

# *Eat Smart to Prevent Iron Deficiency*



**Have a balanced diet. Choose a variety of iron-rich foods.**



**Consuming meat helps absorb more iron from dark green vegetables and beans.**



Choose more dark green vegetables, dried beans and nuts

Consume vitamin C-rich fruits and vegetables helps absorption of iron from plant sources



**Smart food choices to boost iron intake**



Eat moderate amount of meat, fish and seafood



Avoid drinking tea and coffee with meals if you are anaemic or at risk of iron deficiency

Online version



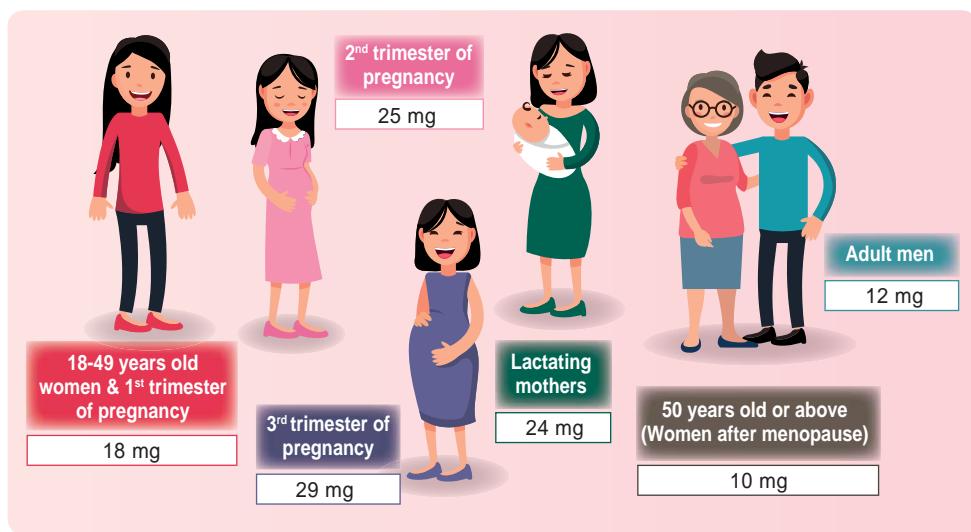
Department of Health

# What are the functions of iron?



- Iron is essential for making haemoglobin, the substance in red blood cells that carries oxygen to cells in our bodies. In our cells, iron is also essential in chemical reactions for energy supply.
- Iron deficiency may result in iron deficiency anaemia, paleness, dizziness, palpitations, fatigue, poor exercise tolerance and working capacity, weakened immunity, poor attention, etc. Iron deficiency may impair cognitive function and learning in children.
- Pregnant women need more iron for the growing foetus and for making more red blood cells for themselves. Severe anaemia during pregnancy may lead to iron deficiency in infants and harm their brain development.

## How much iron do we need? \*



Did you know?

Iron absorption in our gut is regulated by how much iron the body has. If the body lacks iron, more iron will be absorbed from food. Conversely, less iron is absorbed when the body store is sufficient.

# Food sources of iron

## Animal-based iron-rich foods

- Meat, poultry, liver, fish and seafood contain haem iron which can be absorbed easily.
- Red meat (beef, pork and lamb) is rich in haem iron. However, a high intake will increase colorectal cancer risk. World Cancer Research Fund recommends eating no more than 500g of cooked red meat a week (or 700-750g if uncooked). It is best to consume a variety of iron rich foods to obtain a well-balanced nutrition.

Meat, poultry & egg	Quantity (cooked)	Iron content (mg) <sup>▼</sup>
Beef (lean)	100 g	1.7-3.7
Pork (lean)	100 g	0.6-1.9
Lamb (lean)	100 g	1.5-3.4
Duck (lean)	100 g	2.6
Chicken leg	100 g	0.9-1.6
Pork liver	100 g	18.0
Egg	1 egg (60g)	0.7-1.0



Fish & seafood	Quantity (cooked)	Iron content (mg) <sup>▼</sup>
Oyster	100 g	4.3-12.0
Mussel	100 g	6.7
Clam	100 g	28.0
Shrimp	100 g	0.4-3.1
Salmon	100 g	0.3-1.3
Canned sardine	3 pieces (160g)	2.2-4.6



### For persons with iron deficiency or increased iron need:



Consuming red meat and eating liver occasionally help you improve iron status and recover from anaemia more quickly.

