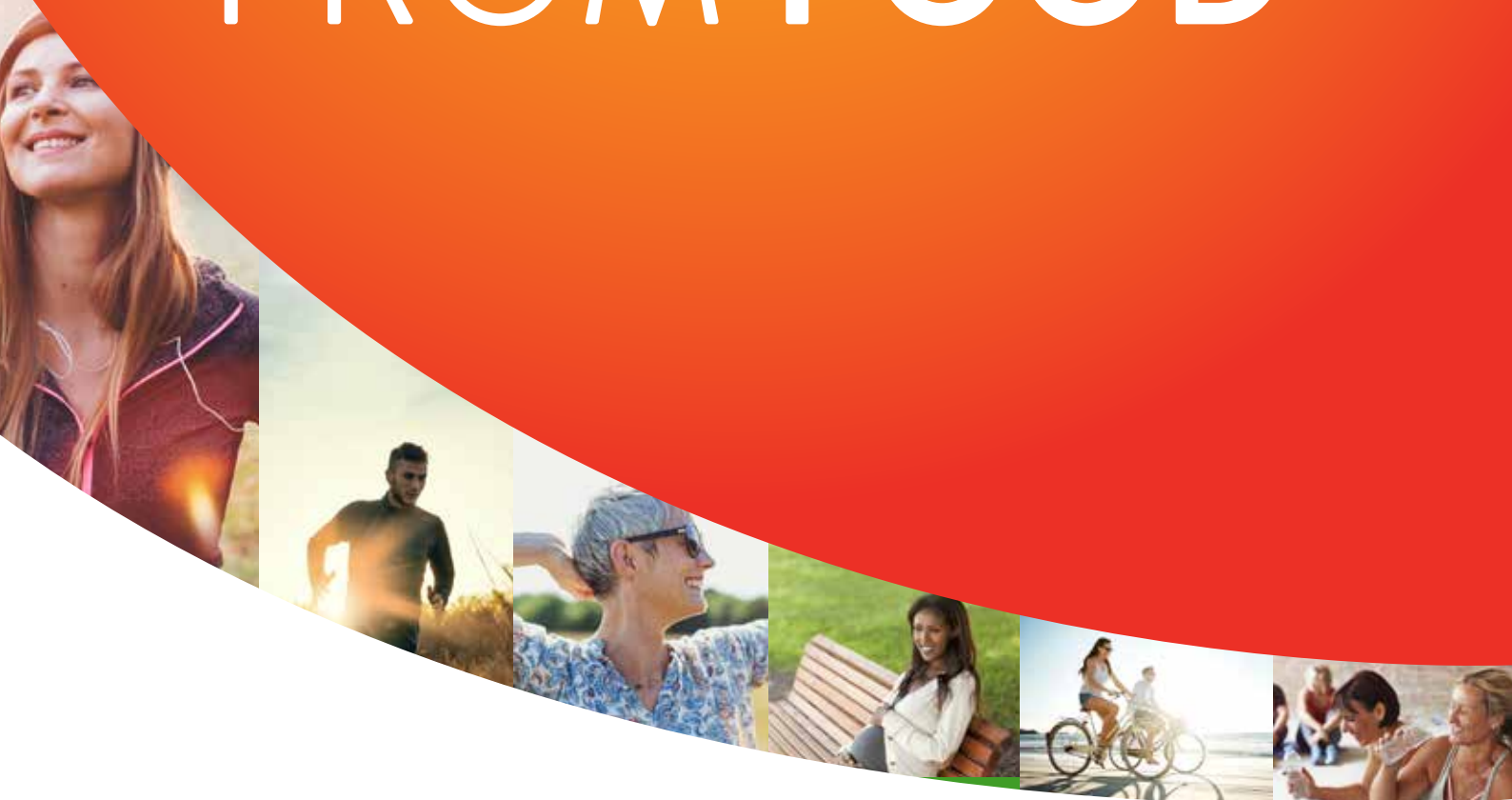


the ultimate guide to getting enough

IRON FROM FOOD





introduction

Iron is special. Unlike many of the essential minerals in our bodies, iron can easily change its chemical state. Like a shape-shifter, iron can play a number of different important roles in the body.

