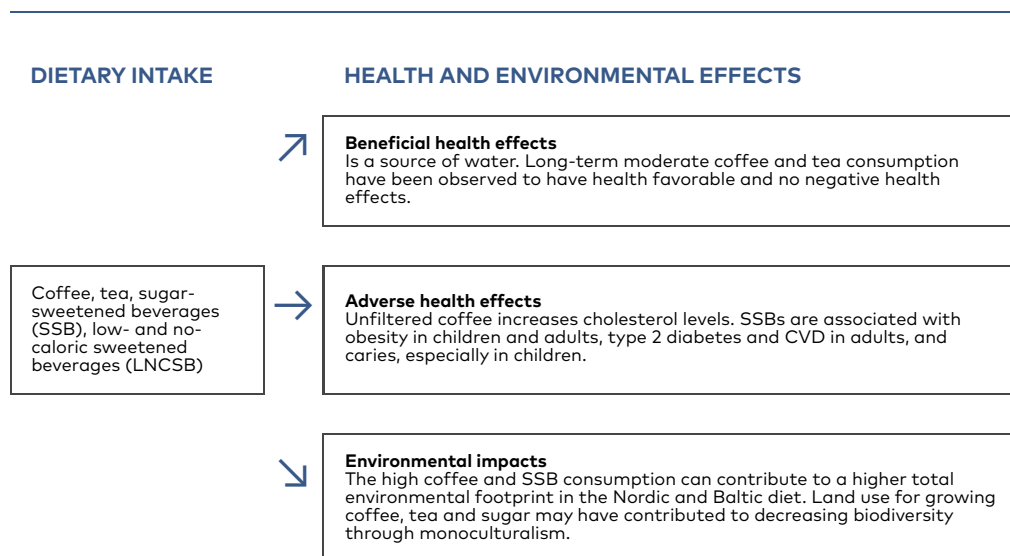


Beverages



Science advice: Moderate consumption of filtered coffee (about 1-4 cups/day) and tea may be part of a healthy diet. The total consumption of caffeine from all sources should be limited to 400 mg caffeine/day. For children, a safe level of caffeine intake is 3 mg per kg body weight per day. Consumption of unfiltered coffee and SSB should be limited. High-quality tap water should be the preferred choice of beverage.

For more information about the health effects, please refer to the background paper by Emily Sonestedt and Marko Lukic (Sonestedt & Lukic, 2023). For more information about the environmental impacts, please refer to the following background papers (Benton et al., 2024; Harwatt et al., 2024; Meltzer et al., 2024; Trolle et al., 2024).

Dietary intake. The average intake of coffee is about 250–700 ml/day, the intake of tea is about 40–240 ml/day and the intake of soft drinks is about 40–280 ml/day (Lemming & Pitsi, 2022). The added sugars in sugar-sweetened beverages (SSB) account for 1–7 E% in the Nordic and Baltic countries. Among the groups with very high intake of added sugars (i.e., the 95th percentile), the added sugar in SSB contribute with up to 24 E% (EFSA, 2022).

Health effects. Seven qSRs are available on the role of SSB, LNCSB, tea, and coffee and health outcomes (EFSA, 2022; Mayer-Davis et al., 2020a; Rios-Leyvraz & Montez, 2022; Rousham et al., 2022; SACN, 2015; Sonestedt et al., 2012; WCRF/AICR, 2018g). For cancer outcomes, there is strong evidence from observational studies that consuming coffee probably decreases the risk of liver cancer and endometrial cancer (WCRF/AICR, 2018g). SSB consumption is associated with obesity and dental caries, especially in children, and has also been associated with increased risk of type 2 diabetes, hypertension, and cardiovascular disease and cardiovascular mortality, possibly mediated by energy intake (EFSA, 2022; Mayer-Davis et al., 2020a; SACN, 2015; Sonestedt et al., 2012).

As discussed in Sonestedt and Lukic (Sonestedt & Lukic, 2023), moderate consumption of coffee (about 1-4 cups/day) may also reduce the risk of cardiovascular diseases and type 2 diabetes. Negative health effects of high intake of coffee, tea, and SSB may be mediated through their ingredients, such as caffeine, added and free sugars or other sweeteners. Unfiltered (such as boiled or French press) coffee increases LDL-cholesterol concentrations in plasma (Sonestedt & Lukic, 2023). High caffeine intake in pregnancy is associated with higher risk of pregnancy loss, pre-term birth, and low birth weight. Replacing SSB with LNCSB may result in a small weight reduction, likely through reduced total energy intake (Hjelmsæth & Sjöberg, 2022; Rios-Leyvraz & Montez, 2022; Sonestedt & Lukic, 2023).

Health effects of artificial sweeteners are not considered in NNR2023, as this is assessed by national food safety authorities.

Environmental impacts. The high consumption of coffee contributes to the total environmental impacts in the Nordic and Baltic diet and consumption should therefore be limited. For environmental reasons tap water should be the preferred choice before SSB, LNCSB and bottled water. Land for growing coffee, tea, and sugar may contribute to decreasing biodiversity and land use in species rich areas (Ahlgren et al., 2022; Trolle et al., 2024).

Main data gaps. Further research on the health effects and safe intake levels are needed. Further research is needed on the effect of intake of coffee and other drinks in various risk groups.

Risk groups. Children and pregnant women are more sensitive to high caffeine intakes. High consumption of caffeinated "energy drinks" may cause multiple adverse health consequences for children and adolescents due to the caffeine and sugar content.

Science advice:

- **Based on health outcomes:** A moderate intake of coffee probably reduces the risk of some cancers and may be part of a healthy diet. Consumption from 0 to a maximum of 400 mg/d of caffeine is considered a safe level for adults. The caffeine concentration in tea is generally lower than in coffee but varies from highest content in black tea to the lowest in herbal tea, with green tea in between. Many energy drinks contain high amounts of caffeine. Some SSB and LNCSB may also contribute significantly to the total caffeine intake. Consumption of energy drinks, boiled/unfiltered coffee, and SSB should be limited. EFSA considers that single doses of caffeine up to 200 mg and total intake up to 400 mg per day from all sources do not raise safety concerns for the general healthy adult population. For children, the current recommendation for a safe level of caffeine intake is 3 mg per kg body weight per day. For pregnant and lactating women, the recommendation for total caffeine intake is set to maximum 200 mg per day. SSB consumption should be reduced due to the evidence for causal effects on obesity and dental caries, especially in children, CVD and type 2 diabetes.
- **Based on environmental impacts:** The high coffee consumption can contribute to a higher total environmental impacts in the Nordic and Baltic diet and consumption should therefore be limited. High-quality tap water should be the preferred choice before SSB, LNCSB and bottled water.
- **Overall science advice:** Moderate consumption of filtered coffee (about 1–4 cups/day) and tea may be part of a healthy diet. The total consumption of caffeine from all sources should be limited to 400 mg caffeine/day. For children, a safe level of caffeine intake is 3 mg per kg body weight per day. Consumption of unfiltered coffee and SSB should be limited. High-quality tap water should be the preferred choice of beverage.