doctor.

Calcium

Relevance: needed by the child to build up bones and teeth.

Nutrition: found in milk and milk products. In the event of intolerance contact should be sought with a nutritionist.

Recommendation: have three or four portions of milk and dairy products a day. However, you should take precautions to protect yourself from listeria infection (see section on nutrition).

3. Nutrition: what pregnant women should bear in mind

The following list provides an overview of the different foods that ensure a healthy diet during pregnancy. It also points out products that should not be consumed to protect the child and mother from possible illnesses.

Beverages

Recommendation: drink 1.5 to 2 litres a day while pregnant. Give preference to unsweetened drinks such as water, fruit and herbal teas.

Caution: you should reduce your consumption of caffeinated drinks such as coffee, black tea, green tea, iced tea, cola drinks and ready-to-drink coffee lattes to 1 cup. The same applies to energy drinks.

You should also avoid alcoholic drinks whenever possible while pregnant. Drinking alcohol can inhibit the development of the child's organs, damage the nervous system and, in severe cases, lead to miscarriage.

Fruit & vegetables

Recommendation: at least 5 portions (120 g each) per day, comprising 3 portions of vegetables and 2 portions of fruit. This includes, for example, tomatoes, carrots, broccoli, apples and apricots.

Note: Always wash vegetables, salads, herbs and fruits thoroughly to protect yourself and your child from infections during pregnancy.

Cereals, potatoes and pulses

Recommendation: whole-grain products such as whole-grain bread, whole-grain flakes, brown rice and legumes such as lentils, chickpeas, dried beans and peas are particularly good sources of vitamins and minerals. These foods also help prevent constipation. Pulses also contain a lot of protein.



Milk and dairy products

Recommendation: milk and dairy products are important for an adequate calcium supply. You should consume 3 to 4 portions daily.

Caution: To protect yourself from a listeria infection, the following dairy products should be avoided during pregnancy:

- Raw milk and products made from it (except hard and extra-hard cheese)
- Soft cheese and semi-hard cheese made from pasteurised milk
- Feta cheese
- Blue cheese such as Gorgonzola

You can eat these products without any hesitation:

- Pasteurised, ultra-pasteurised and UHT milk
- Hard and extra-hard cheeses made from raw milk and pasteurised milk (remove rind before eating)
- Yoghurt and other fermented milk products
- Fresh cheese made from pasteurised milk and packaged, such as curd cheese, cottage cheese, spreadable cream cheese
- Mozzarella, pasteurised
- Ziger
- Processed cheese
- Fondue and other melted or heated cheeses such as raclette, cheeses used for gratinating, grilled cheese



Meat, fish, eggs, tofu and other sources of protein

Recommendation: poultry, meat, fish, but also eggs are all foods that contain a lot of protein. Eat one portion from this group of protein sources every day.

Caution: There is a risk of toxoplasmosis infection from eating raw or uncooked meat. In rare cases, this pathogen can cause eye inflammation and brain damage in the growing baby. For this reason, the following products should be avoided during pregnancy:

- Raw meat (carpaccio, medium or rare steak)
- Raw sausage (Landjäger, Bauernschübli, salami, Salsiz, mettwurst) and raw ham
- Raw fish (sushi) and raw seafood
- Smoked fish such as smoked salmon or smoked trout

- Foods containing raw eggs, for example tiramisu
- Game and liver
- Some types of fish may contain high levels of dioxin and should therefore also be avoided: marlin, swordfish, shark, Baltic salmon, Baltic herring
- Fresh tuna and foreign pike should be consumed no more than 1 x a week.

Oils, fats and nuts

Relevance: oils such as rapeseed oil and olive oil, fats such as butter and margarine, and nuts contain a lot of fat. This makes them valuable sources of energy. They belong on the menu, but in small quantities.

Note: it is important to pay attention to the quality: some vegetable oils (rapeseed oil) and nuts (tree nuts) contain vital omega-3 fatty acids. Butter and margarine as well as cream, on the other hand, should be used sparingly.



Sweet and savoury

Recommendation: why not treat yourself to a portion of chocolate, a sweet drink or a savoury snack once in a while as part of a varied diet? As long as you keep your intake within limits, it is no problem at all.

Vegetarian and vegan diet: What you need to know

Some of the nutrients needed during pregnancy are lost when meat products or animal foods are not consumed and need to be substituted elsewhere.

