



# BUSY B's

## B-COMPLEX

IS A BIG FAMILY OF VITAMINS,  
ALL OF WHICH ARE ESSENTIAL  
TO YOUR WELL-BEING.

The human body in all its mysterious complexity has inspired numerous metaphors, from exquisite machine to bountiful garden. But one of the most straightforward is that of body as chemical factory, producing thousands of substances without which you could not draw another breath.

Manufacturing at the body factory would come to a screeching halt without the B vitamins. Sometimes referred to as the B-complex, this group of related compounds enables the work of *enzymes*, substances that promote the various chemical reactions needed

to sustain life. But beyond those essential tasks, the best known of which is energy production, each of the individual B vitamins play a number of other crucial functions involving all of the body's systems and at all stages of life—including before conception.

Because of their role in helping the body generate energy, the most notable sign of overall B depletion is fatigue and general tiredness. But low levels of specific Bs can produce all sorts of symptoms, including mood problems and the pins-and-needles sensations caused by nerve dysfunction.



NUTRIENT	FOOD SOURCES*
<b>Biotin</b>	Avocados, eggs, liver, pork, salmon, yeast
<b>Choline</b>	Beef, broccoli, brussels sprouts, eggs, liver, shrimp, wheat germ
<b>Cobalamin (B12)</b>	Beef, clams, crab, mussels, salmon
<b>Folic Acid</b>	Asparagus, chickpeas, lentils, lima beans, orange juice, spinach
<b>Inositol</b>	Bananas, cabbage, cantaloupe, liver, oranges, raisins; the inositol found in beans and grains occurs in a form that is difficult to digest
<b>Niacin (B3)</b>	Chicken, salmon, tuna, turkey, yeast
<b>PABA</b>	Beer (unfiltered), brewer's yeast, liver, molasses (unrefined), mushrooms, whole grains
<b>Pantothenic Acid (B5)</b>	Avocados, broccoli, chicken, eggs, liver, milk, sunflower seeds, sweet potatoes, yogurt
<b>Pyridoxine (B6)</b>	Bananas, chicken, potatoes, salmon, spinach
<b>Riboflavin (B2)</b>	Almonds, eggs, milk (nonfat), spinach
<b>Thiamine (B1)</b>	Beans, brazil nuts, lentils, peas, pork (lean), sunflower seeds, tuna, yeast

\*Naturally occurring; some foods, especially cereals and other grain-based foods, have B vitamins added as part of the manufacturing process



## WHAT IT DOES

Needed for proper amino acid metabolism and DNA replication; deficiency, which may not be uncommon during pregnancy, has been linked to birth defect risk, and to hair loss and problems with blood sugar regulation

Required for production of phospholipids, found in all cell membranes, and acetylcholine, crucial to memory formation and muscle control; needed for proper fetal brain development; may have anti-inflammatory properties

Required, along with folic acid and vitamin B6, to neutralize homocysteine, associated with cardiovascular disease; deficiency linked to anemia; needed for proper brain function, including mood health; vegans at risk for deficiency

Long known to help prevent birth defects, especially neural tube defects such as spina bifida; use before conception may increase baby's birth weight; may be beneficial for people with asthma or certain kinds of depression

Needed for proper insulin usage; may help balance body chemicals linked to polycystic ovarian syndrome (PCOS) and to mood problems including depression, obsessive-compulsive disorder and panic attacks

Helps to lower total and LDL ("bad") cholesterol, along with triglycerides (blood fats), and to raise HDL ("good") cholesterol; has been linked to reduced risk of strokes and second heart attacks; may protect DNA against mutation

Full name, para-aminobenzoic acid; most often used topically as a sunscreen because of its ability to block harmful ultraviolet (UV) rays found in sunlight from reaching the skin

Needed for the production of coenzyme A, which helps turn food into energy; has supported testicular health and sperm motility in laboratory studies; helps speed wound healing and may help the skin retain moisture

Supports healthy red blood cell production and nervous system function; low levels may lower immune response; has been linked to reduced cancer risk and inflammation, and with better pregnancy outcomes, in studies

Needed for the regeneration of glutathione, a key antioxidant; plays a crucial role in energy production; higher intakes associated with reduced cataract risk; may help reduce frequency and severity of migraine attacks

Required for energy production and normal development of the myelin sheaths around nerves vital to proper impulse transmission; supports healthy heart function

**NOTE:** Optimal dosages will vary from person to person. Consult a nutritionally aware practitioner who can help you formulate an individualized supplementation plan.