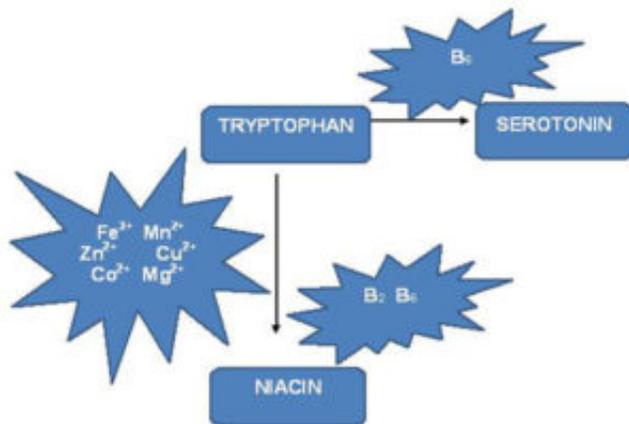


Vitamins and minerals in control of serious diseases?

We all know that vitamins and minerals are important, but why? The amino acid L-tryptophan is "essential" for mammals, and it must be obtained in the form of food. L-tryptophan can be utilized for protein synthesis, and also for the biosynthesis of the vitamin niacin, serotonin and melatonin. Dysregulations of L-tryptophan metabolism may play an important role in the pathophysiology of irritable bowel syndrome, Alzheimer's disease, Huntington's disease, Parkinson's disease, AIDS-dementia complex, schizophrenia, epilepsy, depression, and the aging process.



Tryptophan metabolism along the niacin pathway and serotonin pathway.

L-tryptophan metabolism is under the tight control of inflammatory mediators and is sensitive to changes in the concentration of B group vitamins (B₂, B₆) as well as micro- (Fe³⁺, Mn²⁺, Zn²⁺, Cu²⁺, Co²⁺) and macro-elements (Mg²⁺). Vitamin B₆ was found to be the most crucial vitamin engaged in L-tryptophan metabolism, since it is involved in the proper production of serotonin as well as niacin.

Deficiencies, rather than surpluses, of B-group vitamins seem to influence niacin production. However, the administration of minerals in a normally balanced diet is not known to influence L-tryptophan metabolism. Tryptophan-rich diet and maintenance of adequate B vitamins and minerals is important for patients susceptible to depression, diabetes, post-traumatic stress disorder, chronic pain, cancer, and drug addiction. It is therefore reasonable to assume that nutrients that affect the enzymes involved in the metabolism of the amino acid L-tryptophan are useful tools that may influence the progression of some serious diseases.

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Publication

[Overview of the role of vitamins and minerals on the kynurenine pathway in health and disease.](#)

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