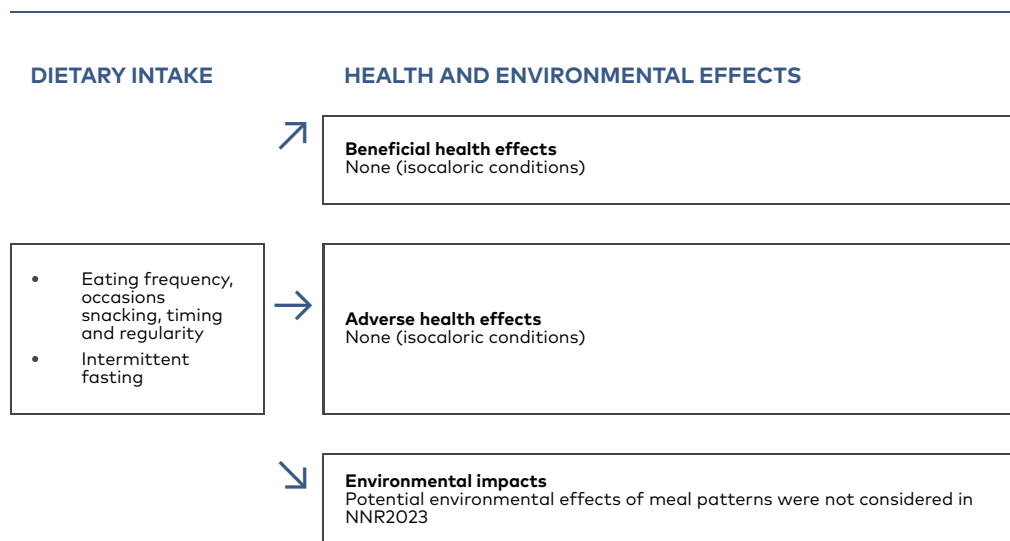


Meal patterns



Science advice: There is not enough evidence to set dietary guidelines on meal patterns based on health effects, based on studies of isocaloric intake. Meal patterns may vary within the context of an energy balanced and nutritionally adequate diet.

For more information about the health effects, please refer to the background paper by Mette Svendsen and Heléne Bertéus Forslund (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).

Food and nutrient intake. Studies considered investigated eating frequency, occasions of eating, snacking, timing and regularity of food consumption under isocaloric conditions.

Health effects. Three qSRs are available on the role of eating frequency and health outcomes (Heymsfield et al., 2020a, b, c). Due to a limited amount of data, no conclusions could be drawn regarding the risk of overweight and obesity, cardiovascular disease, or type 2 diabetes.

As discussed by Svendsen and Forslund, the evidence is also limited regarding health effects of breakfast skipping, meal timing and intermittent fasting. In the context of weight reduction, the effects of intermittent fasting are generally equal to those of continuous energy restriction Svendesen & Forslund, 2023.

Given the overall low to critically low quality of the reviews, the evidence is too limited and inconclusive to set recommendations for meal patterns (Svendsen & Forslund, 2023).

Environmental impacts. NNR2023 did not evaluate the potential environmental impact of different meal patterns.

Main data gaps. There is a lack of good quality long term studies on health effects of meal patterns.

Risk groups. No risk groups for adverse effects were identified in Svendsen & Forslund (2023) but some population groups are more vulnerable to inadequate energy and/or nutrient intake and more dependent on meal regularity. For example, frail older adults and young and growing children, may have to eat more frequently than the general population as they may otherwise be unable to eat adequately sized portions of food to cover energy and nutrient needs.

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