Before our bodies can reap its benefits, we must consume and absorb the proper amount of iron daily. Below, you'll find an in-depth look at iron—what it is, where to find it, and how to get the right amount in your daily diet.



what is iron?

Iron is a mineral that our bodies require to grow and develop. Its main role is to carry oxygen throughout our bodies so our cells can produce energy.

We use iron to make red blood cells and hemoglobin. Hemoglobin is a protein in red blood cells that carries oxygen from our lungs to the rest of our body. We also need iron to make the protein myoglobin, which carries oxygen to our muscles.

why is iron so important?

Iron is essential to life. Besides oxygen transportation, iron plays an important role in a variety of processes in our bodies. It supports cognitive function. It contributes to the proper functioning of our immune systems. It helps our bodies produce energy and reduces tiredness and fatigue and plays a role in cell division. Without it, no living and breathing creature could survive.

the difference between heme and non-heme

The iron we eat comes in two main forms: heme and non-heme. While our bodies can use both forms of iron, heme iron is much easier to absorb. Animal products, like red meat, organ meat, seafood, and poultry contain both heme and non-heme iron.

Plants, even those high in iron, only contain the non-heme form of iron. Non-heme iron is harder to absorb. Its sources are often high in phytates—a naturally occurring compound found in all plant foods. Phytates bind to iron and then can carry it through the digestive tract unabsorbed.

To make up for non-heme iron's poor absorption rate, vegetarians and vegans who avoid eating meat need nearly twice as much iron as meat-eaters.

how do our bodies get iron?

Essential minerals, like zinc, magnesium, sodium, and iron, aren't made by our bodies. They come from rocks, soil, and water. Plants absorb these minerals as they grow. Then, when we eat the plants or eat an animal that's eaten those plants, our bodies receive the minerals we need to live. Iron, therefore, has to come through our diets.

how much iron does my body need?

The amount of daily iron your body requires depends on who you are. Your age, your sex, and your lifestyle all come into play when determining your daily iron need.

In general, we need between 7 and 18 mg of iron per day. However, certain circumstances, like pregnancy, can increase this requirement. Below, you'll find a chart with more specific intake ranges according to the current Recommended Daily Allowance (RDA).

AGE	MALE	FEMALE	PREGNANCY	LACTATION
Birth to 6 months	0.27 mg*	0.27 mg*		
7-12 months	11 mg	11 mg		
1-3 years	7 mg	7 mg		
4-8 years	10 mg	10 mg		
9-13 years	8 mg	15 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		

*Adequate Intake (AI)

If you follow a vegetarian or vegan diet, the National Health and Medical Research Council recommends consuming 1.8 times the RDA of iron listed above.





is there such a thing as too much iron?

Our bodies cannot excrete excess iron. Instead, we store extra iron in our body tissues, joints, and organs. Iron overload, or a genetic condition- hemochromatosis, causes the body to absorb too much iron, which then builds up in the body. Excessive iron can damage digestion and other critical functions, so it's important to note whether hemochromatosis runs in your family.

what are the best sources of heme iron

Heme iron, found in animal foods, is easier to absorb. Here's a list of the top 20 sources of heme iron that you can add to your diet.

BEEF

Beef is the meat most commonly associated with iron, and for good reason. This meat offers 2.2 mg of iron per every 3 oz serving.

LAMB

For every 3 oz of lamb, you'll receive 1.6 mg of iron. Lamb is also rich in protein and important vitamins and minerals, like vitamin B-12, selenium, zinc, niacin, and phosphorus.

HAM

Ham, like all meat, is a source of complete protein. With 3 oz of ham, you'll receive 15 grams of protein and 1.3 mg of iron.

PORK

Roasted pork tenderloin is one of the richest iron sources among pork products. One 3 oz slice contains nearly 1 mg of iron.

DRIED BEEF

Dried beef, like beef jerky, is full of protein and many vitamins and minerals. In just 3 oz, dried beef packs in 9.4 mg of iron.

CHICKEN

Poultry can be a good source of iron and can easily fit into your daily diet. 3 oz of chicken contains 1.1 mg of iron, as well as 23 grams of protein.

