

## Iron

### Iron in the body

Iron is an important dietary mineral that carries oxygen around the body. Iron is stored in haemoglobin which is found in red blood cells.

Your haemoglobin levels in the blood may be low (anaemia) if you do not have enough iron. You might feel tired, have poor concentration and an increased risk of infection if you have low iron levels. To stay healthy, you need to eat a range of iron-rich foods each day.

### Iron in food

There are two types of iron in food:

1. Haem iron (from animal foods)
2. Non-haem iron (from plant foods)

### **Haem iron (best source)**

Haem iron is absorbed by the body about ten times more easily than non-haem iron. Foods that contain haem iron include:

- ✓ Meats: beef, lamb, pork and kangaroo
- ✓ Poultry: chicken or turkey
- ✓ Fish / shellfish: salmon, sardines and tuna
- ✓ Offal: liver and kidney

*Note:* The redder the meat or fish, the higher it is in iron.

### **Non-haem iron**

Non-haem iron is found in some plant foods but is not absorbed by the body as well as iron from animal foods.

Foods that contain non-haem iron include:

- ✓ Iron-fortified breads and breakfast cereals
- ✓ Legumes (e.g. kidney beans, baked beans, chickpeas)
- ✓ Green leafy vegetables
- ✓ Nuts/nut pastes and dried fruit
- ✓ Eggs

Eating vitamin c rich foods with your meal will increase iron absorption, particularly from non-haem sources. Good sources of vitamin c include:

- ✓ Fruits e.g. orange, lemon, pineapple, strawberries and blueberries
- ✓ Vegetables e.g. tomato, capsicum, broccoli

### **Iron blockers**

Tea, coffee, unprocessed bran, some soy proteins and medications can block the body's absorption of non-haem iron.

Avoid eating or drinking iron blockers at the same time as iron-rich foods.

## Iron tablets

Only take iron tablets if a blood test confirms that your levels are low. A common side effect from taking iron tablets is constipation. You can help manage constipation by eating a diet high in fibre from fruits, vegetables, wholegrains and legumes, drinking plenty of water and being physically active.

## How much iron do you need?<sup>1</sup>

Men	8 mg/day
Women (19-50)	18 mg/day
Women (51+)	8 mg/day

Requirements vary during pregnancy and lactation – refer to the NEMO resource 'Iron for pregnant women'<sup>2</sup>.

## How much iron is in food?<sup>3</sup>

Food (average serving size)	Iron (mg)
<b>Meat / Fish / Chicken</b>	
Kangaroo (100 g cooked)	4.4
Sardines (120 g or one tin)	3.24
Lean beef (100 g cooked)	3.1
Lean Lamb (100 g cooked)	2.7
Lean Pork (100 g cooked)	1.4
Egg (1 egg= 55 g)	1.1
Tuna (100 g or one small tin)	1.0
Chicken (100 g cooked)	0.9
Snapper (100 g cooked)	0.3
<b>Meat alternatives</b>	
Chickpeas (100 g)	6.2
Tofu (2 large squares = 100 g)	5.2
Baked beans (1 small can=140g)	2.24
Kidney beans (½ cup)	2.1
Three bean mix (½ cup)	2.0

<b>Breads and cereals</b>	
Iron-fortified breakfast cereal (1 bowl or 2 biscuits = 30 g)	3
Oats (1 cup cooked)	1.3
Non-fortified breakfast cereal (30 g)	1
Wholemeal bread (1 slice)	0.69
Wholegrain bread (1 slice)	0.63
Wholegrain cracker (4 crackers)	0.6
Pasta (1 cup cooked)	0.6
Brown rice (½ cup cooked)	0.5
<b>Vegetables</b>	
Cooked spinach (½ cup)	2.2
Cooked silverbeet (½ cup)	1.3
Beetroot (3 slices)	1.2
Asparagus spears (5 spears)	1.0
Green beans (½ cup)	1.0
Green peas (½ cup)	0.9
Bok choy (100 g)	0.8
Potato (1 small)	0.5
<b>Fruit</b>	
Dried apricots (8-10 apricot halves)	1.5
Sultanas (1 little box =37 g)	0.74
Prunes (5-6 prunes)	0.55
Fresh fruit (100 g)	0.2–0.7
<b>Snack foods and drinks</b>	
Milo (4 heaped teaspoons)	6
Liquorice (1 long strap = 50 g)	4.4
Cashews (2–3 tablespoons = 50 g)	2.5
Pine nuts (2–3 tablespoons = 50 g)	2
Pistachios (2–3 tablespoons = 50 g)	1.95
Almonds (2–3 tablespoons = 50 g)	1.8
Peanut butter (1 tablespoon)	0.5
Vegemite (1 teaspoon)	0.13

## **Iron-rich meal and snack suggestions**

### Breakfast

1. Iron-fortified cereal (e.g. Weetbix) with milk and dried fruit
2. Wholemeal toast with peanut butter + piece of fruit
3. Wholegrain toast with baked beans or eggs + tomato

### Lunch

1. Wholegrain sandwich with tuna/chicken and salad + piece of fruit
2. Wholegrain wrap with egg, hummus and salad + piece of fruit
3. Four-bean mix salad with lemon juice dressing + wholegrain roll + piece of fruit

### Dinner

1. Beef/lamb/kangaroo steak with steamed vegetables including spinach or silverbeet
2. Stir-fry containing chicken/pork/tofu/cashews/pine nuts and vegetables served with brown rice
3. Spaghetti bolognese containing beef mince, tomato-based sauce and pasta + baby spinach side salad

### Snacks

1. Wholegrain crackers (e.g. Vita-Weat) with hummus and tomato
2. Fruit & nut mix (include cashews and dried apricots)
3. Small can baked beans (130-140g)
4. 3-4 heaped teaspoons Milo mixed in milk

### References:

1. National Health and Medical Research Council, Australian Government Department of Health and Ageing, New Zealand Ministry of Health. Nutrient Reference Values for Australia and New Zealand. Canberra: National Health and Medical Research Council; 2006.
2. Nutrition Education Materials Online. Iron for pregnant women. Available at [www.health.qld.gov.au/nutrition/nemo\\_antenatal](http://www.health.qld.gov.au/nutrition/nemo_antenatal)
3. Food standards Australia and New Zealand. AUSNUT 2011-13 food nutrient database

Date: \_\_\_\_\_

### Individualised Meal Plan

Meal Plan Suggestions	Comments
<b>Breakfast</b>	
<b>Morning Tea</b>	
<b>Lunch</b>	
<b>Afternoon Tea</b>	
<b>Dinner</b>	
<b>Supper</b>	

Notes: \_\_\_\_\_  
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**For further information, contact your Dietitian or Nutritionist:** \_\_\_\_\_