## Plant-based iron-rich foods

- Plant iron is non-haem iron. The gut absorption of plant iron is far less than iron in meat. It is affected by other foods and drinks in diet. Meat, fish and vitamin C help absorbing iron from plant foods. Tannic acid in coffee and tea, and phytates in vegetables, beans and grains reduce the absorption.
- Plant foods are significant sources of iron because a large proportion of what we eat is plant-based foods. You can get more iron by eating more dark green vegetables and beans, and choosing nuts and seeds as snack, etc.

Dried beans	Quantity (cooked)	Iron content (mg) <sup>▽</sup>
Lentils	½ cup (99 g)	1.6-2
Kidney bean	½ cup (89 g)	2-2.6
Chickpeas	½ cup (82 g)	1.1-2.4
Soybean	½ cup (86 g)	4.4
Adzuki bean	½ cup (115g)	2.3
Mung bean	½ cup (101g)	1.4
Black bean	½ cup (86g)	1.8



1cup= 240ml

Vegetables	Quantity (cooked)	Iron content (mg) <sup>▽</sup>
Spinach	1 bowl (160 g)	3.2-5.8
Chinese kale	1 bowl (160 g)	1
Bok choi	1 bowl (160 g)	1.6-3.2
Broccoli	1 bowl (160 g)	0.9-1.1
Green peas	1 bowl (160 g)	1.8-2.6
Edamame	1 bowl (160 g)	3.6
Wood ear fungus (soaked)	1 bowl (about 80g) *	4.4



1bowl= 250-300ml

\* By soaking 10g of dried fungus

Nuts & seeds	Quantity	Iron content (mg) <sup>v</sup>
Sesame (black)	1 tablespoon (9 g)	2.0
Sesame (white)	1 tablespoon (9 g)	1.3
Pumpkin seed	1 tablespoon (10 g)	0.2-0.9
Cashew nuts	1 tablespoon (15 g)	0.9
Almond	1 tablespoon (15 g)	0.7

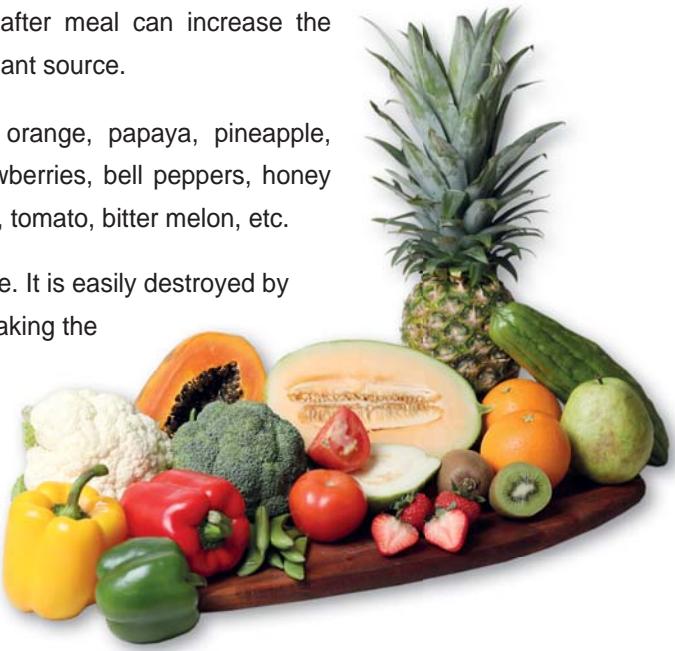
1 tablespoon= 15ml



- Iron-fortified breakfast cereals are also good source of iron. Look for the amount of iron the product contains by reading the nutrition label on the food packaging.

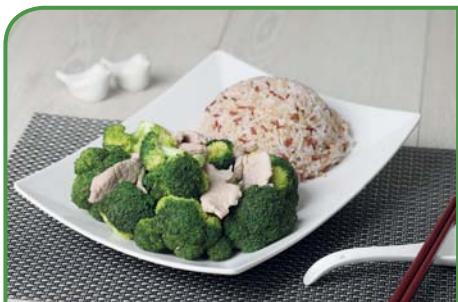
## Vitamin C-rich fruits and vegetables

- Consume vitamin C-rich fruits or vegetables with meal, or within 1 to 2 hours after meal can increase the absorption of iron from plant source.
- Examples are kiwifruit, orange, papaya, pineapple, guava, cantaloupe, strawberries, bell peppers, honey pea, cauliflower, broccoli, tomato, bitter melon, etc.
- Vitamin C is water soluble. It is easily destroyed by heat. Therefore avoid soaking the vegetables for long time. To reduce the loss of vitamin C from cooking, steam or cook these vegetables quickly with a small amount of water, or stir-frying with small amount of oil.