TURKEY

Prefer turkey? A 3 oz serving has 0.9 mg of iron—slightly less than chicken—but it offers an extra gram of protein.

DUCK

Although it's higher in fat, duck provides the most iron in the poultry category. A 3 oz serving contains 2.3 mg of iron.

LIVER

All organ meats are packed with iron and other crucial nutrients and minerals. The amount of iron in a 3 oz serving of liver depends on its source. For example, beef liver offers 4.15 mg of iron, while chicken liver packs in 7.62 mg of iron.

KIDNEY

Rich in protein, omega-3 fatty acids, and nutrients, kidney meat is considered by many a heart-healthy meat option. One 3 oz serving offers 4.9 mg of iron.

HEART

Heart meat is highly nutritious and provides high amounts of protein, zinc, copper and B vitamins. It's also packed with iron. One 3 oz serving of chicken heart contains 9 mg of iron.

TUNA

Most fish are highly nutritious. But certain varieties, like tuna, are especially high in iron. A 3 oz serving of canned tuna contains 1.4 mg of iron, and 3 oz of fresh tuna contains 0.8 mg of iron.



MACKEREL

Mackerel is full of vitamins and minerals, including iron. 3 oz of mackerel contains 1.2 mg of iron.

HADDOCK

This mildly sweet white fish is as healthy as it is tasty. Haddock is rich in minerals, like selenium, magnesium, potassium, and zinc. It's a healthy source of iron, with 0.5 mg of iron per 3 oz serving.

SALMON

Salmon offers a bit less iron than other fish (with around 0.3 mg per 3 oz serving). But it's one of the healthiest iron sources. Wild-caught salmon also contains large amounts of heart healthy omega-3 fatty acids.

SARDINES

These salty, scaly fish are excellent sources of protein, omega-3 fatty acids, and iron. 3 oz of sardines provides 2.48 mg of iron.

SHRIMP

Snack on some shrimp and boost your iron all at once. These crustaceans can bump up your iron intake by 0.4 mg per 3 oz.

CLAMS

Clams blow crustaceans out of the water when it comes to their iron content. This mineral and vitamin-packed shellfish provide a whopping 24 mg of iron for every 3 oz serving.

OYSTERS

Oysters are another iron-rich shellfish. Six medium oysters, or 3 oz, contain 4.9 mg of iron. They're also extremely rich in zinc and can boost dopamine, one of our feel-good neurotransmitters.

SCALLOPS

Buttery and tender scallops are a delicious delicacy. But they're also considered one of the healthiest kinds of seafood. Rich in vitamins, minerals, protein, and antioxidants, these tasty shellfish provide 0.78 mg of iron per 3 oz serving.

what are the best sources of non-heme iron?

Non-heme iron, found in plants, is harder for our bodies to absorb, so vegans and vegetarians need a higher daily intake of iron than meat-eaters. Below, we'll also talk about how to increase your absorption of both heme and non-heme iron so that you can help your body get the iron it needs.

SPINACH

Spinach is not only high in iron, it also contains a lot of vitamin C, which increases iron absorption. Spinach is packed with antioxidants, making this leafy green a great one to add to your diet.

QUINOA

Quinoa is a great option for people who eat gluten-free. Adding quinoa to your diet will increase your iron intake, as well as other important nutrients like protein, antioxidants, iron, magnesium, and copper. Don't like quinoa? No problem. Other whole grains, like amaranth, spelt, and oats pack in a healthy dosage of iron.

BROCCOLI

Rich in iron and vitamin C, broccoli is an excellent food that can boost your iron consumption and absorption. It also provides your body with other nutrients, like vitamin K and fiber.

DARK CHOCOLATE

While it does contain some tannins, which can temporarily lessen iron absorption, dark chocolate contains more iron than other sweet treats. Full of antioxidants and micronutrients, including iron, copper, and magnesium, dark chocolate can be a healthier option for a post-dinner dessert.

MUSHROOMS

Chanterelle mushrooms, in particular, are packed with iron. For every 200 gram-serving, this fungal food provides a mighty 6.94 mg of iron.

