
Supplement Dictionary

Each entry gives: what the substance is, the book's main claims about it with their labels, any safety notes, and the chapters where the sources are. Each label applies only to the claim just before it.

Ashwagandha. An Indian herb marketed for stress and sleep. Reduces stress and improves sleep (■■■ **Debated**). Cases of liver injury have been recorded; avoid in pregnancy, thyroid disease or autoimmune disease. Chapter 10.

Beta-carotene. An orange pigment in fruit and vegetables that the body turns into vitamin A. High-dose pills increase lung cancer in people who smoke or have been exposed to asbestos (■■■ **Strong evidence**). Fruit and vegetables rich in beta-carotene don't carry this risk. Chapter 1.

Biotin (vitamin B7). Found in "hair, skin and nails" products. High doses distort some blood tests, including troponin (■■■ **Strong evidence**). Tell your doctor before every blood test. Chapter 12; Volume 10.

Calcium. The bone-building mineral; best from food first. Calcium pills prevent fractures (■■■ **Debated**). Calcium pills increase heart attacks (■■■ **Debated**). Calcium with vitamin D increases kidney stones (■■■ **Moderate evidence**). Chapters 6, 8.

Creatine. A substance the body makes itself, found in meat and fish; helps regenerate energy for short efforts. Combined with resistance training, helps older adults gain more lean mass and strength than training alone (■■■ **Moderate evidence**). Doesn't harm the kidneys

in healthy people (■■■ **Moderate evidence**). Raises creatinine on blood tests; people with kidney disease should ask their doctor. Chapter 11.

Echinacea. Prevents or treats colds (■■■ **Debated**). Products vary enormously, and most haven't been tested. Chapter 9.

Elderberry. Shortens colds and flu (■■■ **Debated**). Raw berries, leaves and stems can be poisonous. Chapter 9.

EPA, high-dose purified (icosapent ethyl). A prescription medicine, not a supplement. Reduces cardiovascular events in people with high triglycerides who take statins (■■■ **Debated**). Chapter 7.

Fish oil (omega-3, EPA, DHA). Ordinary fish oil pills have almost no effect on deaths or cardiovascular events (■■■ **Strong evidence**). Lowers blood triglycerides (■■■ **Strong evidence**). Increases the risk of atrial fibrillation, especially at more than 1 g a day (■■■ **Moderate evidence**). Supplements in pregnancy reduce preterm birth (■■■ **Moderate evidence**). In healthy older adults, doesn't improve memory over a few years (■■■ **Moderate evidence**). Chapter 7.

Folic acid (folate). A B vitamin needed for the developing neural tube and for making blood. Taken before and in early pregnancy, reduces neural tube defects in the baby (■■■ **Strong evidence**). Prevents heart disease and cancer in healthy adults (■■■ **Debated**). Chapters 1, 5, 8.

Ginkgo. Sold as a "brain tonic". Doesn't prevent dementia in older adults (■■■ **Moderate evidence**). May increase the risk of bleeding in people taking blood thinners (■■■ **Debated**). Chapters 10, 12.

Green tea extract (EGCG). A common ingredient in weight-loss products. High doses (around 800 mg of EGCG a day or more) can cause liver injury (■■■ **Moderate evidence**). Green tea brewed the usual way is considered safe. Chapter 10.

"Immune boosting" products. Make you sick less often (■■■ **Unproven**). Chapter 9.

Iron. Oral iron treats iron deficiency anemia (■■■ **Strong evidence**). Taking it once a day is better than splitting it through the day (■■■ **Moderate evidence**). Taking it on alternate days is absorbed better than daily (■■■ **Debated**). Dangerous for young children; iron deficiency in men and postmenopausal women needs its cause found; don't take it if you're not low. Chapter 8.

“Liver detox” products. Protect the liver in healthy people (■■■ Unproven). Chapter 10.

Magnesium. This book doesn’t cover magnesium for sleep (see Volume 3). Note: many magnesium products contain added vitamin B6 (Chapter 12).

