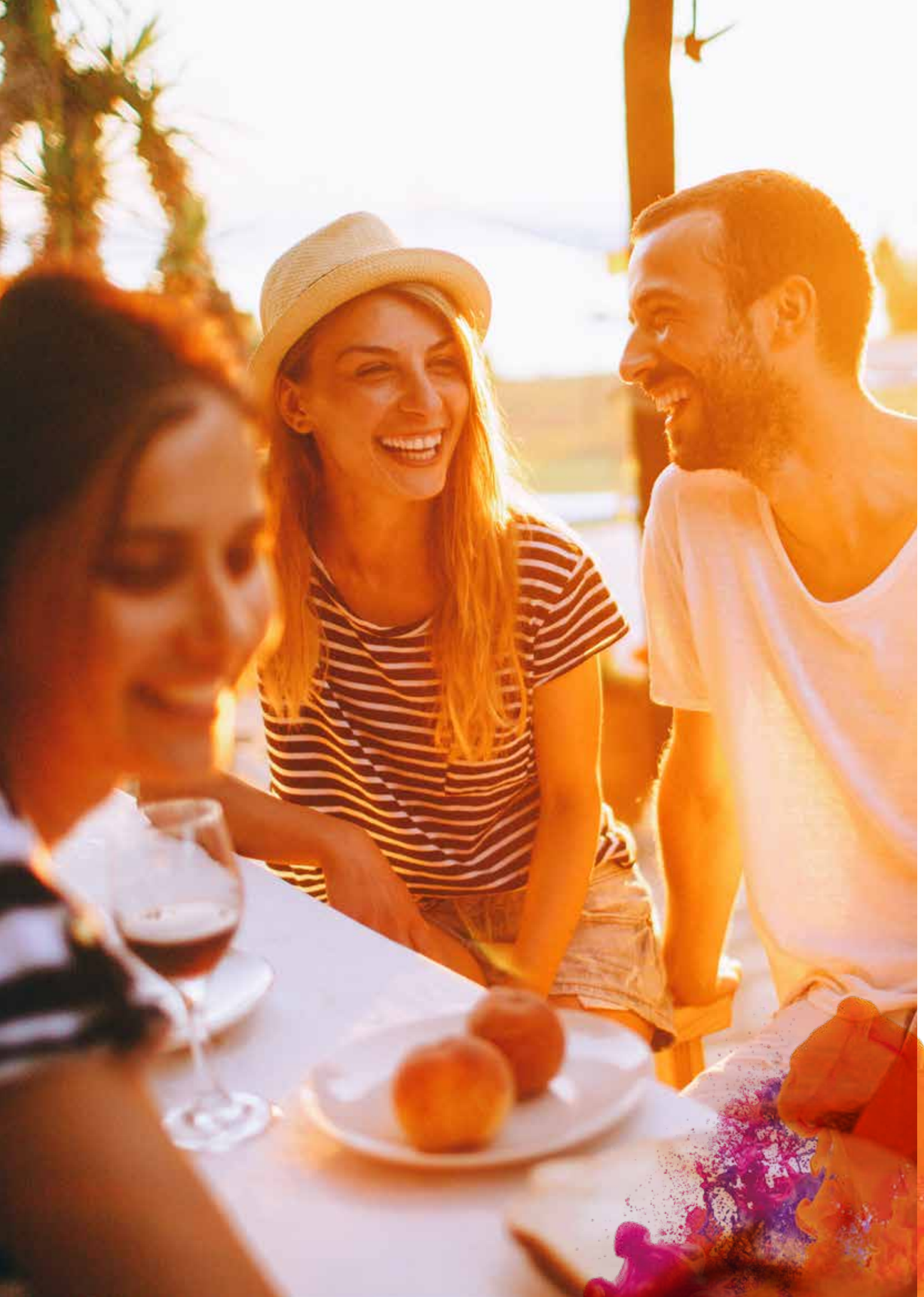
the ultimate guide to IRON

ACTIVE® IRON



introduction

Iron is essential to life. It contributes to the reduction of tiredness and fatigue and plays an important role in normal energy metabolism, oxygen transport, cognitive function, immune function and formation of red blood cells and haemoglobin.

Iron plays an important role in the metabolism of energy, so it can reduce tiredness and fatigue. It is important for cognitive function, immune function and the production of red blood cells and haemoglobin.

There is no substitute for a healthy well-balanced diet, but if you struggle to get enough iron in your diet you may choose to supplement.