"Avoiding meat and fish usually leads to critical iron, vitamin B₁₂, and omega-3 fatty acid levels," explains Zurich gynaecologist Lea Köchli in an interview (see page 16). Requirements should be met from other sources – be it other foods (tofu, pulses), fortified foods (for example, soy milk with calcium) or nutritional supplements.



4. Cat excrement, cigarettes, medicines: avoid any risks

Pathogens such as listeria and toxoplasmosis, which can contaminate raw milk or raw meat, have already been mentioned. The same applies to the harmful effects of alcohol and drugs (see chapter 3).

It is important to know that toxoplasmosis is present in cat faeces. Avoid any such contact and be cautious with pets in general.

Another risk factor is smoking. "Every cigarette you don't smoke is a gain for your child," writes Brigitte Holzgreve, a specialist in human genetics from Basel, in a guidebook. The expert for prenatal testing dispels the myth that pregnant women should not stop smoking abruptly because the child would otherwise get withdrawal symptoms. "That is completely wrong!"

The nicotine contained in tobacco products can pass the placental barrier unhindered and trigger a vasoconstrictive effect in the unborn child. The statistics are a reflection of the potential effects: "Premature births are twice as common among smokers and stillbirths are even three times more frequent than among non-smokers," writes Brigitte Holzgreve.

What else you should pay attention to:

- **Wash your hands regularly and maintain high standards of hygiene in other respects as well**
- **Do not expose yourself to X-rays. Be sure to point out that you are pregnant when you go to the dentist**
- **Vaccinations should only be carried out in consultation with the doctor looking after you**
- **Do not take any medication without first discussing it with your doctor**

5. Exercise is good for you: stay fit!

Women who have done a lot of exercise before their pregnancy can continue to do so – as long as they feel comfortable and do not overexert themselves. In general, regular exercise is a good thing: it strengthens the muscles and increases endurance, which prepares you well for the birth.

Exercising leads to more mobility, has a positive effect on your circulation, reduces the risk of gestational diabetes and back pain, and makes it easier to regulate your weight.

The Federal Food Safety and Veterinary Office (FSVO) provides the following tips on the subject of exercise:

- **Move 30 minutes or more a day. But avoid over-exerting yourself**
- **Engage in activities with a low risk for falls, hard impacts and injuries (swimming, hiking, Nordic walking, keep-fit classes, yoga)**
- **Be active in your daily routine: take the stairs instead of the lift, go shopping on foot instead of driving**
- **Exercise outdoors is especially good for you. Go for walks outdoors. Enjoy the fresh air and benefit from the fact that your body produces vitamin D₃ when there is enough sunshine**
- **Sign up for pregnancy gymnastics or postnatal gymnastics**

6. Preparing for the birth, birth – and the role of the man

Especially if it is the first time a woman is giving birth, an antenatal class is highly recommended. However, it should not only be attended by the pregnant woman, but also by her husband – this gives the parents-to-be something structured to prepare together as a strong duo in the best possible way for the demanding time ahead.

In general, it is important that the partner gets involved during the pregnancy and does not just take refuge at his workplace – "because it's not his body". He should be supportive and understanding of his pregnant wife if she is more emotionally unstable than usual due to the many hormones and the physical changes.



The Zurich gynaecologist Lea Köchli also emphasises this in an expert interview (see page 15): "It is important for me to include the partners. They are welcome to come to any check-up. I am interested in how much support a pregnant woman receives in her relationship. And certain vaccination recommendations also concern the man, for example the pertussis vaccination (whooping cough), which I also offer to men."

You can find information about antenatal classes in your area on the internet. In addition to sharing general knowledge about the various birthing techniques and the health centres where births can take place (hospitals, birth centres), the emphasis varies: Some classes focus on breathing techniques for labour, while others focus on postpartum gymnastics or personal exchange among pregnant women.

In the end, it doesn't really matter: decide together with your partner on the class that suits you best and where you feel most comfortable. Proceed in the same way when choosing your midwife to support you during the birth and later in the postpartum period.

Pregnant women who fear that they will not recognise the signs that their baby is about to be born should not worry too much. As Brigitte Holzgreve, a specialist in Basel, writes, it usually takes an average of twelve hours (first-time mothers) or seven hours (second-time mothers) from the first signs of the onset of labour until delivery.

