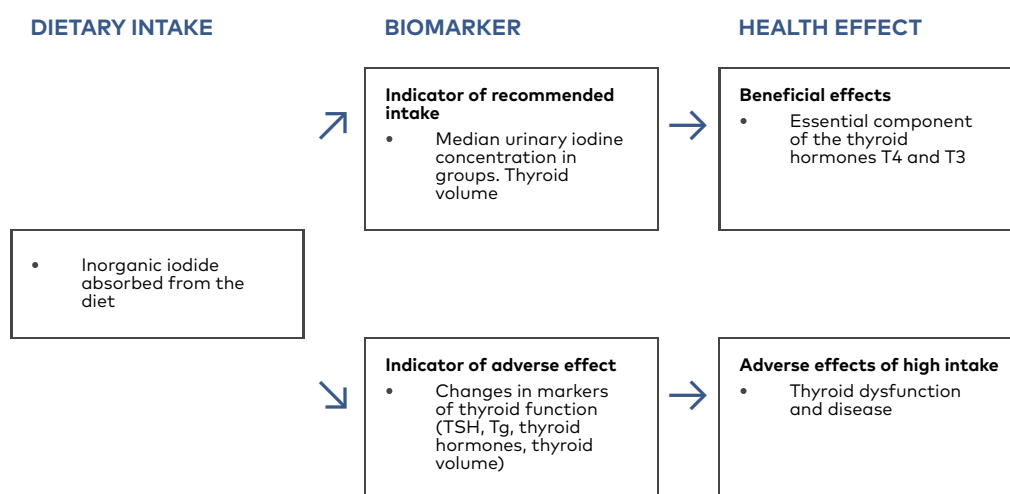


## Iodine



	Females	Males
Provisional AR (µg/d)	120	120
AI (µg/d)	150	150

For more information about the health effects, please refer to the background paper by Ingibjörg Gunnarsdóttir and Anne Lise Brantsæter (Gunnarsdóttir & Brantsæter, 2023).

**Dietary sources and intake.** Lean fish is a rich source of iodine. The main sources of iodine in the Nordic and Baltic countries include dairy products, excluding cheese (differences may occur between countries), saltwater fish, eggs, iodized table salt and products containing iodized salt, such as bread (Gunnarsdóttir & Brantsæter, 2023). The average iodine intake ranges from 30 to 270 µg/d (Lemming & Pitsi, 2022).

**Main functions.** Iodine is an essential component of the thyroid hormones thyroxine (T4, a pro-hormone) and triiodothyronine (T3, the active hormone), which are involved in metabolic regulation throughout life. During the foetal stage, infancy and childhood, these hormones are crucial for growth and numerous processes of neural and cognitive development, e.g., myelination, neural migration and differentiation, and gene expression.

**Indicator for recommended intake.** There is no good indicator for adequate iodine intake at the individual level. Median urinary iodine concentration (UIC) is a valid marker of iodine intake at the group level (Gunnarsdóttir & Brantsæter, 2023).

**Main data gaps.** There is a need to re-evaluate the risk of iodine intakes above the current UL of 200 µg/day for 1 to 2-year-old children versus the benefit of implementing universal salt iodization to increase iodine intake in women of childbearing age. More nationally representative data on iodine status in infants, toddlers and breastfeeding women are warranted.

**Deficiency or risk groups.** Risk groups for iodine deficiency in the Nordic and Baltic countries include people with low or no intake of milk/milk products and fish (depends on the iodine content in fish) in countries with no fortification of e.g., bread and/or very low levels of iodine in salt. Children at particular risk of iodine deficiency include breastfed and weaning infants in countries with no or voluntary salt iodization or fed by mothers on a restrictive diet. Seaweed consumers may have a risk of excess intake. People with restriction of animal products in their diets, such as vegetarians and vegans, are at risk of becoming iodine deficient unless consuming supplements or fortified foods. . Both deficiency and excessive intake may cause thyroid dysfunction and disease, in addition to decreased fertility, adverse pregnancy and birth outcomes, and impaired neurocognitive development in children. Thyroid enlargement is the most recognizable consequence (Gunnardsottir & Brantsæter 2023).

**Dietary reference values.** Based on a recent balance study in infants and subsequent review-paper of iodine nutrition in lactating women and infants, the AI for infants has been adjusted to 80–90 µg/day for infants through 11 months (Gunnarsdóttir & Brantsæter, 2023). For adults, an AI is set from the AI set by EFSA (2014b), which is based on urinary iodine excretion to minimise thyroid volume enlargement. AI for adults is set to 150 µg/day (females and males). Based on the AI (EFSA, 2014b), provisional AR for adults is set to 120 µg/day (females and males). UL of iodine is 600 µg/day.