The main problem with traditional iron supplements is the side effects that they can cause. Some products avoid causing side effects by reducing the dose of iron, but this makes them less effective. If you are looking for an iron supplement, look for one that is well absorbed and kind on your system.

about **iron**

It is estimated that 2 billion world-wide do not have adequate iron levels.

Many of us don't get enough iron in our diet and an inadequate intake can lead to a lack of energy.

Iron is an essential mineral that is stored in the body as ferritin. Ferritin attaches to a protein called transferring to be carried around the body. Iron can be released from ferritin when the body needs it.

Along with transporting oxygen around the body, iron produces the chemicals that transmit signals between brain cells and helps cognitive function.

Other functions include producing energy from food, helping you to maintain a healthy immune system and supporting your immune system.

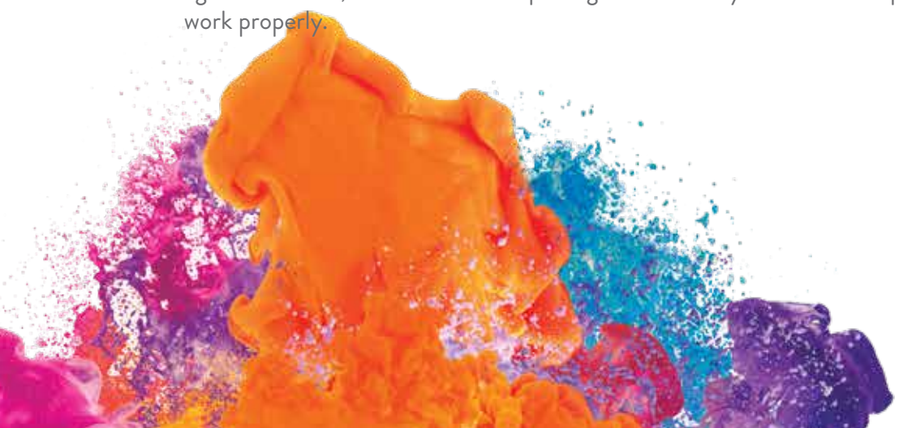
benefits of iron **for your immune system**

Maintaining a healthy immune system requires a balanced diet and an adequate intake of specific micronutrients. Iron is fundamental for the healthy development of the immune system.

Iron and immunity are closely linked, if you don't have enough iron your immune system may not function normally.

Iron is an essential mineral for both first and secondary immune response. Iron plays an important role in the immune system and iron stores are carefully controlled by the body.

Having too little iron degrades non-specific immunity, which is your body's first line of defence against bacteria, viruses and other pathogens. A healthy iron intake helps your immune system to work properly.



types of **iron**

there are two different types of iron: heme and non-heme iron.

Heme iron mainly comes from animal sources. Red meat, offal, poultry, and fish are all excellent sources of iron.
Non-heme iron comes from plant-based sources. These include fortified cereals and breads, rice, oats, nuts, beans and leafy greens. And best of all, dark chocolate is also rich in non-heme iron.

Heme iron is more easily absorbed by the body than non-heme iron. Therefore, vegetarians must eat twice as much iron as meat-eaters to get the same amount.

While iron is essential to your overall health, there are some problems associated with overdoing your intake of heme iron. Dramatically increasing the amount of heme iron in your diet can lead to inflammation.

Your body finds it much easier to regulate iron absorption from plant-based foods. And although heme iron is more easily absorbed, the body is not so good at regulating the process. So, it is important to find the right balance of heme vs non-heme iron.

how is iron **absorbed in the body?**

When iron enters the stomach, it's exposed to stomach acid and changed into a Fe+3 form, this will need to be converted back into Fe+2 by the body so that it can be absorbed.

The majority of iron is absorbed in the small intestine, specifically the duodenum. As iron enters the mucosal sites of the duodenum (the first part of the small intestine) this is where most of its absorption takes place.

If you are supplementing with iron, it is best to find a supplement that is designed to release at the body's natural site of absorption than one that breaks down completely in the stomach.

how much iron **do I need?**

Recent research conducted in the UK shows that most people are unsure of the recommended daily iron intake for women.

Almost half of the population (47%) stated they didn't know the recommended daily intake for women aged 19-50. 20% think it is the same as for men of the same age, 20% think twice as much for men the same age, and 12% think half as much for men the same age.

This indicates mixed messages and a lack of awareness around recommended iron intake for women.

How much iron you need depends on your sex, age and lifestyle. As a general rule, women need more iron than men due to menstruation, pregnancy and breastfeeding.

The EU uses a system called Nutrient Reference Value (NRV), which sets out the average daily amount of vitamins and minerals needed for good health. The NRV for iron is currently 14mg.

