

Research shows that relying on non-heme sources of iron gives the human body control over absorption sufficiency, by allowing it to increase uptake to suit its needs³. Therefore, an adequate amount of iron can be readily obtained from a balanced vegan diet.

Iron explained

Iron is a trace element which is needed by the body for the formation of blood. The human body normally contains 3-4g of iron, more than half of which is in the form of haemoglobin, the red pigment in blood. Haemoglobin transports oxygen from the lungs to the tissues. Iron is a constituent of a number of enzymes. The muscle protein myoglobin contains iron, as does the liver - an important source during the first six months of life. The body's iron balance varies mainly according to dietary intake, as losses from the body are generally small - although loss of iron occurs during menstruation.

Iron Requirements

The UK's Department of Health recommends the following Reference Nutrient Intakes (RNI) for iron:

Type of Person	Amounts Required (mg/day)
Infants from 0-3 months	1.7
Rising at 12 months	7.8
Children	6.1-8.7
Teenagers	11.3-14.8
Non-menstruating adults	8.7
Menstruating adults	14.8

The US Recommended Dietary Allowances are similar at 10mg a day for non-menstruating adults; 15mg for adolescents and menstruating adults, and an additional 15mg a day for those who are pregnant.

General guidelines, issued by The Vegan Society. If you have any health problem which you feel may be connected to diet, your doctor should refer you to a qualified expert such as a Registered Dietitian. Prepared: 2015/06 TH. Last reviewed: 2015/06/24 ACB & LMB. Next review: 2018/06.

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Sources of Iron

Good plant sources of iron include dried fruits, whole grains (including wholemeal bread), nuts, green leafy vegetables, seeds and pulses. Other foods rich in iron but which are usually eaten in smaller amounts include soya flour, parsley, watercress, black molasses and edible seaweeds. The use of ironware when cooking foods also contributes to dietary intake.

Examples of amounts of foods providing 2mg iron

Type of food	Quantity (g)
Pistachios	14
Cashews (roasted)	32
Whole lentils	57
Chick peas (boiled)	95
Wholemeal bread	74
Sesame seeds or tahini	19
Black molasses	22
Apricots (dried)	59

Absorption

The percentage of non-heme iron absorbed from plant food varies based upon a host of factors such as the body's needs, food preparation methods, and on the food and beverage combinations eaten. Although iron (and zinc) deficiencies are associated with marginal plant based diets of impoverished people in some parts of the world, it isn't an issue of concern in regions where the food supply and variety are sufficient. In fact, research has shown that vegans have average iron intakes that are similar to or higher than those of non-vegans and higher than the recommended daily allowance³.

Absorption from iron-rich plant-foods increases significantly when foods high in vitamin C (such as red bell peppers or strawberries) are eaten at the same time because iron is converted to a more readily absorbed form. Likewise, the citric acid in citric fruits also aids absorption. Soaking, fermenting, yeasting, and sprouting plant foods increases the body's absorption of iron and other valuable minerals as well.

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Special Issues

Iron absorption can also be reduced by tannins (e.g. in tea) and phytates (found in nuts, grain and seeds). However, research has shown that despite these issues, iron deficiency in vegans is no more common than in the rest of the population. There has been some concern that fibre in food can also inhibit the absorption of iron however, more research is needed to confirm these claims.

Iron, Vegans and the General Population

Iron deficiency is believed to be the most common nutritional deficiency worldwide. In fact, the World Health Organisation estimates that approximately 25% of the global population has anaemia, mainly due to iron deficiency¹. Symptoms of iron deficiency anaemia include tiredness and breathlessness especially on physical exertion, giddiness, palpitations, headache and poor concentration². Studies of British vegans have reported an average intake of approximately double the recommended Reference Nutrient Intakes. At this level of iron consumption, any possible inhibitory effects of fibre and phytate on absorption are unlikely to be important. As vegan diets contain about three to four times the British and US recommendations for vitamin C, absorption of iron is enhanced.

Conclusion

Vegans have a high dietary iron intake and although iron from plant sources is less well absorbed than that from meat, high levels of vitamin C in the diet enhances iron absorption. Studies show that the iron status of vegans is usually normal, and iron deficiency is no more common than in the general population.

References

1. WHO Global Database on Anaemia. Worldwide Prevalence of Anaemia 1993-2005. Geneva, Switzerland: World Health Organisation;2008.
2. Mangels R, Messina V, Messina M [2011]. The dietitian's guide to vegetarian diets: issues and applications. 3rd ed. Sudbury, MA: Jones and Bartlett Learning.
3. Davis, B, Vesanto, M, [2014] Becoming Vegan: Comprehensive Edition, Summertown, TN, The Book Publishing Company.

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