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Folic acid deficiency

A normal balanced diet contains enough folic acid. However, a folic acid deficiency may cause anaemia and sometimes other symptoms.

What is folic acid deficiency?

Folic acid deficiency is a lack of folic acid in the blood. Folic acid (also known as folate) is a B vitamin and is needed to make new cells in your body, including red blood cells. Your body does not store very much folic acid. You need a regular fresh supply to keep healthy. If you do not have enough folic acid you may become anaemic.

What are the symptoms of folic acid deficiency?

Some people do not have any symptoms of folic acid deficiency. In these cases it is picked up on a blood test done for another reason, before they have a chance to develop symptoms.

Folic acid deficiency anaemia

Symptoms due to anaemia are caused by the reduced amount of oxygen in the body.

- Common symptoms include tiredness, having little energy (lethargy), feeling faint and becoming easily breathless.
- Less common symptoms include [headaches](#), heartbeats suddenly becoming noticeable (palpitations), altered taste and ringing in your ears ([tinnitus](#)).
- You may look pale.

Neurological symptoms

- [Pins and needles](#) or numbness, especially in your hands and feet.
- Muscle weakness.
- Visual disturbance.
- Memory problems or difficulty understanding things.
- Psychological problems, including depression and anxiety.

Oral symptoms

- Sore, red tongue.
- Mouth ulcers and sore cracks at the corners of your mouth.

What are the causes of folic acid deficiency?

Not eating enough foods containing folic acid (folate)

This is the most common cause. This occurs most often in elderly people who do not eat well. Alcohol-dependent people are another group often not eating properly. Good sources of folic acid include: broccoli, brussels sprouts, asparagus, peas, chickpeas and brown rice. You can find out more about foods high in folic acid from our [leaflet called Diets Suitable for People with Anaemia](#).

Pregnancy

Pregnancy causes reserves of folic acid in your body to be used by the growing baby. You are at risk of becoming low in folic acid during the later stages of pregnancy, particularly if you do not eat well during pregnancy.

The gut

Some uncommon conditions of the gut may cause poor absorption of folic acid – for example, coeliac disease.

Blood disorders

Some blood disorders can lead to a very high turnover of red blood cells – for example, sickle cell disease and thalassaemia. Normal amounts of folic acid in the diet may then not be enough and supplements may need to be taken.

Inflammatory conditions

Some inflammatory conditions can lead to low folic acid levels – for example, severe Crohn's disease. However, this is less common.

Medicines

Some medicines interfere with folic acid. Therefore, you may need to take extra folic acid whilst taking certain medicines. These include colestyramine, sulfasalazine, methotrexate and some anticonvulsant medicines used to treat epilepsy. If you are needing dialysis then you may be recommended to take folic acid supplements.

Complications of folic acid deficiency

Complications of folic acid deficiency are rare but can occur, especially if you have been deficient in folic acid for some time.

- When folic acid causes anaemia this can lead to heart problems, especially in the elderly.
- Temporary fertility problems, these reverse with folic acid supplements.
- When a pregnant woman has folic acid deficiency there is an increased chance of prematurity.
- When a pregnant woman has folic acid deficiency there is an increased chance of birth defects such as spina bifida.

How is folic acid deficiency diagnosed?

A [blood test](#) can confirm folic acid deficiency and whether you are anaemic. It is also very common to have a blood test for your vitamin B12 levels at the same time, as these can also be low. [Read more in the separate leaflet called Vitamin B12 Deficiency and Pernicious Anaemia.](#) You may need further tests to check for an underlying cause of the folic acid deficiency.

Folic acid deficiency treatment

Treatment for folic acid deficiency is easy and includes:

- Taking a tablet of folic acid (folate) each day.

- Following a balanced diet.

You need to take the tablet until the folic acid stores in the body are built up and any anaemia is corrected (usually for about four months).

You may need advice on diet to stay well and the tablets can be stopped if your diet improves. You may need to continue with treatment if a poor diet was not the cause of folic acid deficiency.

For example, if you have sickle cell disease you may need to take a folic acid tablet each day indefinitely. [See the separate leaflet called Diets Suitable for People with Anaemia.](#)

Folic acid and pregnancy

Extra folic acid (folate) is advised for at least the first 12 weeks of pregnancy for all women – even if you are healthy and have a good diet. If you take extra folic acid in early pregnancy you have less chance of having a baby born with a spinal cord problem such as spina bifida.

It is best to start taking the extra folic acid before becoming pregnant. If the pregnancy is unplanned then start taking folic acid as soon as you know you are pregnant. You can buy folic acid tablets at most health food shops or pharmacies.

- For most women the dose is 400 micrograms (0.4 mg) a day.
- If your risk of having a child with a spinal cord problem is increased then the dose is higher (5 mg a day – you need a prescription for this higher dose). That is, if:

- You have already had a previous baby with a spinal cord problem.
- You, your partner or a first-degree relative have a spinal cord problem.
- You have coeliac disease, [diabetes](#), sickle cell anaemia or thalassaemia.
- You are obese - especially if your body mass index (BMI) is 30 or more.
- You are taking certain medication for epilepsy (your doctor will advise).

See also the separate leaflets called [Planning to Become Pregnant](#) and [Diet and Lifestyle during Pregnancy](#).

Further reading

- [Guidelines for the diagnosis and treatment of cobalamin and folate disorders](#); British Committee for Standards in Haematology (2014)
- [Nagao T, Hirokawa M](#); Diagnosis and treatment of macrocytic anemias in adults. J Gen Fam Med. 2017 Apr 13;18(5):200-204. doi: 10.1002/jgf2.31. eCollection 2017 Oct.
- [Socha DS, DeSouza SI, Flagg A, et al](#); Severe megaloblastic anemia: Vitamin deficiency and other causes. Cleve Clin J Med. 2020 Mar;87(3):153-164. doi: 10.3949/ccjm.87a.19072.
- [Anaemia - B12 and folate deficiency](#); NICE CKS, March 2024 (UK access only)

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