

Pumping Iron

By Julie Meek, Sports Dietitian (October 2017)

When I think of iron, I think of Popeye. The image that comes to mind is Popeye clutching his can of spinach and gulping it down with biceps bulging.

Funnily enough, Popeye did not get his iron and strength from spinach.

Iron is a pretty important nutrient, particularly for athletes including gymnasts. It is required to transport oxygen in the blood and the muscles. Iron is also involved with some of the enzymes that promote exercise metabolism and iron deficiency decreases the oxygen supply to muscles and slows down some of these metabolic reactions.

Heavy training increases iron requirements by increasing iron losses from the body through sweat and gastrointestinal bleeding (especially if anti-inflammatory drugs are used for injuries) and red blood cells are also destroyed by continual jarring and impact.

Iron in food is found in two forms – 'haem' iron which is found in animal foods and 'non-haem' iron which is found in plant foods. Spinach and silver beet are touted as great sources of iron and do provide non-haem iron, but it is not well absorbed by our bodies.



Foods containing non-haem iron can also contain other substances, which make the iron unavailable to your body. These include tannin (in tea), phytates (in wheat bran and breakfast cereals) and oxalates (in spinach). Including Vitamin C at the same meal enhances the iron absorption of these foods.

Many junior athletes, including gymnasts suffer from low iron and if daily intake is based mainly on vegetables, iron intake can be not only poor but also unavailable.

Where do you get it?

Food	Serve	Iron (mg)
Haem Foods		
Liver	100g (cooked weight)	11.0
Liver pate	40g (2 tablespoons)	2-3
Lean steak	100g (cooked weight)	4.0
Chicken (dark meat)	100g (cooked weight)	1.2
Fish	100g (cooked weight)	0.6 - 1.4
Oysters	100g (10)	6.0
Salmon	100g (small tin)	1.4
Non - Haem Foods		
Eggs	100g (2)	2.0
Breakfast cereal (fortified)	30g (1 cup)	2.5
Whole meal bread	60g (2 slices)	1.4
Spinach (cooked)	90g (2/3 cup)	3.6
Lentils/kidney beans (cooked)	100g	2.5
Tofu	100g	1.9
Almonds	50g	2.1
Sultanas	50g	0.9
Dried apricots	50g	2.0

* Table sourced from NUTTAB, Aust. Dept. Of Comm. Serv. And Health

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Initially, symptoms of iron deficiency can be tiredness and poor recovery from training. If iron stores become lower, symptoms include severe fatigue, cramps, headaches and shortness of breath. Iron deficiency usually develops in three stages:

- Decreased iron stores which are measured by blood ferritin levels
- Level of iron in the blood falls
- Haemoglobin levels drop

Iron requirements do vary and female athletes need to consume more iron than male athletes. Vegetarian athletes also need to pay extra attention to meeting iron needs.

How much do you need?

Daily Iron Requirements	mg Iron / day
General training - males and non-menstruating women	7 mg
General training - menstruating women	12-16 mg
General training - growing adolescents	10-13 mg

It can be super tricky to get enough iron and sometimes it does require some juggling to ensure that the absorption of non-haem iron foods are enhanced, but the extra energy and improved performance will be worth it.