



# B

## VITAMIN B<sub>1</sub>

### B Vitamins: Establishing Healthy Growth

#### VITAMIN B<sub>1</sub> BASICS

Also known as: Thiamine

Important for: Nervous system, muscles, heart function, healthy growth

Animal Sources: Fish (eel, tuna), pork, kidney, heart, liver

Grain/Fruit/Vegetable Sources: Brewer's yeast (best source), whole grain cereals and bread, leafy vegetables, potatoes, dried legumes, dried fruit, nuts

#### OVERVIEW

Vitamin B<sub>1</sub> is a water soluble vitamin that is part of the vitamin B complex group. Vitamin B<sub>1</sub> plays an important role in energy metabolism and is required for proper functioning of the nervous system and muscles, which contribute to a functional cardiovascular system.

#### DISCOVERY AND HISTORY

The active principle of vitamin B<sub>1</sub> was discovered in 1897 by Dutch physician and pathologist Christiaan Eijkman, who was researching the causes of beriberi, a common and sometimes fatal disease that causes fatigue, weakness and heart failure. Eijkman worked with chickens that were fed cooked white rice and unpolished uncooked rice – and he discovered that diet had a huge impact on which birds lived and which birds got sick and died. Later research on Eijkman's "anti-beriberi factor" by Polish-American scientist Casimir Funk led to the coining of the word "vitamin" in 1912. By 1926, vitamin B<sub>1</sub> was isolated and given the name thiamine. Eijkman was awarded a Nobel Prize in 1929 for his research around vitamin B<sub>1</sub>.

#### VITAMIN B<sub>1</sub> DEFICIENCY

A deficiency of vitamin B<sub>1</sub> alone is uncommon because it usually occurs in combination with a deficit in other B vitamins. However, there are health problems associated with low levels of vitamin B<sub>1</sub>, including:

- Delayed growth and development
- Impaired immune functions
- Fatigue
- Difficulty breathing
- Loss of mental alertness
- Heart damage
- Weight loss
- Weakness and muscular atrophy
- Night blindness
- Eye lesions
- Paralysis

#### POPULATIONS AT RISK OF VITAMIN B<sub>1</sub> DEFICIENCY

Vitamin B<sub>1</sub> deficiency and the corresponding disease beriberi occur sporadically in Southeast Asia. Severe vitamin B<sub>1</sub> deficiency is extremely rare in developed countries, but certain populations are more at risk:

- People who get the majority of their calories from sugar
- Alcoholics