

IRON

Iron is essential for all forms of aerobic life. Haemoglobin transports iron in the blood, which is necessary for respiration. At cellular level, it is the backbone for providing oxygen and the creating of energy in the mitochondria. Iron is needed in the forming of carnitine, which is necessary for the oxidation of free fatty acids. It is needed in the forming of elastin and collagen, main components of connective tissue, maintenance of the immune system, production and regulation of different brain neural processes. It fulfils a function in the prevention of cellular oxidation

Resistance against infections depends on the function of the white blood cells, in particular the lymphocytes and neutrophils. The reduced activity of Ribonucleotide reductase, an enzyme needed for forming DNA, can, in the case of iron deficiencies, lead to reduced T-cell numbers. The neutrophils kill bacteria through free radicals, derived from oxygen. Certain proteins form it, but which need oxygen to do it. Candida and herpes simplex infections are more common with people having iron deficiencies.

More than 50% of all pre-menopausal women and 30% of all children in Southern Africa experiences iron deficiencies. Worldwide more than one billion people suffer from it. Runners and endurance athletes experience the same deficiencies, because of their activities. Iron supplementation is essential for most people as a result of their daily choice of foods, which have an iron deficiency. The typical western diet contains 6mg iron per 1000 Kcal. People on a calorie poor diet need extra iron. Our dependency on refined foods creates iron deficiencies. By cutting cholesterol and fat from the diet, by avoiding red meat, people are avoiding the best source of iron. For example, 85g red meat supplies 7.5mg iron. The source from where GNLD finds its iron is a mixture of chelated iron glycinate and a mixture of molasses, a natural source of organic iron. Each tablet contains 25mg iron. Two Formula IV Food Supplement tablets contain 4mg and the Multi-mineral and Alfalfa tablet 9 mg of iron. Our daily intake ought to contain 10-18 mg per day for adults, pregnant and lactating mothers. The simultaneous intake of calcium with iron could limit the absorption of iron. Iron absorbs best in an acidic environment. For this reason Vit. C, taken simultaneously, increases the absorption. The best time to take iron would be between meals when the acid in the stomach is undiluted.

Symptoms of an iron deficiency:

Iron deficiency can happen with or without being anaemic (lit: without blood). There are fewer red blood cells in the blood. Anaemia is not an illness, but an indicator of the presence of an illness. Fatigue, paleness, difficulty of breathing, etc. are visible symptoms. The lack of stamina, behavioural problems as poor concentration and mental capabilities, decreased muscle tonus and low immunity are due to an iron deficiency. The oxygen carrying capacity of the blood decreases and less oxygen is supplied to the muscles.

A full blood count, including haemoglobin and haematocrit readings, will determine whether you are anaemic. Someone low on iron will have a low serum iron count and a normal or increased serum transferrin when taking a haematocrit.

MANY WOMEN, TODDLERS IRON DEFICIENT

Mar 25, 1997

NEW YORK (Reuters) -- The first national survey of blood iron levels in 20 years finds nearly 1 out of 10 women and small children suffering from iron deficiency.

"Iron deficiency and iron deficiency anaemia are still relatively common in the United States among women of childbearing age... (and) also remain quite common among toddlers," according to researchers at the National Centre for Health Statistics, a branch of the Centres for Disease Control and Prevention (CDC) in Hyattsville, Maryland.

Around 10% of adolescent girls and women of childbearing age are iron deficient, based on a nation-wide survey of the blood iron levels of nearly 25,000 people.

According to the CDC, 2% to 5% of adolescent girls and premenopausal women have iron levels low enough to induce anaemia. The study also found that 9% of 1- to 2-year-olds lack sufficient iron, with 3% of toddlers anaemic.

"These prevalences correspond to approximately 700,000 toddlers and 7.8 million women with iron deficiency; of these, approximately 240,000 toddlers and 3.3 million women have iron deficiency anaemia," they say.

Toddlers may have more restricted diets than older children, experts believe, leaving them more prone to iron deficiency. The blood loss involved in menstrual flow can leave pre-menopausal women more vulnerable to the condition as well.

Just 1% to 2% of adolescent boys, adult males, and postmenopausal women report iron deficiency anaemia, the CDC say.

Iron deficiency, or its more dangerous counterpart, anaemia (a lack of iron leading to low levels of blood haemoglobin), can impair the immune response, bring on lethargy, and hamper work performance. The condition can cause slow mental development in young children.