CANNED TOMATOES

The nutrients in tomatoes change as they are processed and canned. One example of such a nutrient is iron. Fresh tomatoes offer about one-third the iron as canned tomatoes. Per every half-cup serving, canned tomatoes carry 1.57 mg of iron.

BEET GREENS

Juiced, chopped and tossed, or sauteed—beet greens are rich in many nutrients, including iron. A 100 g serving of cooked beet greens offers 1.9 mg of iron.

SWISS CHARD

This colorful vegetable tastes great in a salad. Mix it with the other leafy greens on this list for an iron-packed lunch. Or steam it and get 3.4 mg of iron per 150 g serving.

SEAWEED

Seaweed is one of the highest sources of iron. It also is full of vitamin C, which aids in iron absorption. These vegetables are rich in a range of minerals, due to the mineral concentration in seawater. Seaweed is also packed with antioxidants, vitamin K, as well as soluble and insoluble fiber. It's also one of the few vegetable sources of vitamin B-12.

OLIVES

Olives are a good source of iron, as well as vitamin E, copper, calcium, and healthy fats. One 135 g serving of black olives has an astounding 8.48 mg of iron.

BRUSSELS SPROUTS

Brussels sprouts have been the butt of culinary jokes for too long. When broiled, these small and tender cabbages are actually delicious. Plus, they pack in a big iron punch, with over 2 mg of iron per 150 g serving.

GREEN CABBAGE

Green cabbage can also boost your iron levels, with nearly 1 mg per 200g serving. Chop it and add it on top of your vegan nachos. Saute it up in an Asian stir-fry. Or steam it with vegetable broth and served as a side.

CHIA SEEDS

Chia seeds are an excellent source of many essential minerals. A 28 g serving offers 2.2 mg of iron. These tiny seeds are also high in manganese, phosphorus, copper, selenium, magnesium, and calcium. They're also a complete source of protein and are high in heart-healthy omega-3 fatty acids.

POTATOES

All potatoes contain some iron in their skins, but red potatoes are the winners when it comes to their iron content. One red potato offers 2.1 mg of iron. Sprinkle a serving of dried thyme on your potatoes to boost your iron even higher. Just one tablespoon of this herb offers 5.31 mg of iron.

CASHEWS

Nuts and seeds contain a good amount of iron. Cashews, as well as almonds, pine nuts, and macadamia nuts, are particularly high in iron. One 28.4 g serving of cashews contains 1.9 mg of iron.

LEGUMES

Legumes, such as beans, peas, lentils, soybeans, chickpeas offer a wealth of nutrients, including folate, potassium, magnesium, and fiber. They're each, also, an excellent source of iron. A one cup serving of green peas, for example, offers 2.1 mg of iron, and 3 oz of cooked lima beans offers 2.2 mg.

PALM HEARTS

This iron-friendly veggie is harvested from the core of certain palm trees. It's rich in minerals and nutrients, like potassium, copper, phosphorus, zinc, and, of course, iron. 100 g of palm hearts contains 1.7 mg of iron.

PRUNE JUICE

Prune juice is a great source of iron. Just one-half cup contains 3 mg. Prune juice is also high in antioxidants, several vitamins, and fiber.

MULBERRIES

Mulberries contain high amounts of both iron and vitamin C, which can boost your iron absorption. Just 10 of these berries offer 0.3 mg of iron. They're also packed with potassium and vitamins E and K.

DRIED APRICOTS

One cup of dried apricots offers 4.1 mg of iron. These healthy snacks are also rich in fiber, vitamins, minerals, and antioxidants.

when to supplement with iron

Iron supplements are a great way to hit your daily nutritional requirement. If you're interested in supplementing with iron, you can have your iron levels tested once per year to determine your iron requirements.

It is estimated that 2.1 billion people in the world have insufficient iron levels.

A supplement could make sure you're reaching your daily requirement. Be careful when picking an iron supplement. Some cause constipation and stomach upset, while others, like our advanced iron supplement, reduce gut irritation from iron and have twice the absorption rate versus gold standard ferrous sulfate.

common foods that limit iron absorption

Some foods act as barriers to our body's ability to absorb iron sufficiently. Even if you're eating foods high in iron, your body might not be absorbing all of it if your diet is also full of certain foods.

