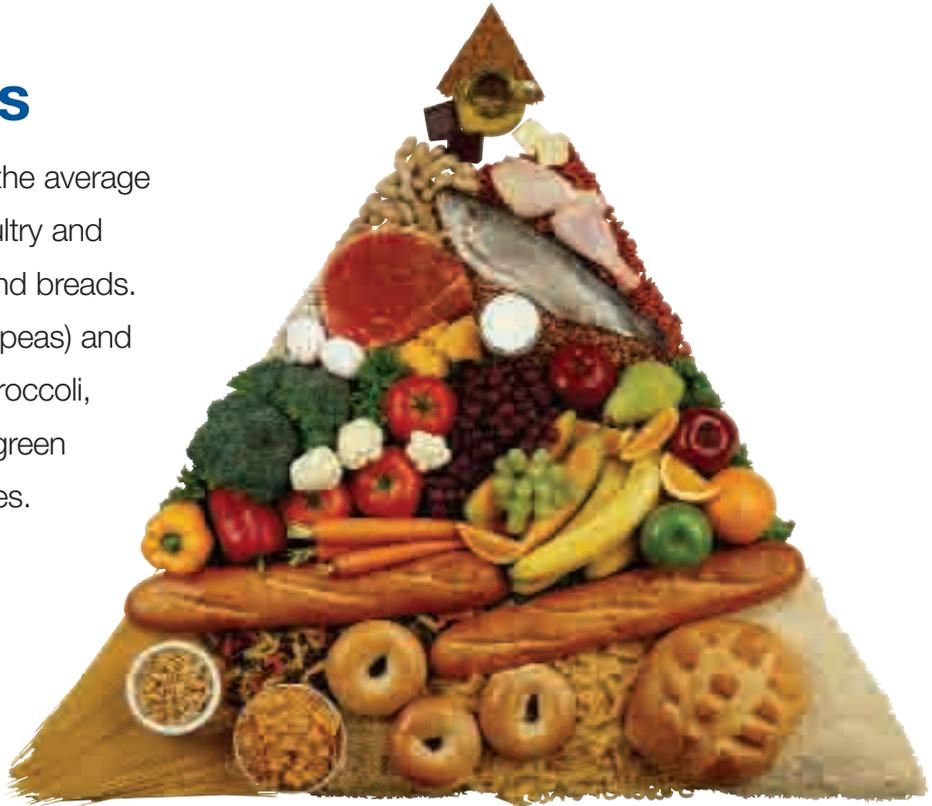


# Ironclad Foods

The major contributors of iron in the average Australian diet are meat, fish, poultry and iron-enriched breakfast cereals and breads. Dried fruit, legumes (lentils, dried peas) and green leafy vegetables such as broccoli, silverbeet, spinach and Chinese green vegetables are other good sources.



needs, but it worries him that adolescent females can adopt poor eating habits, with junk food or fad diets severely limiting their iron intake during a time of high demand.

In adults at least, iron deficiency was once thought to only be a problem when supplies became so low that anaemia developed. It's now accepted that the decline in iron stores normally passes through several stages and health problems might develop long before anaemia can be diagnosed.

Stage One is where the body's stores are reduced, but not exhausted. There are no clinical effects on the person or abnormalities that can be detected in blood tests. Stage Two occurs when iron stores are depleted but anaemia has not

yet developed. Because lab tests usually record low levels of iron in the blood but normal haemoglobin concentrations, this stage is called "Biochemical deficiency without anaemia", and until recently the consequences of biochemical iron deficiency were not considered to be significant.

Things are still not entirely clear, but recent research suggests that apart from the haematological (blood) changes, this condition may adversely affect your ability to do strenuous aerobic work, and, especially in children, affect immune function and psychomotor development.

Stage Three occurs when the iron deficiency causes anaemia. With no iron available, haemoglobin production falls and haemoglobin concentrations start to decline. You may start to notice tiredness, lethargy and dizziness. It's in investigating these very general symptoms that your doctor may request that a pathologist test a sample of your blood. To this test your doctor will add information gathered about your diet, menstrual history and possible other causes of blood loss.

"The first test conducted on your sample will be a full blood count: a measure of how many red blood cells you have, and if they are normally formed," explains Professor Metz. "A blood count is a routine investigation that is regularly done on patients with and without symptoms of anaemia."

A normal result may exclude other forms of anaemia but it does not rule out low iron levels. Because haemoglobin levels only fall in the later stages, the pathologist will search for earlier signs of iron deficiency by measuring other compounds in the blood.

Serum ferritin is the most useful measure of iron status because it accurately reflects the body's iron stores and because it is usually the first measure to change as iron levels fall. But serum ferritin levels can be affected by infection, inflammation or strenuous exercise, so the pathologist may also seek to measure other substances.

If the laboratory results show you to be low in iron your doctor will help you review your diet, and seek to limit any forms of blood loss. If your stores are still low, you may be prescribed iron supplements. Regular reviews of your iron levels will check on how well your body responds to the treatment. Far easier than all of this, of course, is to add a little more iron to your diet – it really could be that simple. 🔥

## EAT THE PAN!

Preparing food with iron cookware can greatly increase the iron in your diet: particles from the container get mixed with the food during cooking or storage.

**GPs NOTE:** This article is available for patients at <http://pathway.rcpa.edu.au>

## HAEM IRON SOURCES

Food	Serve	mg Iron
Liver	100g cooked	11.0
Beef	100g cooked	4.0
Chicken	100g cooked	1.2
Fish	100g cooked	0.6-1.4

## NON-HAEM IRON SOURCES

Food	Serve	mg Iron
Eggs	100 g (2)	2.0
Breakfast cereal (fortified)	30 g (1 cup)	2.5
Wholemeal bread	60g (2 slices)	1.4
Spinach	145g cooked	4.4
Lentils/kidney beans	100g cooked	2.5
Tofu	100g	1.9
Dried apricots	50g	2.0

The absorption of non-haem iron can be improved by combining sources of haem iron with non-haem iron and by including vitamin C-rich foods with meals.



## Mothers, Babies, and Iron

**B**reast feeding mothers are a particularly high-risk group for developing iron deficiency. During pregnancy they have had to supply iron to themselves as well as their baby, they usually lose a significant volume of blood during delivery and then they have to provide iron for their breast milk.

Iron in breast milk is called lactoferrin and its unique nature means only a tiny amount needs to be present for the baby to absorb what it needs. Provided the mother's iron stores are adequate, babies should be born with enough stores of their own that breast milk will be adequate for the first six months.

It's the period after this, between six and 18 months that is the most crucial, with as many as 35 per cent of toddlers

becoming iron deficient if mixed feeding is not established. The introduction of fortified cereals and breads as well as meat is necessary to meet the nine-milligram RDI for children under one year of age. After this, the RDI actually falls back to six to eight milligrams a day until age 11, which means an eight-month-old infant needs more iron than a 10-year-old child.

Iron demands are high because not only is it needed to make red blood cells but its also essential for the normal development of brain and nerve cells, and studies have shown that infants who do not get enough iron can suffer long-term setbacks in language development and motor skills.

## ARE YOU IRON DEFICIENT?

You are at risk of developing iron deficiency if you fit two or more categories:

You:

- Suffer blood loss from heavy periods or small but persistent bleeding from ulcers, gums, bowels
- Have a diet that delivers less than 70 per cent of the RDI of iron
- Are pregnant
- Donate blood
- Breast-feed
- Frequently take aspirin or ibuprofen.
- Follow a vegetarian diet