



Vitamin B1

AT A GLANCE

Introduction

Vitamin B1, also called thiamin(e), is one of the eight water-soluble B vitamins. It is named B1 because it was the first B vitamin discovered. Humans rely on their food intake to cover their vitamin B1 requirements.

Health Functions

The main functions of vitamin B1 (thiamin pyrophosphate) are connected to its role as a helper molecule – a so-called coenzyme – which activates enzymes, the proteins that control the biochemical processes occurring in the body. A sufficient intake of vitamin B1 (thiamin) is important as it plays an essential role in

- the production of energy from food
- the synthesis of nucleic acids (e.g., DNA)
- the conduction of nerve impulses.

The European Food Safety Authority (EFSA), which provides scientific advice to assist policy makers, has confirmed that clear health benefits have been established for the dietary intake of vitamin B1 in contributing to:

- the normal function of the heart;
- normal energy-yielding metabolism;
- the normal function of the nervous system.

Disease Risk Reduction

Eye-related diseases

Some studies have suggested that vitamin B1 - along with other micronutrients such as vitamin A and vitamins of the B complex (B2, B9, B12) - may protect the eyes' lens from losing vision through cataracts.

Other Applications

Please note:

Any dietary or drug treatment with high-dose micronutrients needs medical supervision.

Brain disorders

Certain brain disorders, common in people with alcoholism, can be treated successfully with vitamin B1 (thiamin) supplements.

Alzheimer's disease

It has been proposed that thiamin supplements might help reduce severity of Alzheimer's disease. However, more research would be needed before thiamin could be proposed as an effective treatment.

Heart failure

Due to a lack of evidence, the roles of thiamin supplementation in maintaining heart function in individuals with heart failure remains controversial.

Intake Recommendations

Because vitamin B1 facilitates energy utilization, requirements are tied to energy intake, which can be very much dependent on activity levels. For adults, an average intake of 0.9–1.1 mg thiamin per day for women and 1.1–1.2 mg for men have been recommended, based on an average caloric intake.

Supply Situation

In European countries and the U.S., people generally meet national recommendations for intake of vitamin B1. However, institutionalization and poverty increase the likelihood of inadequate thiamin intake in the elderly.

Deficiency

Vitamin B1 (thiamin) deficiency is rare, but can occur in people who get most of their calories from sugar or alcohol. People with thiamin deficiency have difficulty digesting carbohydrates, causing a loss of mental alertness, difficulty breathing, and heart damage.

Sources

Vitamin B1 (thiamin) is found in most foods, but mostly in small amounts. The best source of thiamin is dried brewer's yeast. Other good sources include meat (especially pork and ham products), some species of fish (eel, tuna), whole grain cereals and bread, nuts, pulses, dried legumes and potatoes.

Safety

Thiamin is generally non-toxic. Very high doses may cause stomach upset.

Drug interactions

Please note:

Because of the potential for interactions, dietary supplements should not be taken with medication without first talking to an experienced healthcare provider.