The US Department of Health has set out the following recommended daily allowance (RDA) for males and females depending on age.

AGE	MALE	FEMALE	PREGNANCY	BREASTFEEDING
1-3 years	7 mg	7 mg		
4-8 years	10 mg	10 mg		
9-13 years	8 mg	8 mg		
14-18 years	11 mg	15 mg	27 mg	10 mg
19-50 years	8 mg	18 mg	27 mg	9 mg
51+ years	8 mg	8 mg		

The RDA covers iron from all sources, both heme and non-heme, plus any iron supplements.

who is at risk of having **low iron levels?**

women with periods

Monthly periods are the most common cause of iron loss worldwide and research shows that women of childbearing age need 2-3 times more iron than men. Amongst women who experience heavier periods, adequate daily iron intake is particularly important and may be difficult to achieve with diet alone.

Women often experience increased iron need during perimenopause and menopause as periods can become irregular and menstruation may be more frequent or heavy.

A woman's natural iron regulatory system increases absorption of iron from her diet during these times of blood loss. Her normal absorption rate of 1 milligram is stepped up to 1.5–3 milligrams per day—the female body's natural response to blood loss. However, it may be difficult to meet this increased need for iron through diet alone, particularly in women with low red meat intake, have a high intake of foods that inhibit absorption and have plant-based diets.

Women with problem periods are likely to have a higher iron requirement than others, according to Dr Dawn.

Amongst women who experience heavier periods adequate daily iron intake is particularly important and may be difficult to achieve with diet alone.

vegetarians & those on a **plant based diet**

Although a vegetarian diet will be high in iron rich foods, these plant-based (non-haem) sources of iron are poorly absorbed in the diet. This may be coupled with other potential absorption obstacles such as phytates in whole-grains and legumes or tannins in tea and coffee, which can bind iron and further reduce absorption.

ACTIVE EXERCISERS

Iron is used by the body's muscles to help produce energy and this explains why active exercisers, especially adults who enjoy endurance exercise (e.g. running, rowing, cycling) may have an increased need for iron to support their energy levels and maintain their immune system.

BLOOD DONORS

The main adverse effect of blood donation is iron loss. Blood donation experts often recommend a course of at least 30mg of daily iron for up to 6 months post donation. This also helps with red-blood cell production and haemoglobin.

PREGNANT & POSTPARTUM WOMEN

There is an increased need for iron when pregnant. During this time, the amount of blood in your body increases by 30-50%. This increases the requirement for iron in your body as it's needed to make haemoglobin, which carries oxygen to other cells in your body.

Research shows that many women do not have sufficient iron in their diet to meet their daily needs. This is also true during pregnancy, especially during the second and third trimesters when dietary iron requirements can increase to as much as 30mg per day. Women also need to replenish their iron stores post partum due to blood loss during childbirth.

types of **iron supplements**

There are several different types of iron supplements available. These include:

- **Ferrous sulfate**
- **Ferrous gluconate**
- **Ferric citrate**
- **Ferric sulfate**

These supplements are usually available as tablets and capsules but also come as salts or liquids. However, different types of iron supplements contain varying amounts of elemental iron. Most iron supplements contain non-heme iron.

Just as there's a difference in how the body absorbs heme and non-heme iron, absorption of iron supplements also varies. A lot depends on how and when you take your iron supplements.

Vitamin C is known to help with iron absorption, and some supplements have to be taken with a glass of orange juice to maximise their performance. To get the best absorption, other iron supplements need to be taken along with food. Even with these measures, lots of people still experience the unwanted side effects of nausea or an upset stomach.

By contrast, Active Iron has x2 better absorption compared to standard ferrous sulphate supplements. And its gentle formula means you can take it on an empty stomach.

liquid **iron**

Liquid iron supplements are often proposed as an alternative for those who experience side effects such as constipation or nausea. It is suggested the liquid format is gentler on the stomach and easier for the body to absorb. However, manufacturers tend to make liquid iron supplements with low potency. This is because if a child accidentally drank liquid iron, they could face serious health complications.

Furthermore, some foods are known to affect your body's ability to absorb iron.
Health care professionals usually advise you to avoid taking iron supplements with tea, coffee, milk and dairy products. Wholegrain cereals with high levels of phytic acid are also best avoided.

who should consider taking **iron supplements?**

If our iron intake is lower than our iron use, we can experience a lowering of our iron levels. This can happen for a variety of reasons and is either a result of not absorbing enough iron or due to using an excess of iron. An indicator that you may not have optimum iron levels is tiredness and fatigue.

