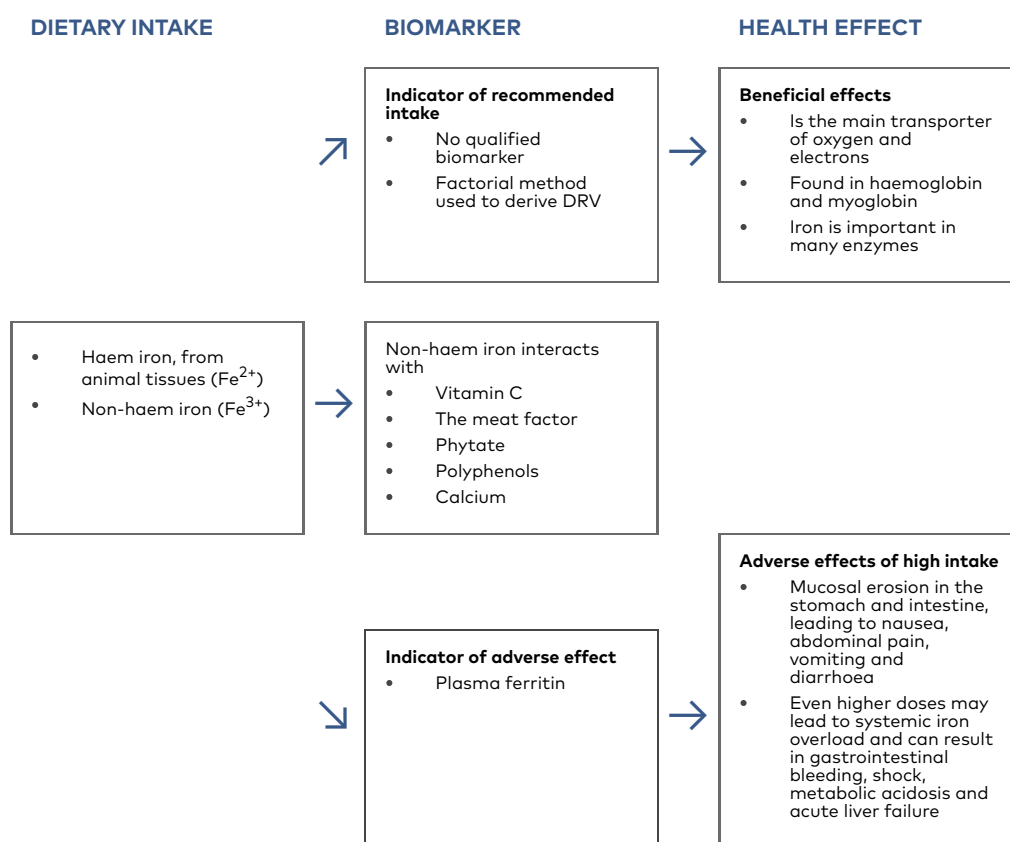


Iron



	Females	Males
AR (mg/d)	9	7
RI (mg/d)	15	9

Magnus Domellöf and Agneta Sjöberg have co-authored this summary. For more detailed information on the background, evidence and calculations behind these recommendations, please see the NNR2023 paper on iron (Domellöf & Sjöberg, 2023).

Dietary sources and intake. Meat, poultry, and fish as well as bread and cereals are the main iron sources in a mixed Nordic diet. Legumes, legume-based meat substitutes, wholegrain cereals and dark green vegetables are also important iron sources. Dietary iron consists of haem (from animal tissues) and non-haem iron. Mean average dietary intake in the Nordic and

Baltic countries ranges between 9.4 mg and 14.5 mg in adults (Lemming & Pitsi, 2022).

Main functions. Iron is essential for oxygen transport (e.g. haemoglobin, myoglobin) and for many enzymes involved in energy metabolism and other functions in different tissues, including the brain (Domellöf & Sjöberg, 2023).

Iron absorption and homeostasis . Iron absorption from foods is generally lower than that of most other nutrients, typically around 10–15% from a mixed diet. Haem iron is generally more efficiently absorbed than non-haem iron and generally not affected by other food components. Absorption of non-haem iron is enhanced by ascorbic acid and muscle tissue (meat/poultry/fish) and inhibited by phytate, polyphenols and calcium. Iron absorption is homeostatically regulated, i.e., upregulated when iron stores are low and downregulated when iron stores are high. Iron is recycled in the body and humans have no pathway for excretion of surplus iron.

Main data gaps. Health effects of different iron intakes in different risk groups. How to minimize the risk of iron deficiency in populations shifting to vegetarian diets.

Indicators for recommended intake. Serum ferritin and other iron status biomarkers can be used in combination with haemoglobin to assess iron status in individuals and populations.

Deficiency and risk groups. Iron deficiency is one of the most common micronutrient deficiencies globally and is the most common cause of nutritional anaemia. Large population groups in the Nordic and Baltic countries are at risk of iron deficiency, including infants, young children, menstruating females, pregnant women as well as vegetarians.

Dietary reference values. DRVs were set based on factorial calculations (Domellöf and Sjöberg 2023) considering the following factors: 1) iron losses, 2) iron absorption and 3) iron requirements for growth (in children and pregnant women). Basal iron losses were assumed to be 12–22 µg/kg/day in the different population groups. Average menstrual blood losses were assumed to be 0.45 mg/day. Dietary iron bioavailability of 10% was assumed for children up to 11 years, and 15% for other population groups. Iron requirements for growth in children in the different age intervals were based on average weight gain and a total body iron content of 38–48 mg/kg. Additional iron requirements for pregnancy was assumed to be 1.91 mg/day. RI is based on the 97.5th percentile of variation of the main contributing factor. A CV of 15% was used in the absence of variability data. For menstruating females, the RI is based on the 95th percentile of menstrual loss. UL is 60 mg/d.