



| Vitamin B3 - Niacin | |
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| Description | Niacin is water soluble and is part of the B-vitamin group. Vitamin B3 comes in two common forms: Nicotinamide and Nicotinic Acid |
| Function | A water soluble vitamin vital for energy release in tissues and cells. It helps form NAD (nicotinamide adenine dinucleotide) and NADP (nicotinamide adenine dinucleotide phosphate), coenzymes which are involved in the release of energy and food. They help to maintain a healthy nervous and digestive system. Essential for normal growth and for healthy skin. |
| Human Requirements | Niacin requirements depend on energy intake; values are therefore given as mg/1000 kcal and also as total values based on estimated average energy requirements for the majority of people in the UK ¹ EU RDA: 18mg (nicotinamide) |
| Dietary Intake | In the UK, the average adult diet provides (niacin equivalents): for men, 44.7 mg daily; for women, 30.9 mg ¹ . |
| Food Sources | Meat, oily fish, poultry, bread, potatoes, breakfast cereals, and can be synthesised from tryptophan (an essential amino acid). |
| Deficiency Symptoms | Niacin deficiency (rare in the UK) may lead to pellagra. Early signs of deficiency are vague and non-specific and may include loss of appetite, headache, nausea, fatigue, mouth ulcers, dry skin, difficulty in sleeping, poor memory, irritability. The severe deficiency state of pellagra is characterised by dermatitis (predominantly in the areas of skin exposed to sunlight), dementia (associated with confusion, disorientation, seizures and hallucinations) and diarrhoea. |
| Precautions / Contra-Indications | Large doses of niacin are best avoided in gout (may increase uric acid levels); peptic ulcer (large doses may activate an ulcer); and liver disease (large doses cause deterioration). Large doses should also be used with caution in diabetes mellitus. Safe Upper Level: 500mg ² (nicotinamide) / 17mg ² (nicotinic acid) |
| Pregnancy & Breastfeeding | Vitamin B3 is suitable to be taken during pregnancy and breastfeeding |
| Adverse Effects | Doses of over 150mg of the nicotinic acid form may cause temporary flushing of the skin in some people. |
| Interactions¹ | Adequate amounts of all B vitamins are required for optimal functioning; deficiency or excess of one B vitamin may lead to abnormalities in the metabolism of another. |
| References | 1. Mason, P. Dietary Supplements. Pharmaceutical Press, London, 2001. 2. Expert Group on Vitamins and Minerals, 2003. |