As highlighted above, the people who are most at risk of having inadequate iron levels and as a result are most likely to need an iron supplement are:

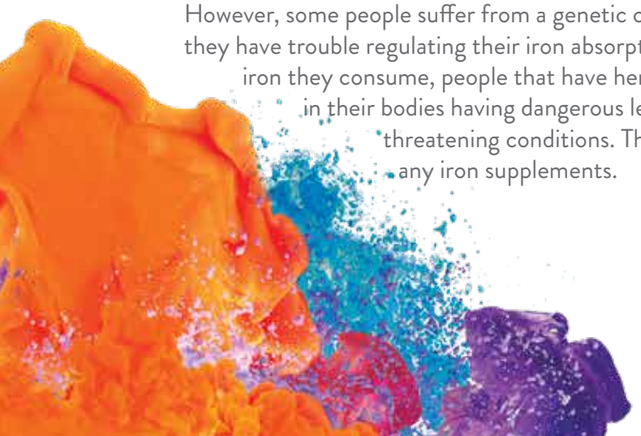
1. **Women with periods**
2. **Pregnant and Postpartum Women**
3. **People who follow restricted diets e.g. vegetarians.**
4. **Avid exercisers and sportspeople e.g. marathon runners, cyclists and endurance athletes.**
5. **Blood donors.**

how much iron is **too much?**

Now that you know how much iron you need, you might be wondering "how much iron is too much?" You might even think that the more iron you take, the better. While this might be true for some nutrients, it's definitely not the case for iron. It is recommended that adults do not consume more than 45 mg of iron daily unless directed to do so by a health care professional.

For kids, taking too much iron can be toxic. Doctors advise keeping your iron supplements in a cabinet where children can't reach them. For most adults, it's hard to overdose on iron just from eating iron-rich foods and taking iron supplements. This is because adults have systems that regulate the iron intake.

However, some people suffer from a genetic condition known as hemochromatosis, which means they have trouble regulating their iron absorption. While most adults absorb only around 10% of the iron they consume, people that have hemochromatosis can absorb up to 30%. This can result in their bodies having dangerous levels of iron, which can reach vital organs and cause life threatening conditions. That's why people with hemochromatosis shouldn't take any iron supplements.



when is the best **time to take iron?**

The best time to take iron is on an empty stomach, so ideally at least 1 hour before or 2 hours after eating. But it's not as simple as that, the best time to take an iron supplement will depend on a number of factors. Generally, iron supplements are best absorbed when taken with water or fruit juice on an empty stomach. Avoid having foods and drinks like eggs, tea, coffee, and chocolate with your iron supplement as they will hinder iron absorption.

what are the **best types of iron supplements?**

When selecting the right supplement for you, the main things to consider are:

1. **iron absorption**
2. **potential side effects**

You want to select an iron supplement that has the maximum absorption with the minimum potential side effects. People who have gut irritation from iron most commonly report constipation, followed by nausea. It is estimated that 8/10* people who take iron tablets report side effects.

In addition to causing these complaints, 50%** of people who have taken iron tablets stopped taking them and were not able to get the iron they needed. For us this was simply not good enough.

We wanted to make iron better so people could feel the benefits of iron with reduced gut irritation. Kind and gentle to the stomach, Active Iron increases the amount of iron absorbed by targeting the body's natural site of iron absorption in the intestine.

In fact, Active Iron is clinically proven to have x2 better absorption compared to standard ferrous sulfate iron supplements.

The ground-breaking technology in Active Iron works by protecting the iron as it passes through the stomach delivering it to the intestine where it targets the body's natural iron absorber DMT-1. This means whatever your needs, you will be getting the maximum amount of iron and reduced side effects.

ACTIVE IRON KIND & STRONG

conclusion

If you're feeling tired and have a lack of energy, it could be a shortage of iron (there also maybe an underlying health condition so speak to your health care professional). Although research has found that at least four million Britons may be affected by inadequate iron levels, many of us don't know how much iron we need or how to get it.

If you are struggling to get enough iron talk to your GP or pharmacist about iron supplementation and choose one that is well absorbed and kind on your system.

we made **iron better.**

ACTIVE IRON IS KIND AND STRONG

x2 CLINICALLY PROVEN BETTER ABSORPTION*

yes! NON-CONSTIPATING FORMULA

AVAILABLE AT

Leading pharmacies and healthfood stores nationwide and online at activeiron.com.

**Clinically proven twice the absorption compared to iron sulfate. Wang et al, Acta Haematologica 2017; 138: 223-232. Food supplements are not a substitute for a varied diet and a healthy lifestyle.*