

VITAMIN C

DRI RECOMMENDED INTAKES:

Men: 90 mg/day

Women: 75 mg/day

Smokers: 35 mg/day

TOLERABLE UPPER INTAKE LEVEL:

Adults: 2,000 mg/day

CHIEF FUNCTIONS:

Collagen synthesis (strengthens blood vessel walls, forms scar tissue, provides matrix for bone growth), antioxidant, restores vitamin E to active form, supports immune system, boosts iron absorption

DEFICIENCY:

Scurvy, with pinpoint hemorrhages, fatigue, bleeding gums, bruises; bone fragility, joint pain; poor wound healing, frequent infections

TOXICITY:

Nausea, abdominal cramps, diarrhea; rashes; interference with medical tests and drug therapies; in susceptible people, aggravation of gout or kidney stones.

THIAMIN

DRI RECOMMENDED INTAKES:

Men: 1.2 mg/day

Women: 1.1 mg/day

CHIEF FUNCTIONS:

Part of coenzyme active in energy metabolism

DEFICIENCY:

a

Beriberi with possible edema or muscle wasting; enlarged heart, heart failure, muscular weakness, pain, apathy, poor short-term memory, confusion, irritability, difficulty walking, paralysis, anorexia, weight loss

TOXICITY:

None reported

RIBOFLAVIN

DRI RECOMMENDED INTAKES:

Men: 1.2 mg/day

Women: 1.1 mg/day

CHIEF FUNCTIONS:

Part of coenzyme active in energy metabolism

DEFICIENCY:

Cracks and redness at corners of mouth; painful, smooth, purplish red tongue; sore throat; inflamed eyes and eyelids, sensitivity to light; skin rashes

TOXICITY:

None reported

NIACIN

DRI RECOMMENDED INTAKES:

Men: 16 mg/day

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Women: 14 mg/day

TOLERABLE UPPER INTAKE LEVEL:

Adults: 35 mg/day

CHIEF FUNCTIONS:

Part of coenzymes needed in energy metabolism

DEFICIENCY:

Pellagra, characterized by flaky skin rash (dermatitis) where exposed to sunlight; mental depression, apathy, fatigue, loss of memory, headache; diarrhea, abdominal pain, vomiting; swollen, smooth, bright red or black tongue

TOXICITY:

Painful flush, hives, and rash ("niacin flush"); excessive sweating; blurred vision; liver damage, impaired glucose tolerance

FOLATE

DRI RECOMMENDED INTAKE:

Adults: 400 µg/day

a

TOLERABLE UPPER INTAKE LEVEL:

Adults: 1,000 µg/day

CHIEF FUNCTIONS:

Part of a coenzyme needed for new cell synthesis

DEFICIENCY:

Anemia, smooth, red tongue; depression, mental confusion, weakness, fatigue, irritability, headache; a low intake increases the risk of neural tube birth defects

TOXICITY:

Masks vitamin B

12

-deficiency

Symptoms

B12

DRI RECOMMENDED INTAKE:

Adults: 2.4 µg/day

CHIEF FUNCTIONS:

Part of coenzymes needed in new cell synthesis; helps to maintain nerve cells

DEFICIENCY:

Pernicious anemia;

a anemia (large-cell type);

b smooth tongue; tingling

or numbness; fatigue, memory loss,

disorientation, degeneration of nerves progressing to paralysis

TOXICITY:

None reported

B6

DRI RECOMMENDED INTAKE:

Adults (19–50 yr): 1.3 mg/day

TOLERABLE UPPER INTAKE LEVEL:

Adults: 100 mg/day

CHIEF FUNCTIONS:

Part of a coenzyme needed in amino acid and fatty acid metabolism; helps to convert tryptophan to niacin and to serotonin; helps to make hemoglobin for red blood cells

DEFICIENCY:

Anemia, depression, confusion, abnormal brain wave pattern, convulsions; greasy, scaly dermatitis

TOXICITY:

Depression, fatigue, impaired memory, irritability, headaches, nerve damage causing numbness and muscle weakness progressing to an inability to walk and convulsions; skin lesions