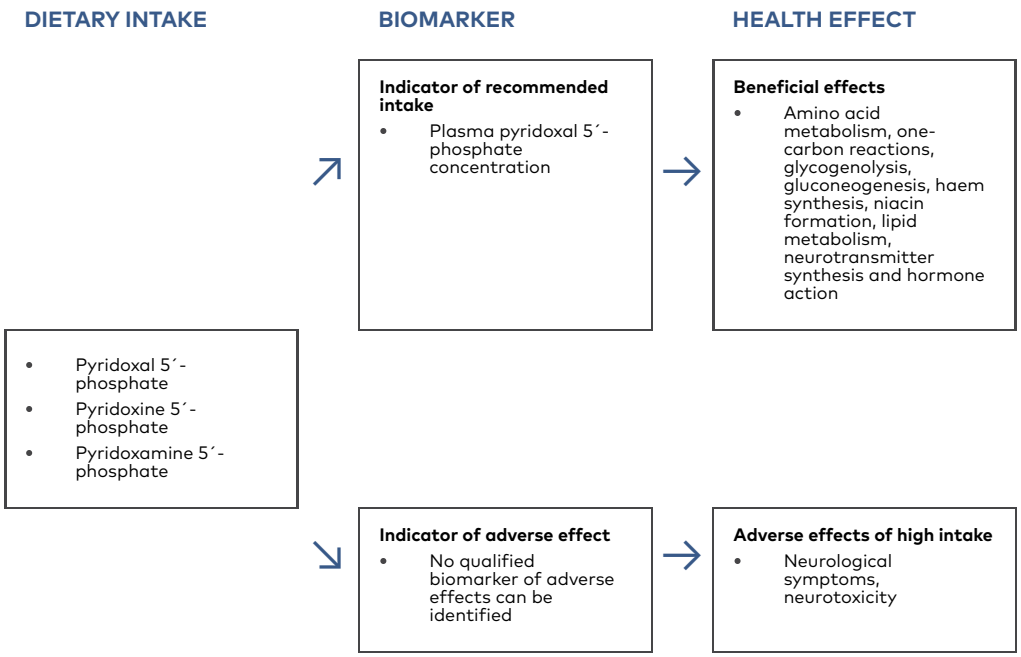
Vitamin B_6



	Females	Males
AR (mg/d)	1.3	1.5
RI (mg/d)	1.6	1.8

For more information about the health effects, please refer to the background paper by Anne-Lise Bjørke Monsen and Per Magne Ueland (Bjørke-Monsen & Ueland, 2023b).

Dietary sources and intake. Pyridoxal 5´-phosphate (PLP) is the main form of vitamin B_6 in animal tissue. Major sources of vitamin B_6 in the Nordic and Baltic diets are fish, meat, potatoes, bread, cereals, milk, and dairy products. The bioavailability of vitamin B_6 in animal foods is considered to be approximately 50%, whereas the bioavailability in plant-based foods varies from 0 to 80% (Bjørke-Monsen & Ueland, 2023b). The average vitamin B_6 intake ranges from 1.2 to 2.3 mg/d (Lemming & Pitsi, 2022).

Main functions. PLP functions as a coenzyme for more than 160 different enzymatic reactions in the metabolism of amino acids, one-carbon reactions, glycogenolysis and gluconeogenesis, haem synthesis, niacin formation, and also in lipid metabolism, neurotransmitter synthesis and hormone action (Bjørke-Monsen & Ueland, 2023b; EFSA, 2016a; IOM, 1998b).

Indicator for recommended intake. Plasma PLP concentration reflects the tissue stores of vitamin B_6 (biomarker of status) and has a defined cut-off value for an adequate vitamin B_6 status (Bjørke-Monsen & Ueland, 2023b; EFSA, 2016a; IOM, 1998b).

Main data gaps. There are limitations in biomarkers of vitamin B_6 intake and status, and information on the variability in the requirement is absent (EFSA, 2016a).

Deficiency and risk groups. Prolonged vitamin B_6 deficiency, which is uncommon, is reported to cause peripheral neuropathy that leads to weakness, decreased reflexes, sensory loss, and ataxia, particularly in the lower limbs. Seizures, migraine, cognitive decline, and depression have also been linked to vitamin B_6 deficiency (Bjørke-Monsen & Ueland, 2023b). Mean plasma values below 30 nmol/l are associated with perturbations of amino acid, lipid, and organic acid profiles in plasma (EFSA, 2016a).

Dietary reference values. Plasma PLP concentration is considered as the biomarker of status; it has a defined cut-off value for an adequate vitamin B_6 status (30 nmol/l). AR is set to 1.3 mg/day in females based on balance studies, this was extrapolated to 1.5 mg/day in males (see Appendix 5). RI is set to 1.6 mg/day in females and 1.8 mg/day in males. UL is defined as 12.5 mg/d for both males and females (EFSA, 2023a).