Brigitte Holzgreve has set out some key features that can be used to identify the labour pains:

- **The mucus plug, which may be bloody, comes out because the cervix has widened a little**
- **Rupturing of the amniotic sac along with leakage of amniotic fluid to a greater or lesser extent**
- **True labour contractions: contractions that last longer than 20 and up to 60 seconds and occur regularly at short intervals**

By the way: Only four per cent of all births happen on the day they were calculated to take place on.

"It is essential to plan the pregnancy together with your partner".

The Zurich gynaecologist on the woman's biological clock, taking multivitamin preparations and finding a suitable midwife.

7 Expert interview with Lea Köchli

What general recommendations and tips do you give your patients for pregnancy?

It is essential that they plan their pregnancy together with their partner. A stable relationship and a good social environment are important. In terms of a woman's "biological clock", the aim should be to get pregnant before the age of 32. If a woman has passed this age and is living with her ideal partner, I do not recommend waiting any longer.

What aspects are important in terms of health?

I advise quitting smoking and moderating alcohol consumption. Drugs should be a no-no. Physical fitness, a reasonable starting weight and a balanced diet are also important. And then, of course, folic acid shouldn't be forgotten.

Why do you recommend taking vitamins and other products regularly during this phase of life?

Because even the most health-conscious diet cannot cover all the vitamins and trace elements that the body needs. Requirements are increased considerably during pregnancy – in some cases by up to 100 percent. No wonder, the supply of iron, folic acid, iodine and vitamin D₃ is insufficient in half of all pregnant women. That is why it makes sense to take suitable multivitamin preparations.

Does this also apply to vegetarians or vegans?

Absolutely! Avoiding meat and fish usually leads to critical levels of iron, vitamin B₁₂ and omega-3 fatty acids. As is generally known, vegans do not eat any food of animal origin. Because dairy products are therefore omitted, calcium also needs to be addressed. Pregnant vegetarians and vegans can only ensure an adequate supply of nutrients for themselves and their child if they also consume foods enriched with nutrients and food supplements.

How do you involve the partner in the gynaecological examinations and the pregnancy?

It is important for me to include the partners. They are welcome to come to any check-up. I am interested in how much support a pregnant woman receives in her relationship. And certain vaccination recommendations also concern the man, for example the pertussis vaccination (whooping cough), which I also offer to men.

How long should you take folic acid during pregnancy?

I usually switch from folic acid to a multivitamin in the 13th week of pregnancy. This is mainly because women often suffer from nausea in the first phase and are less able to tolerate a multivitamin preparation.

At what point should one start looking for a midwife?

My concept is to introduce the women step by step to the various topics associated with pregnancy and birth. At the start, women are bombarded with so much information that the search for a midwife can wait. I recommend beginning to look for one in the second half of pregnancy. In cities like Basel or Zurich, there is a network called "Familystart", via which women can get in touch with nurses and midwives.



8. Stretch mark phenomenon: What can be done?

Pregnancy leads to extreme stretching of the skin – primarily the stomach is affected, but the hips, thighs, upper arms and breasts can also be stretched a lot.

The result of this overstretching are so-called stretch marks, also known as "striae distensae". These are fine bluish-red tears visible in the subcutaneous tissue. After the birth, it takes six months for these stretch marks to become paler as the skin contracts again. However, the reminder signs of pregnancy do not disappear completely: they remain visible as fine silvery-white lines.

What can be done about these "striae distensae"? Experts recommend a mix of exercise, a balanced diet and good skin care. Special skin creams and scar ointments help to make the stretch marks less visible and fade over time.

Recommendation: AndreaCare Striae

AndreaCare Striae Care Cream contains high-quality ingredients that provide optimum care for stressed skin:

- **Tiger grass plant extract prevents stretch marks and increases the skin's firmness and elasticity.**
- **Almond oil and dexpanthenol hydrate the skin and protect it from drying out.**
- **Natural bisabolol soothes the skin.**
- **AndreaCare Striae contains no additives such as hormones, synthetic emulsifiers or parabens.**

By regularly massaging AndreaCare Striae into your skin, you can help it and prevent stretch marks. The skin compatibility of AndreaCare Striae care cream has been dermatologically confirmed.



9. Other product recommendations

AndreaVit® – Vitamins and minerals for pregnancy

AndreaVit® is a multivitamin preparation containing 11 vitamins and 9 minerals and trace elements for women to prevent deficiencies before, during and after pregnancy.



