

Vitamin	What Does It Do?
B1/Thiamin	Thiamin (vitamin B-1) helps the body generate energy from nutrients. Thiamin is necessary for the growth, development and function of cells.
B12/Cobalamin	Vitamin B12 is required for proper red blood cell formation, neurological function, and DNA synthesis
Folate (folic acid)	Folate plays an important role in DNA synthesis and metabolism of amino acids.
Iron	Iron is needed for oxygen transport, energy production and DNA synthesis. It is an essential component of may proteins and enzymes in the body.
Vitamin D	Vitamin D promotes calcium absorption in the gut. It is needed to maintain healthy bones. Vitamin D also supports cell growth, immune function, and helps to reduce inflammation.
Calcium	Calcium is a major component of bones and teeth and is needed to maintain a healthy skeleton. It is required for constriction and relaxation of blood vessels and nerve transmission.
Vitamin A	Vitamin A is involved in vision, immune function, reproduction, and cell communication. Vitamin A also supports cell growth and differentiation and plays a role in the maintenance of other organs.
Vitamin E	Vitamin E is an important antioxidant. Vitamin E is involved in immune function, cell signaling, and other metabolic processes.

Vitamin K	Vitamin K is important for blood clotting. It may also help in maintaining strong bones.
Zinc	Zinc is needed for the body's immune system to work properly. It plays a role in cell division, cell growth, wound healing, and the use of carbohydrates.
Copper	Copper is involved in energy production, iron metabolism and wound healing.
Other Nutritional Requirements	
Protein	Protein is the building block of your muscles, skin, enzymes and hormones. It plays an essential role in all body tissues.

What Does ASMBS Recommend?	Notes
12mg	Thiamin stores in the body are limited and easily depleted with prolonged vomiting. Thiamin deficiency can affect the heart, nerves in arms and legs, and central nerves system.
350-1000mcg	
400-800mcg 800-1000mcg (female child bearing age)	Folate deficiency during pregnancy is associated with increased risk of birth defects.
18-60mg	
75mcg	
1200-1500mg	Take in divided doses with or without meals
1500-3000mcg	
15mg	

90-120mcg	If you take certain blood-thinning drugs (anticoagulant/antiplatelet drugs) such as warfarin (Coumadin), it is important to eat a consistent amount of vitamin K containing foods each day.
8-22mg	
2mg	
60g/day (minimum)	90g/day recommended for anyone over 40 to maintain muscle. Additional 20-30g/day for exercise.

Signs and Symptoms of Deficiency.
Weakness, rapid heart rate, muscle pain, confusion, loss of memory and difficulty walking.
Fatigue, weakness, anemia, constipation, loss of appetite, soreness of the mouth or tongue, difficulty maintaining balance, depression, confusion and poor memory.
Weakness, fatigue, sore tongue, difficulty concentrating, irritability, headache, rapid heart rate, shortness of breath, anemia and gastrointestinal symptoms.
Fatigue, rapid heart rate, shortness of breath with exercise, headaches, anemia and spoon shaped nails.
Bone pain, muscle weakness and osteomalacia (weak bones).
Lethargy, poor appetite and low bone density.
Abnormal eye dryness, inability to see in low light or darkness and night blindness; increases the severity and mortality risk of infections.
Impaired balance, muscle weakness and damage to retina of eye.

Bruising and prolonged blood clotting.
Impaired immune function, delayed healing of wounds, hair loss and taste abnormalities.
Anemia, fatigue, weakness, brittle bones, memory issues, difficulties walking, increased cold sensitivity, and premature gray hair.
Muscle wasting, edema, thinning hair, brittle nails, flaky or splitting skin and greater risk of infection.