Melatonin. A prescription medicine in many countries, a supplement in some. Melatonin gummies can contain amounts far from the label (Chapter 3). Sleep: Volume 3.

Multivitamins. In healthy people, don’t reduce cardiovascular disease (■■■ Moderate evidence). Slightly lower cancer risk in healthy people (■■■ Debated). In healthy people, taking one regularly doesn’t extend life (■■■ Moderate evidence). Slow memory decline in older adults (■■■ Debated). People who’ve had weight-loss surgery need a daily multivitamin with minerals (■■■ Strong evidence). Chapters 1, 5.

NMN, NR. Precursors of NAD+. Slow aging in humans (■■■ Unproven). Rules differ between countries and are changing. Chapter 11.

Protein powder (whey, soy, plant protein). Food in a convenient form. Protein supplements add some muscle during resistance training, but the benefit is small and levels off at about 1.6 g of protein per kg per day (■■■ Moderate evidence). People with kidney disease should ask their doctor first. Chapter 11.

“Smart pills” (nootropics). Improve memory in healthy people (■■■ Unproven). May contain drugs not approved for sale. Chapter 11.

St John’s wort. An herb used for mild to moderate depression (Volume 11). Weakens many important medicines (■■■ Strong evidence), including birth control pills, warfarin, transplant drugs, some HIV and cancer medicines. Chapter 10.

Turmeric (curcumin). Eases knee pain (■■■ Debated). Liver injury has been reported with products designed for high absorption. Turmeric in food carries no such concern. Chapters 10, 13.

Vitamin A (as retinol, retinyl). A fat-soluble vitamin stored in the body. Upper safe level 3,000 micrograms (about 10,000 IU) a day. High doses in pregnancy can cause birth defects (safety flag in Chapter 5). Chapters 5, 12.

Vitamin B6. Long-term high doses can cause peripheral neuropathy (■■■ Moderate evidence). Often hidden in several bottles; upper safe

level from 12 mg (Europe) to 100 mg (United States) a day. Chapter 12.

Vitamin B12. Vegans need a reliable source of B12 (■■■ Strong evidence). Long-term metformin use increases the risk of B12 deficiency (■■■ Strong evidence). Taking proton pump inhibitors for two years or more is linked to B12 deficiency (■■■ Debated). No upper safe level. Chapters 2, 8.

Vitamin C. Taking it regularly doesn't reduce how often ordinary people catch colds (■■■ Strong evidence). Roughly halves colds in people under very heavy physical stress (■■■ Moderate evidence). Slightly shortens colds (■■■ Moderate evidence). Starting it once you have a cold helps you recover faster (■■■ Debated). Chapter 9.

Vitamin D. Prevents and treats rickets and osteomalacia in people at risk of severe deficiency (■■■ Strong evidence). In people who aren't deficient, doesn't reduce fractures (■■■ Strong evidence). Doesn't reduce the number of people who develop cancer (■■■ Strong evidence). In healthy people, doesn't reduce cardiovascular disease (■■■ Moderate evidence). With calcium, reduces hip fractures in older people living in care facilities (■■■ Moderate evidence). Healthy people without symptoms don't need routine tests (■■■ Moderate evidence). A very high once-yearly dose increases falls and fractures in older women (■■■ Moderate evidence). Chapters 2, 6.

Vitamin E. Pills don't prevent heart disease or cancer (■■■ Strong evidence). 400 IU a day slightly increases prostate cancer risk (■■■ Moderate evidence). Chapter 1.

Vitamin K. Needed for blood clotting. Changing daily vitamin K intake changes how warfarin works (■■■ Strong evidence). Chapter 12.

Zinc. Lozenges or syrup started early in a cold shorten it by about 2 days (■■■ Debated). Taking it regularly means fewer colds (■■■ Unproven). Upper safe level 40 mg a day; long-term high doses cause copper deficiency; don't use it in the nose. Chapters 9, 12.

Covered in other volumes. Probiotics: Volume 4. Collagen: Volume 10. Melatonin and magnesium for sleep: Volume 3.