



# B

## VITAMIN B<sub>12</sub>

### B Vitamins: Establishing Healthy Growth

#### VITAMIN B<sub>12</sub> BASICS

Also known as: Cyanocobalamin

Important for: Red blood cells, metabolism, immune system

Animal Sources: Liver (best source), kidneys, heart, meat, eggs, fish, dairy products

Grain/Fruit/Vegetable Sources: None

#### OVERVIEW

Vitamin B<sub>12</sub> is a water soluble vitamin and is part of the vitamin B complex group. It is known to be the largest and most complex vitamin. It is essential for the formation of blood cells, nerve sheaths and various proteins, and is also necessary for growth.

#### DISCOVERY AND HISTORY

Vitamin B<sub>12</sub> was discovered in 1926 by Georg Richard Minot and William Parry Murphy, who found that eating large quantities of liver restored red blood cells in patients with pernicious anemia (the inability to make enough red blood cells). In 1934, both scientists, as well as George Whipple, won a Nobel Prize for their work in treatment of pernicious anemia. Vitamin B<sub>12</sub> wasn't officially isolated until 1948.

#### VITAMIN B<sub>12</sub> DEFICIENCY

Vitamin B<sub>12</sub> deficiency is usually due to insufficient diet and absorption problems. It is rare in younger people and most commonly found in the elderly. Symptoms include:

- Pernicious anemia (body cannot make enough red blood cells)
- Neuropathy (nerve damage)
- General fatigue
- Loss of appetite
- Gastric atrophy (chronic inflammation of the stomach)
- Shortness of breath
- Diarrhea
- Tingling in the fingers and toes
- Neuromuscular pain
- Spinal cord degeneration
- Neurological problems (gait, memory)

#### POPULATIONS AT RISK OF VITAMIN B<sub>12</sub> DEFICIENCY

- Vegetarians, especially vegans
- The elderly
- People on antacid medications