Folic Acid Deficiency Anaemia

A lack of folic acid (folate) is one cause of anaemia. The usual cause is not eating enough foods which contain folic acid. It is treated easily by taking folic acid tablets. Pregnant women should also take extra folic acid to help prevent spina bifida and other related problems with their baby.

Understanding blood

Blood is made up of a fluid called plasma which contains:

- Red blood cells - which take oxygen around your body.
- White blood cells - which are part of your immune system and defend your body from infection.
- Platelets - which help our blood to clot if we cut ourselves.
- Proteins - and other chemicals that have various functions.

Red blood cells are made in your bone marrow and millions are released into your bloodstream each day. The average life of a red blood cell is 120 days, so a constant new supply of red blood cells is needed to replace the old ones. Red blood cells contain a chemical called haemoglobin. Haemoglobin binds to oxygen and takes oxygen from your lungs to all parts of your body.

To make red blood cells and haemoglobin constantly you need a healthy bone marrow and nutrients such as iron and certain vitamins, including folic acid (folate), which you get from food.

What is anaemia and folic acid deficiency anaemia?

Anaemia means that:

- You have fewer red blood cells than normal; or
- You have less haemoglobin than normal in each red blood cell.

In either case, a reduced amount of oxygen is carried around in your bloodstream. There are a number of different causes of anaemia (such as lack of iron or certain vitamins).

Folic acid (folate) is a 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. Many foods contain folic acid, including spinach, sprouts, broccoli, green beans, peas, chickpeas, brown rice, kidney, liver and potatoes. A normal balanced diet contains enough folic acid. However, a lack of folic acid will cause anaemia and sometimes other symptoms.

A blood test can confirm anaemia due to folic acid deficiency. It is also very common to have a blood test for your vitamin B12 levels as these can also be low. See separate leaflet called Vitamin B12 Deficiency and Pernicious Anaemia for more information.

What are the symptoms of folic acid deficiency?

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.

Other symptoms may include numbness is your hands and feet. Some people may also have depression.

What are the causes of folic acid deficiency?

- **Not eating enough foods containing folic acid (folate)** 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. Foods which are high in folic acid include broccoli, Brussels sprouts, asparagus, peas, chickpeas and brown rice. Other useful sources include fortified breakfast cereals, beans, some bread, oranges and bananas.
- **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.
- **Some uncommon conditions of the gut** may cause poor absorption of folic acid - for example, coeliac disease.
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. **Some inflammatory conditions** can lead to low folic acid levels - for example, severe Crohn's disease. However, this is less common. **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.

What is the treatment for folic acid deficiency?

Treatment is easy and is by taking a tablet of folic acid (folate) each day. You need to take this until the anaemia is corrected and the folic acid stores in the body are built up (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 a folic acid tablet each day indefinitely. See also 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 Pregnancy - Planning to Become Pregnant and Pregnancy - Diet and Lifestyle.

Further reading & references

- B vitamins and folic acid; NHS Choices
- Antenatal care for uncomplicated pregnancies; NICE Clinical Guideline (March 2008, updated 2017)
- Guidelines for the diagnosis and treatment of cobalamin and folate disorders; British Committee for Standards in Haematology (2014)

Disclaimer: This article is for information only and should not be used for the diagnosis or treatment of medical conditions. Patient Platform Limited has used all reasonable care in compiling the information but makes no warranty as to its accuracy. Consult a doctor or other healthcare professional for diagnosis and treatment of medical conditions. For details see our conditions.

Author: Dr Louise Newson
Peer Reviewer: Dr Hannah Gronow

Document ID: 4373 (v42)  Last Checked: 10/06/2016  Next Review: 10/06/2019

View this article online at: patient.info/health/folic-acid-deficiency-anaemia

Discuss Folic Acid Deficiency Anaemia and find more trusted resources at Patient.

Ask your doctor about Patient Access

- Book appointments
- Order repeat prescriptions
- View your medical record
- Create a personal health record (iOS only)

Simple, quick and convenient.
Visit patient.info/patient-access or search 'Patient Access'

© Patient Platform Limited - All rights reserved.