
Anaemia

Summary

- Anaemia means that either the level of red blood cells or the level of haemoglobin in your body is lower than normal, which means your body does not have enough oxygen.
 - Anaemia isn't a disease in itself, but a result of something not working properly somewhere in your body.
 - Anaemia can have many causes, including certain diseases or conditions and medications.
 - Low iron levels (iron deficiency) are the most common cause of anaemia.
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Anaemia is a deficiency in the number or quality of red blood cells in your body. Red blood cells carry oxygen around your body using a particular protein called haemoglobin. Anaemia means that either the level of red blood cells or the level of haemoglobin is lower than normal. When a person has anaemia, their heart has to work harder to pump the quantity of blood needed to get enough oxygen around their body. During heavy exercise, the cells may not be able to carry enough oxygen to meet the body's needs and the person can become exhausted and feel unwell. Anaemia isn't a disease in itself, but a result of a malfunction somewhere in the body. This blood condition is common, particularly in females. Some estimates suggest that around one in five menstruating women and half of all pregnant women are anaemic.

Red blood cells explained

Red blood cells are produced in the bone marrow and have a life span of about 120 days. The bone marrow is always making new red blood cells to replace old ones. Millions of new red blood cells enter the blood stream each day in a healthy person.

You need certain nutrients in your diet to make and maintain red blood cells. Each red blood cell contains a protein called haemoglobin. This protein gives red blood cells their colour.

Oxygen molecules absorbed in the lungs attach themselves to haemoglobin, which is then delivered to all parts of the body. All of the body's cells need oxygen to live and perform their various duties.

The bone marrow needs enough dietary iron and some vitamins to make haemoglobin. If you don't have enough iron in your diet, your body will draw on the small reserves of iron stored in your liver. Once this reservoir is depleted, the red blood cells will not be able to carry oxygen around the body effectively.

Causes of anaemia

Anaemia can have many causes, including:

- **dietary deficiency** – lack of iron, vitamin B12 or folic acid in the diet
 - **malabsorption** – where the body is not able to properly absorb or use the nutrients in the diet, caused by conditions such as coeliac disease
 - **inherited disorders** – such as thalassaemia or sickle cell disease
 - **autoimmune disorders** – such as autoimmune haemolytic anaemia, where the immune cells attack the red blood cells and decrease their life span
 - **chronic diseases** – such as diabetes, rheumatoid arthritis and tuberculosis
 - **hormone disorders** – such as hypothyroidism
 - **bone marrow disorders** – such as cancer
 - **blood loss** – due to trauma, surgery, peptic ulcer, heavy menstruation, cancer (in particular bowel cancer), or frequent blood donations
 - **drugs and medications** – including alcohol, antibiotics, anti-inflammatory drugs or anti-coagulant medications
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- **mechanical destruction** –mechanical heart valves can damage red blood cells, reducing their lifespan
- **infection** – such as malaria and septicaemia, which reduce the life span of red blood cells
- **periods of rapid growth or high energy requirements** – such as puberty or pregnancy.

Symptoms of anaemia

Depending on the severity, the symptoms of anaemia may include:

- pale skin
- fatigue
- weakness
- tiring easily
- breathlessness
- drop in blood pressure when standing from a sitting or lying position (orthostatic hypotension) – this may happen after acute blood loss, like a heavy period
- frequent headaches
- racing heart or palpitations
- becoming irritated easily
- concentration difficulties
- cracked or reddened tongue
- loss of appetite
- strange food cravings.

Groups at high risk of anaemia

Certain people are at increased risk of anaemia, including:

- menstruating women
- pregnant and breastfeeding women
- babies, especially if premature
- children going through puberty
- people following a vegetarian or vegan diet
- people with cancer, stomach ulcers and some chronic diseases
- people on fad diets
- athletes.

Diagnosis of anaemia

Depending on the cause, anaemia is diagnosed using a number of tests including:

- medical history – including any chronic illnesses and regular medications
- physical examination – looking for signs of anaemia and a cause for anaemia
- blood tests – including complete blood count and blood iron levels, vitamin B12, folate and kidney function tests
- urine tests – for detecting blood in the urine
- gastroscopy or colonoscopy – looking for signs of bleeding
- bone marrow biopsy
- faecal occult blood test – examining a stool (poo) sample for the presence of blood.

Treatment for anaemia

Treatment depends on the cause and severity, but may include:

- vitamin and mineral supplements – if you have a deficiency
- iron injections – if you are very low on iron

- vitamin B12 (by injection) –for pernicious anaemia
- antibiotics – if infection is the cause of your anaemia
- altering the dose or regimen of regular medications – such as anti-inflammatory drugs, if necessary
- blood transfusions – if required
- oxygen therapy – if required
- surgery to prevent abnormal bleeding – such as heavy menstruation
- surgery to remove the spleen (splenectomy) – in cases of severe haemolytic anaemia.

Please note: Take iron supplements only when advised by your doctor. The human body isn't very good at excreting iron and you could poison yourself if you take more than the recommended dose.

Long-term outlook for people with anaemia

The person's outlook (prognosis) depends on the cause of their anaemia. For example, if the anaemia is caused by dietary deficiencies, correcting the cause and the use of appropriate supplements for some weeks or months will resolve the condition. Relapses may occur, so changes to diet and, perhaps, regular supplements may be necessary.

In other cases, the anaemia may be permanent and lifelong treatment is needed. No matter what the cause, it is important to have a doctor regularly monitor your blood to make sure your red blood cell and haemoglobin levels are adequate and to adjust treatment if required.

Prevention of anaemia

Some forms of anaemia can't be prevented because they are caused by a breakdown in the cell-making process. Anaemia caused by dietary deficiency can be prevented by making sure that you eat food from certain food groups on a regular basis, including dairy foods, lean meats, nuts and legumes, fresh fruits and vegetables.

If you follow a vegan diet (one that does not include any animal products) talk to your health professional about recommended vitamin and mineral supplements.

Where to get help

- Your **GP (doctor)**
- **Dietitians Association of Australia** Tel. **1800 812 942**

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