While we don't recommend cutting out any foods completely, knowing how different foods affect your iron levels can help you make the best, educated decision for your own health.

DAIRY

While dairy may be beneficial in some ways, it can have a negative effect the way our body interacts with iron. The calcium and protein in cow's milk have been shown to inhibit the body's ability to absorb iron from the food we're eating.

EGGS

Eggs are a well known source of haem iron. However, studies have found that a certain compound in eggs impairs our absorption of iron significantly. This compound is a protein called phosvitin that binds to iron, keeping it from being absorbed.

TANNINS

Several studies have found that tannins, found in black teas, coffee, cocoa, spices, and some nuts and fruits also have the ability to inhibit iron absorption.

The foods you eat determine how much iron you get in your body, but it also affects how well that consumed iron is absorbed. To avoid losing the iron you're consuming, steer clear of iron-inhibiting foods two hours prior to and following your main iron-rich meal or supplement.

how to increase iron absorption

While some foods can inhibit the absorption of iron, some foods and vitamins can enhance our ability to absorb iron. These three factors can help you hold onto the iron in your diet.

VITAMIN C

Foods loaded with vitamin C, like citrus fruits, melons, berries, bell peppers, and dark leafy greens, can help your body absorb the iron in your diet. Studies have found that even just 100 mg of vitamin C added to a meal increased iron absorption by 67%.

VITAMIN A & BETA-CAROTENE

Vitamin A is also an excellent assistant when our bodies need iron. Foods high in beta-carotene, like carrots, sweet potatoes, spinach, and squash, also increase iron absorption, since beta-carotene can be turned into vitamin A in our bodies. One study found that adding beta-carotene to a meal increased iron absorption from certain foods by more than 300%.

BEEF, CHICKEN & FISH

Not only do these meat sources provide heme iron—which is easier to absorb—they also can stimulate better absorption of non-heme iron from plants. Adding these foods to a meal has been found to increase non-heme iron absorption by 2-3 times.

how does the level of iron in each food compare?

Here are two handy tables you can reference to compare foods and their iron levels. The measurements are based on one 3 oz serving of each food type and include their corresponding amounts of iron.

HEME IRON SOURCES PER 3OZ									
RED MEAT		POULTRY		ORGAN MEAT		FISH		SHELLFISH	
TYPE	MG	TYPE	MG	TYPE	MG	TYPE	MG	TYPE	MG
Beef	2.2	Chicken	1.1	Liver	7.6	Tuna	1.4	Shrimp	0.4
Lamb	1.6	Turkey	0.9	Kidney	4.9	Mackerel	1.2	Clams	24
Ham	1.3	Duck	2.3	Heart	9.0	Haddock	0.5	Oysters	4.9
Veal	0.8			Brain	2.0	Perch	1.0	Scallops	0.8
Pork	1.0					Salmon	0.3		
Dried Beef	9.4					Sardines	2.5		

NON-HEME IRON SOURCES PER 3 OZ									
LEAFY GREENS		CRUCIFEROUS		OTHER VEGGIES		FRUIT		SEEDS	
TYPE	MG	TYPE	MG	TYPE	MG	TYPE	MG	TYPE	MG
Spinach	2.3	Broccoli	0.6	Chanterelle Mushrooms	1.9	Olives	0.4	Cooked Quinoa	1.3
Beet Greens	2.2	Brussels Sprouts	1.2	Canned Tomatoes	1.1	Prune Juice	0.6	Chia Seeds	6.6
Swiss Chard	1.53	Green Cabbage	0.5	Agar Seaweed	18.2	Mulberries	1.7	Cashews	5.7
				Red Potatoes	0.6	Dried Apricots	2.3	Lima Beans	2.2
				Palm Hearts	1.4				

iron out the details of your diet

We've all heard that iron is important, but few of us were taught that iron is critical for survival or about how our bodies absorb it. Refer back to this Active Iron resource to help you make better choices for your health and give your body the iron it needs to thrive.

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



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.