The CDC say the problem first came under public scrutiny in the 1960s, when various studies revealed that between 8% to 64% of the American public were anaemic. They say these "intensified efforts to combat iron deficiency." One initiative, the iron-fortification of certain foods, may be the primary reason the condition is now less common, they say. However, among women and small children, lack of iron "remains a relatively prevalent nutritional condition." In addition, the study finds the condition striking in poor and minority women and children, who have up to double the rates of iron deficiency found in affluent whites.

Among women, iron deficiency and anaemia affects "especially those who are black or Mexican American, poor, and have 12 or fewer years of education, or four or more children," write the researchers.

The CDC is investigating the use of routine national screening for iron deficiency. Although screening across the population may not be feasible, they say "some form of screening may still be useful in young children and females of childbearing age." The National Academy of Sciences has already advised similar measures, and the CDC will issue their own recommendations on national screening soon.

SOURCE: The Journal of the American Medical Association. 1997; 277(12): 973-976.

LOW IRON INCREASES MORTALITY

Jan 28, 1997

NEW YORK (Reuters) -- Low blood levels of iron are linked to an increased likelihood of death in the elderly population, a study shows.

Unlike previous findings in middle-aged men in Finland, the new study found no link between high levels of iron and an increased risk of heart attack. On the contrary, low blood levels of iron in this report were tied to a significantly greater chance of cardiac death, and an overall increase in the risk of dying.

The Finnish study gained much publicity in 1992, with media reports giving the impression that "iron might be causing all sorts of bad things to go on," said Dr. Jack M. Guralnik, chief of the epidemiology and demography office at the National Institute on Ageing (NIA), Bethesda, Maryland, which conducted the new study.

The NIA investigation focused on nearly 4,000 men and women, ages 71 years and older. Guralnik says this allowed the researchers to study a much broader range of iron levels than were included in the Finnish study. "So we had a lot of people at risk along the whole spectrum of iron," he said. "And in fact, we saw pretty much opposite the results of the Finnish study. Low iron seemed to confer a high risk of both total and coronary heart disease mortality (deaths). And in the upper ranges of iron, people were at lower risk."

More specifically, the five-year study found that men with the highest iron levels had only 20% the risk of dying of coronary artery disease compared with men in the lowest iron category. In addition, women with the highest iron levels were about half as likely to die of heart disease compared with those in the lowest iron category.

In looking at death from all causes, the NIA team found that men with higher iron were at 38% less risk, and high-iron women were at 28% less risk compared with people in the low-iron categories.

Guralnik noted, however, that the study "doesn't totally exclude the idea that very high iron could put you at some increased risk. But in the general older population, we saw a clear trend in the direction where the higher the iron, the lower the risk."

However, the researcher cautioned that the challenge is interpreting the new findings. He explained that blood levels of iron are involved in many processes in the body.

"Iron level is affected by many things, nutrition being only one of them, and the general burden of disease -- how ill a person is -- is another very important one. People who have multiple chronic diseases can be anaemic and have low serum iron even in the face of normal intake of iron from the diet," Guralnik said.

Therefore, iron levels may be a good "barometer" of disease burden. "And anything that's a good barometer of disease burden is a predictor of mortality -- the greater that burden, the greater the mortality," he said. "And so, to say that simply taking more iron will prevent these outcomes is too simplistic," he added.

The new findings have implications for doctors treating elderly people. "One message that is pretty clear is that physicians should not just write off low iron as something that happens to older people. And it's also clearly not the case that you're at less risk for heart disease if you have low iron," concluded the researcher.

SOURCE: American Journal of Cardiology (1997;79;120-127)

FDA ORDERS LABELING ON DRUGS, VITAMINS WITH IRON

Jan 22, 1997

WASHINGTON (Reuters) - Drugs and dietary supplements containing iron must have a warning label to protect children from accidental poisoning, the Food and Drug Administration said Wednesday.

In addition, the new FDA rules require any product containing 30 mg or more iron per unit must be packaged as individual doses, such as in a blister pack, that will limit the number of pills or capsules a small child could consume.

Despite child resistant packaging, accidental iron overdose is a leading cause of poisoning in children under six. Thirty-five children have died since 1986 and there have been more than 110,000 incidents of iron poisoning.

"Parents, care-givers and grandparents the children may visit need to know that iron-containing products can be toxic in large doses, and even fatal, if swallowed by a small child," Food and Drug Commissioner Dr. David Kessler said.

Many prenatal iron products contain more than 30 mg, and those dietary supplements are often found in households with young children.