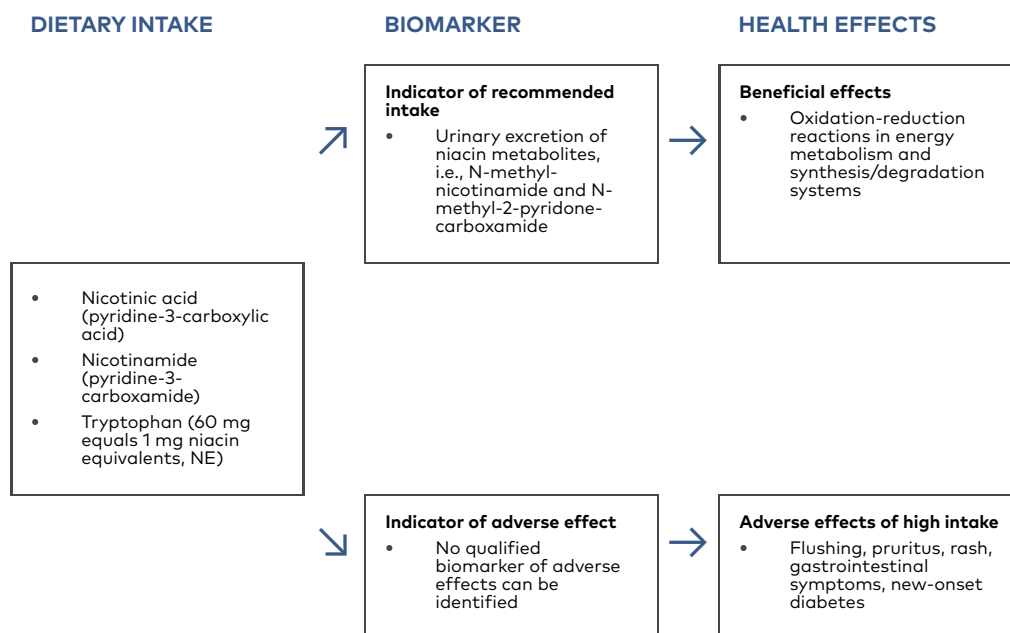


Niacin (vitamin B₃)



	Females	Males
AR (NE/d)	12	15
RI (NE/d)	14	18

For more information about the health effects, please refer to the background paper by Riitta Freese and Vegard Lysne (Freese & Lysne, 2023).

Dietary sources and intake. Niacin (vitamin B₃) is the common term for nicotinic acid (pyridine-3-carboxylic acid), nicotinamide (pyridine-3-carboxamide) and derivatives that exhibit the biological activity of nicotinamide (EFSA, 2014g; Freese & Lysne, 2023; IOM, 1998b). The main sources in Nordic and Baltic countries are meat, eggs, fish, dairy, legumes (including peanuts), and cereals. Protein-rich foods contribute to the niacin intake through endogenous conversion from tryptophan, and 60 mg tryptophan is equivalent to 1 mg NE (Freese & Lysne, 2023). The average niacin intake ranges from 12.7 to 41 NE/d (Lemming & Pitsi, 2022).

Main functions. Oxidation-reduction reactions in energy metabolism and various synthesis/degradation systems, DNA repair, transcriptional regulation, circadian rhythms, mitochondrial homeostasis and calcium signalling (EFSA, 2014g; Freese & Lysne, 2023; IOM, 1998b).

Indicator for recommended intake. The relationship between intake and urinary excretion of nicotinamide metabolites (EFSA, 2014g; Freese & Lysne, 2023; IOM, 1998b).

Main data gaps. Dose-response of niacin intake and health outcomes.

Deficiency and risk groups. The classical niacin deficiency disease is pellagra characterized with diarrhoea, photosensitive dermatitis, dementia, and, if not treated, death. Pellagra is mainly observed in populations consuming predominantly a maize-based diet or a diet with other cereals with low protein content and low bioavailability of niacin (Freese & Lysne, 2023).

Dietary reference values. Based on urinary excretion of niacin metabolites the AR is set to 1.3 NE/MJ for females and males. Assuming a BMI of 23 kg/m² and PAL 1.6, this corresponds to AR of 12 NE/day (in females) and 15 NE/day (in males). RI is set to 1.6 NE/MJ (corresponding to 14 NE/day (females) and 18 NE/day (males)). The UL for nicotinamide and nicotinic acid is 900 and 10 mg/day, respectively.