## How to get more iron from your diet?

- Have iron-rich vegetables along with meat, fish or seafood. Consume vitamin C-rich fruits after a meal. This helps the absorption of iron.



Stir-fry meat with broccoli served with red rice



Clam and udon in soup served with edamame

- Add iron-rich and vitamin C-rich ingredients in dishes:

Include iron-rich fungus, sesame or nuts, etc.

Use vitamin C-rich vegetables e.g. honey peas or cauliflowers, etc.



Stir-fry chicken with honey peas and wood ear fungus



Bell pepper and chickpeas with fusilli

Add bell peppers to enhance the taste and vitamin C in the meal

Use tomato and tomato paste as the sauce to enrich vitamin C content

- Include these ingredients when you buy or prepare salad:

### Iron-rich vegetables:

Baby spinach, butter lettuce, broccoli, edamame, green peas, beetroots, etc.

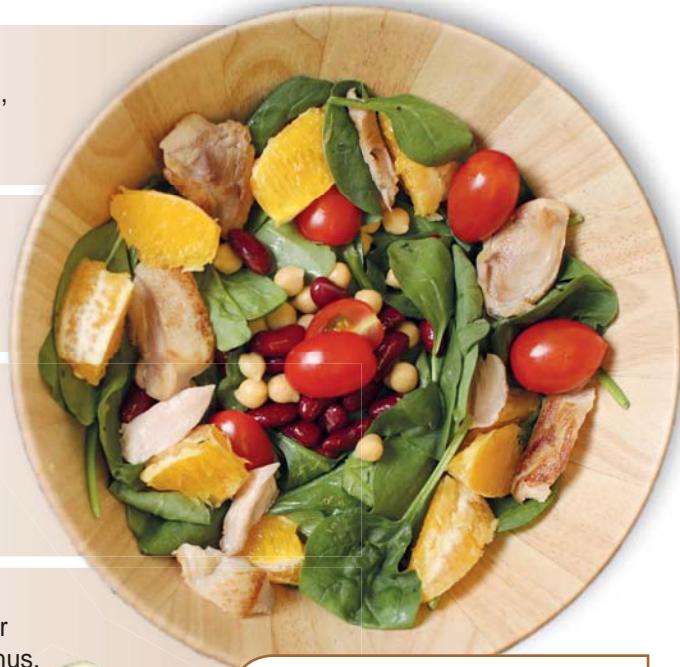
### Vitamin C-rich fruits and vegetables:

tomato, bell peppers, pineapple, oranges, etc.

### Iron-rich ingredients:

Chicken, salmon, egg, lentils, kidney bean, chickpeas, almond, pumpkin seeds, etc.

Replace salad cream with vitamin C-rich lemon juice or lime juice, or iron-rich hummus.



Baby spinach with  
grilled chicken and beans  
(with lemon juice)



### Tips for choosing beverages

- ➡ Plain water, water with added lemon, etc. are better choices
- ➡ It is best to enjoy your coffee or tea at least an hour before or after a meal to avoid their effect on the iron absorption

# Persons at risk of iron deficiency

- People at risk of iron deficiency are those with higher iron needs, such as infants and toddlers, adolescent girls and women with heavy menstrual periods, pregnant women and women after childbirth, frequent blood donors, persons with gastrointestinal conditions, etc. People who are on restrictive diet are also at a higher risk.
- Pregnant women, apart from consuming more iron-rich foods, can take a prenatal multivitamin/multimineral supplement containing iron.



## Notes on taking iron supplement



- Too much iron can be harmful. You should follow your doctor's advice when taking an iron supplement.
- Iron or iron-containing supplements is better absorbed if it is taken on an empty stomach, 1 hour before or 2 hours after meal. However, it can cause stomachache, nausea, diarrhea in some people. Taking the supplements with meal may avoid these problems.
- Calcium may interfere with iron absorption. Avoid taking iron supplement with a calcium supplement or calcium-rich foods at the same time.

## Other nutrients that you need for preventing anemia

Apart from iron, you also need folate and vitamin B12 to produce red blood cells. Green leafy vegetables, beans, orange, papaya, etc. are good source of folate. Vitamin B12 is found in meat, fish, egg and milk. Strict vegetarians can get vitamin B12 from vitamin B12-fortified food products, or take supplement under instruction of healthcare professionals. Having a balanced diet is essential to obtain all nutrients needed to prevent anemia.



Family Health Service

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