



Vitamin B1

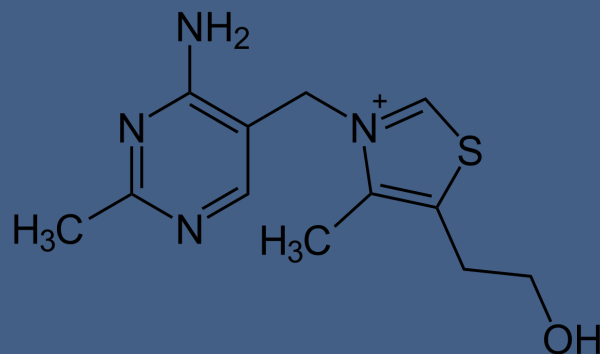
Thiamine

What is Vitamin B1?

It is also known as Thiamine or Benfothiamine, a natural and bioavailable form. Thiamine is an important water-soluble micronutrient that acts as a coenzyme for energy production to support all systems in the body and their functions. The said systems include the Immune System, Cardiovascular System, Nervous System, Digestive System, and more. Deficiency of Thiamine affects multiple organ function and can even cause organ damage.

Signs and Symptoms of B1 Deficiency

- Low energy and fatigue
- Loss of appetite, Impaired digestion, Nausea and vomiting
- Glucose intolerance
- Heart damage (see Wet Beriberi)
- Muscle weakness, pain and wasting
- Dyspnea (shortness of breath)
- Brain damage (see Dry Beriberi)
- Anxiety, Depression, Irritability, brain fog, memory loss, Delirium
- Neuropathy, reduced reflexes and numbness, tingling sensation and pain in the limbs, paralysis
- Female infertility
- Thyroid imbalance
- Blurry vision



What Does It Do?

- Helps extract nutrients from food and converts it into energy.
- Detoxification and removal of lead, other toxins and toxic wastes from the body.
- Helps in healthy stress response and keeps you in a good mental state.
- Boosts immune system health.
- Methylation and recycling of Vitamin B9.
- Synthesis of acetylcholine, a neurotransmitter that supports the function of the nervous system, brain, muscles, heart, stomach, intestines and kidneys to prevent complications (see signs and symptoms).
- Supports a healthy Thyroid.
- Reduces the odds of developing cataracts (cloudy eyes).
- Helps reduce the amount of albumin in urine of type 2 diabetic patients.
- May help reduce menstrual pain.



Beriberi

Vitamin B1 deficiency

What is Beriberi?

Beriberi is caused by Vitamin B1 (Thiamine) deficiency. There are two types of Beriberi, Wet and Dry.

Wet Beriberi is characterized by cardiovascular damage, whereas *Dry Beriberi* predominantly affects the Nervous System. Dry Beriberi is often associated with *Wernicke-Korsakoff Syndrome*, a form of brain damage.



What Causes B1 Deficiency?

- Primary deficiency: low intake of Vitamin B1
- Alcohol abuse
- Drug usage: diuretics, anti-seizures
- Genetic Beriberi
- Hyperemesis during pregnancy
- Bariatric surgery
- Secondary deficiency: chronic GI infections, SIBO & SIFO, inflammation, food allergies, maldigestion & malabsorption
- Undergoing kidney dialysis
- Tertiary deficiency: inability to utilize Thiamine, especially with high toxic load



Epidemiology of Beriberi

Worldwide, thiamine deficiency is mainly due to insufficient dietary intake, specifically in countries with diets mainly consisting of processed unenriched white rice and grains. In Western countries, it is most commonly prevalent in patients with a history of alcohol abuse or chronic illness. Individuals also at risk for thiamine deficiency include pregnant women, those who require the help of others for feeding, individuals who have undergone bariatric surgery, those with overall poor nutritional status, and patients on chronic diuretic therapy. Deficiency of thiamine in women can cause infantile beriberi.

Symptoms

Wet Beriberi:

- Dyspnea (shortness of breath) upon exertion
- Dyspnea after waking up
- Tachycardia (increased heart rate)
- Edema (frequent in lower limbs)
- Chronic heart failure



Dry Beriberi:

- Decreased motor function, eventually causing paralysis
- Tingling or numbness in limbs
- Neurological and muscle pain in limbs
- Delirium: mental confusion, memory loss, affected emotional state
- Difficulty speaking
- Seizures

In extreme Dry Beriberi, Wernicke Encephalopathy damages the thalamus and hypothalamus, causing:

- Confusion
- Memory loss
- Loss of muscle coordination
- Visual impairment

Korsakoff Syndrome permanently damages the the hypothalamus and Frontal Cortex, causing:

- Memory loss
- Inability to form new memories
- Hallucinations
- Confabulation: inventing events and information due to the inability to remember what happened



Treatment of B1 Deficiency

Easily treated with B1 (thiamine) supplementation. It can be administered by oral, intramuscular or intravenous route.



Prevention of B1 Deficiency

The most effective way to prevent B1 deficiency is by eating a healthy diet rich in thiamine, B1 supplementation, and living a healthy lifestyle: avoid processed foods, avoid overcooking your food, and excessive alcohol and caffeine consumption. Prevent and treat any underlying GI conditions.

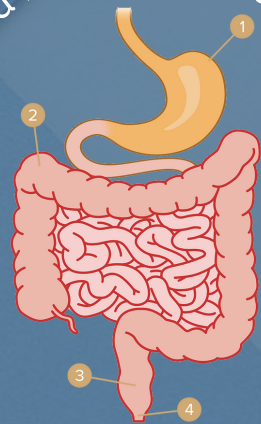


Avoid processed meat, grain, and vegetables



Eat fresh and colorful!

Maintain a healthy digestive system!



Avoid excessive alcohol consumption



Avoid overcooking your food



Cook smart and healthy!

Foods Rich In Thiamine



Supplements!

For the best fortification and reinforcement, you can also take Ultra B1, B Supreme, or Liposomal B Supreme. These supplements are a great source of thiamine and are great for those who follow a vegetarian diet!

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