AndreaDHA®plus D₃ + K₂ helps babies' development

In addition to vitamins, minerals and trace elements, it is important that pregnant and breastfeeding women get enough omega-3 fatty acids. DHA (docosahexaenoic acid) is a vital polyunsaturated fatty acid that is an important building block especially with regard to brain and nerve cells, and is found in the retina of the eyes. Vitamin D₃ promotes calcium absorption and therefore contributes to optimum bone health (strong bones) and high bone density. Vitamin K₂ plays a role in the transport of calcium. It helps to fortify the teeth and boosts jaw growth.



AndreaMag®relax – relaxed through everyday life

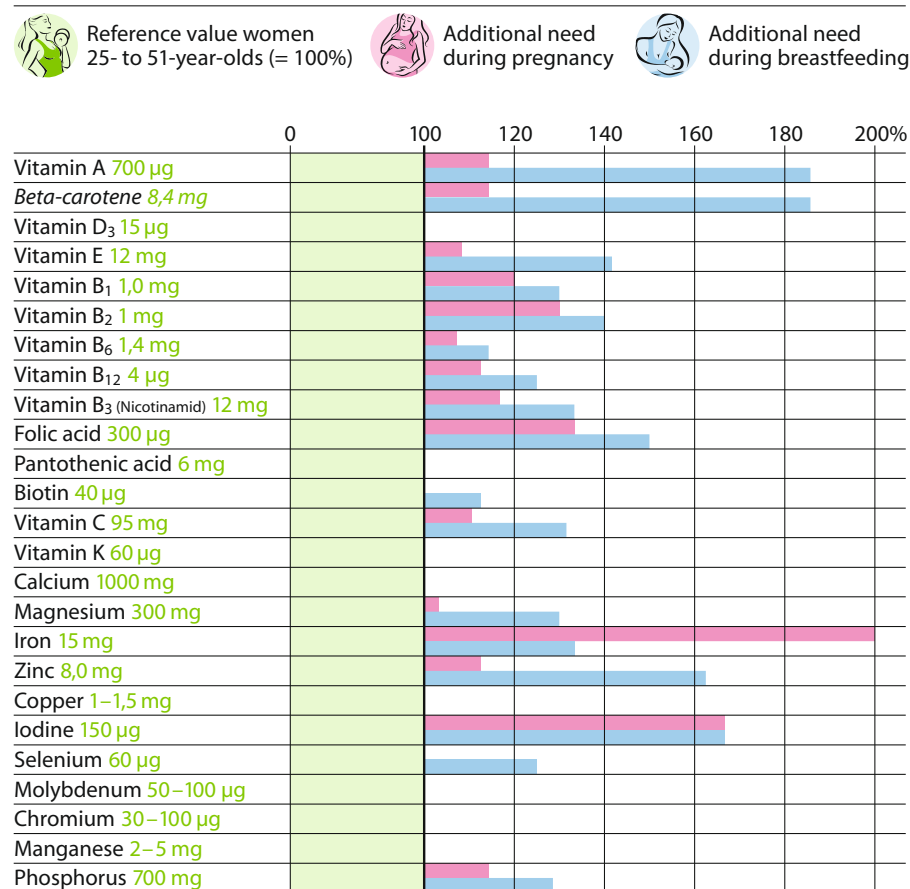
AndreaMag®relax can be taken to prevent magnesium deficiency.



10. Changed nutrient requirements in pregnant and breastfeeding women

The graphic shows how the need for vitamins and minerals increases in percentage terms during pregnancy and breastfeeding.

- **Pregnant and breastfeeding women not only have to supply their own bodies, but also those of their child.**
- **As a result, the need for nutrients is greatly increased.**



Sources: D-A-CH reference values for nutrient intake, 2nd edition, 2015. Retrieved from: <https://www.sge-ssn.ch/grundlagen/lebensmittel-und-naehrstoffe/naehrstoffempfehlungen/dachreferenzwerte/>

Vitamin D and iodine correspond to the Swiss reference values. The folic acid requirement for pregnant women corresponds to the Swiss reference values, the requirement for breastfeeding women and adults corresponds to the DACH reference values.

Would you like more information about
having children or breastfeeding?

For more detailed information brochures,
ask your doctor
or visit www.andreabal.ch.



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