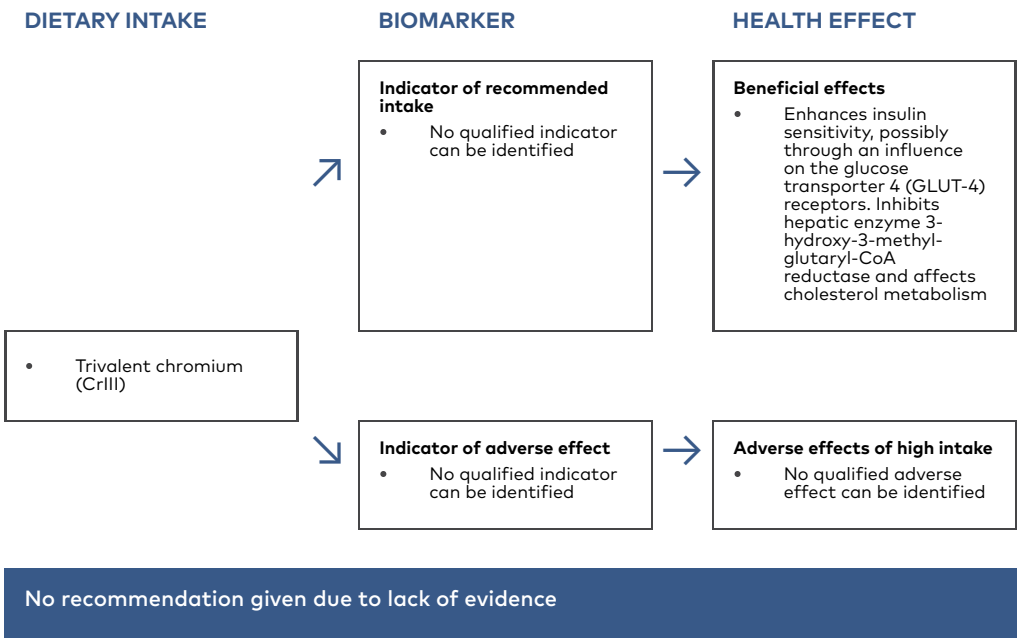
Chromium



No recommendation given due to lack of evidence

For more information about the health effects, please refer to the background paper by Christine Henriksen and Susanne Bügel (Henriksen & Bügel, 2023).

Dietary sources and intake. Trivalent chromium (CrIII) is the principal form of chromium which is ubiquitous in nature and exists in the air, water, soil, and biological materials. CrIII is found in foods and dietary supplements. EFSA has estimated the intake to be between 57 and 84 µg/day. No intake data on chromium is available from Nordic and Baltic dietary surveys (Lemming & Pitsi, 2022).

Interaction with other nutrients. Simultaneous ascorbate administration increases chromium uptake in humans and animals, and chromium absorption is also higher in zinc- and iron-deficient animals.

Main functions. About 0.5% of the dietary intake of chromium is absorbed by the body via passive diffusion, and the remainder is excreted in the faeces. The exact biological function of chromium has not yet been determined (Henriksen & Bügel, 2023). CrIII is considered to enhance insulin sensitivity, possibly through an influence on the glucose transporter 4 receptors. Chromium

inhibits the cholesterol biosynthesis enzyme HMG-CoA reductase and thereby affects cholesterol metabolism.

Data gaps. Biomarkers for evaluating chromium status should be explored in balance studies, where a given amount of chromium is given. Furthermore, long-term effects of increased chromium intake in physiological dosages need to be assessed by clinical trials.

Indicator for recommended intake. There are no reliable biomarkers for chromium status.

Deficiency and risk groups. The essentiality of chromium is disputed, as no deficiencies have been documented in healthy humans. Toxicity of chromium is generally low and only achieved at very high doses.

Dietary reference values. There is no evidence of beneficial effects associated with increased chromium intake in healthy subjects (Henriksen & Bügel, 2023). This is also in line with EFSA's review of the topic (EFSA, 2014e). Not sufficient data to derive UL.