



# NUTRIENT FUNCTIONS AND DEFICIENCY SYMPTOMS

FROM  SPECTRACELL LABORATORIES

NUTRIENT	POTENTIAL	WHAT IT DOES	WHERE IT'S FOUND	SYMPTOMS AND PROBLEMS
<b>Vitamin B1</b> <i>thiamin</i>	<b>VERY COMMON</b>	converts carbs to sugar, breaks down fats and protein, healthy digestion, nervous system, skin, hair, eyes, mouth, liver, immune system	pork, organ meats, wholegrain/enriched cereals, brown rice, wheat germ, bran, brewer's yeast, blackstrap molasses	decreased heart function, age-related cognitive decline, Alzheimer's, fatigue
<b>Vitamin B2</b> <i>riboflavin</i>	<b>LOW</b>	metabolism, converts carbs to sugar, breaks down fat & protein, healthy digestion, nervous system, skin, hair, eyes, mouth, liver, antioxidant properties	brewer's yeast, almonds, organ meats, whole grains, wheat germ, mushrooms, soy, dairy, eggs, green vegetables	poor iron absorption, anemia, decreased free radical protection, cataracts, poor thyroid function, B6 deficiency, fatigue, elevated homocysteine
<b>Vitamin B3</b> <i>niacin</i>	<b>VERY COMMON</b>	energy, digestion, nervous system, skin, hair, eyes, mouth, liver, eliminates toxins, sex/stress hormone production, improves circulation and cholesterol	beets, brewer's yeast, meat, poultry, organ meats, fish, seeds, nuts	cracking, scaling skin, digestive problems, confusion, anxiety, fatigue, reduced endurance
<b>Vitamin B6</b> <i>pyroxidine</i>	<b>VERY COMMON</b>	used in 100 enzymes for protein metabolism, RBC production, reduces homocysteine, healthy nerve & muscle cells, DNA/RNA, B12 absorption, immune function	poultry, tuna, salmon, shrimp, beef liver, lentils, soybeans, seeds, nuts, avocados, bananas, carrots, brown rice, bran, wheat germ, whole-grain flour	depression, sleep and skin problems, elevated homocysteine, increase heart disease risk
<b>Vitamin B12</b> <i>cobalamin</i>	<b>VERY COMMON</b>	healthy nerve cells, DNA/RNA, red blood cell production, iron function	fish, meat, poultry, eggs, dairy products	anemia, fatigue, weakness, constipation, loss of appetite, weight loss, numbness and tingling in the hands and feet, depression, confusion, dementia, poor memory, mouth or tongue soreness
<b>Biotin</b>	<b>RARE</b>	carbohydrate, fat, amino acid metabolism (the building blocks of protein)	meats, vegetables, unprocessed grains, brewer's yeast, corn, cauliflower, kale, broccoli, tomatoes, avocado, legumes, lentils, egg yolks, milk, sweet potatoes, seeds, nuts, wheat germ, salmon	depression, nervous system abnormalities, premature graying, hair loss, skin problems
<b>Folate</b>	<b>VERY COMMON</b>	brain function, mental health, DNA/RNA during infancy, adolescence and pregnancy, with B12 to regulate RBC production, iron function, reduce homocysteine	fortified cereals, grains, tomato juice, green vegetables, black-eyed peas, lentils, beans	anemia, impaired immune function, fatigue, insomnia, premature hair loss, high homocysteine, heart disease risk
<b>Pantothenate</b>	<b>COMMON</b>	RBC production, sex and stress-related hormones, immune function, healthy digestion, helps use other vitamins	meat, vegetables, whole grains, brewer's yeast, avocado, legumes, lentils, egg yolks, milk, sweet potatoes, seeds, nuts, wheat germ, salmon	reduced stress tolerance, poor wound healing, skin problems, fatigue
<b>Vitamin A</b> <i>retinol</i>	<b>COMMON</b>	eyes, immune function, skin, essential to cell growth and development	milk, eggs, liver, fortified cereals, orange or green vegetables, fruits	night blindness, poor immune function, zinc deficiency, fat malabsorption



# NUTRIENT FUNCTIONS AND DEFICIENCY SYMPTOMS

FROM  SPECTRACELL LABORATORIES

NUTRIENT	POTENTIAL	WHAT IT DOES	WHERE IT'S FOUND	SYMPTOMS AND PROBLEMS
<b>Vitamin D</b> <i>ergocalciferol</i>	COMMON	calcium and phosphorus levels, calcium absorption, bone mineralization	sunlight, milk, egg yolk, liver, fish	osteoporosis, decreased calcium absorption, thyroid problems
<b>Vitamin E</b> <i>α-tocopherol</i>	COMMON	antioxidant, regulates oxidation reactions, stabilizes cell membrane, immune function, protects against cardiovascular disease, cataracts, macular degeneration	wheat germ, liver, eggs, nuts, seeds, cold-pressed vegetable oils, dark leafy greens, sweet potatoes, avocado, asparagus	dry skin and hair, rupturing of red blood cells, anemia, easy bruising, PMS, hot flashes, eczema, psoriasis, cataracts, poor wound healing, muscle weakness, sterility
<b>Calcium</b>	VERY COMMON	bones and teeth, helps heart, nerves, muscles, other body systems work properly, needs other nutrients to function	dairy, wheat flour, soy flour, molasses, brewer's yeast, Brazil nuts, broccoli, cabbage, dark leafy greens, hazelnuts, oysters, sardines, canned salmon	osteoporosis, osteomalacia, osteoarthritis, muscle cramps, irritability, acute anxiety, colon cancer risk
<b>Magnesium</b>	VERY COMMON	used in 300 biochemical reactions, muscle/nerve function, keeps heart rhythm steady, immune system, strong bones, regulates calcium, copper, zinc, potassium, vitamin D	green vegetables, beans, peas, nuts, seeds, whole, unprocessed grains	loss of appetite, nausea, vomiting, fatigue, weakness, numbness, tingling, cramps, seizures, personality changes, abnormal heart rhythms, heart spasms
<b>Selenium</b>	COMMON	antioxidant, works with vitamin E, immune function, prostaglandin production	brewer's yeast, wheat germ, liver, butter, cold water fish, shellfish, garlic, whole grains, sunflower seeds, Brazil nuts	destructive changes to heart, pancreas, sore muscles, increased fragility of red blood cells, weak immune system
<b>Zinc</b>	VERY COMMON	supports 100 enzymes, immune system, wound healing, sense of taste/smell, DNA synthesis, normal growth, development during pregnancy, childhood, adolescence	oysters, red meat, poultry, beans, nuts, seafood, whole grains, fortified breakfast cereals, dairy	growth retardation, hair loss, diarrhea, delayed sexual maturation, impotence, eye and skin lesions, loss of appetite/taste, weight loss, delayed wound healing, mental lethargy
<b>Co-Q10</b>	COMMON	powerful antioxidant, stops oxidation of LDL cholesterol, energy production, important to heart, liver, kidney function	oily fish, organ meats, whole grains	congestive heart failure, high blood pressure, angina, mitral valve prolapse, fatigue, gingivitis, weak immune system, stroke, cardiac arrhythmias
<b>Carnitine</b>	LOW	energy, heart function, oxidize amino acids for energy, metabolize ketones	red meat, dairy, fish, poultry, tempeh (fermented soybeans), wheat, asparagus, avocados, peanut butter	elevated cholesterol, abnormal liver function, muscle weakness, reduced energy, impaired glucose control
<b>N-Acetyl Cysteine (NAC) &amp; Glutathione</b>	COMMON	glutathione production, lowers homocysteine, lipoprotein (a), heal lungs of free radical damage, inflammation, decrease muscle fatigue, liver detoxification, immune function	meats, ricotta, cottage cheese, yogurt, wheat germ, granola, oat flakes	free radical overload, elevated homocysteine, increased cancer risk, cataracts, macular degeneration, impaired immune function, impaired toxin elimination
<b>Alpha Lipoic Acid</b>	COMMON	energy, blood flow to nerves, glutathione levels in brain, insulin sensitivity, effectiveness of vitamins C, E, other antioxidants	supplementation, spinach, broccoli, beef, Brewer's yeast, some organ meats	diabetic neuropathy, reduced muscle mass, risk of atherosclerosis, Alzheimer's, failure to thrive, brain atrophy, increased lactic acid production