

Food Sources of Nutrients and When to Supplement

Vitamin A

Food sources

- Vitamin A is found in the diet as preformed vitamin A in the form of retinol and retinyl esters and as vitamin A precursors such as beta-carotene and other carotenoids.
- **Some beta-carotene can be converted into vitamin A, but the conversion is not efficient.** This means it is possible to eat plenty of vitamin A precursors but still be deficient in vitamin A. In this case, food sources of preformed vitamin A should be emphasized.
- **Preformed vitamin A (retinol and retinyl esters):** Animal foods, particularly beef liver or chicken liver (3–6 oz. per week) and egg yolks
- **Vitamin A precursors:** Carrots, sweet potatoes, winter squash, kale, spinach, collard greens, pumpkin

Supplements

If food is not enough, supplement with cod liver oil. One teaspoon contains 4,000 IU of retinol, which meets the RDA for vitamin A.

Vitamin D

There are three sources of vitamin D: food, sun, and supplements. Mixing all three sources tends to work best for patients. The goal is to help patients achieve an optimal vitamin D level of 40–60 ng/mL.

Food sources

- Chicken and duck eggs, sardines, mackerel, bluefin tuna, trout, eel, beef liver, pork
- Only around 10 percent of the vitamin D requirement is met with food; most people cannot meet the requirement this way.

Sun

- Full-body exposure in the midday summer sun produces approximately 10,000 IU of vitamin D. To achieve optimal vitamin D production, the rule of thumb is to stay in the sun

for half the amount of time it takes for skin to turn pink; this could be as short as 15 minutes for someone with pale skin.

- Obesity and inflammation decrease the conversion of sunlight to vitamin D.

Supplements

Cod liver oil contains 400 IU of vitamin D, which is 100 percent of the RDA. It also contains vitamin A; vitamins A and D have a synergistic relationship.

Magnesium

The optimal intake range of magnesium is 500–700 mg/day from food and supplements combined.

Food sources

- Leafy greens (such as spinach and chard), molasses, chocolate, bananas, pumpkin seeds, almonds, lentils
- Soak legumes for 18 hours prior to cooking to reduce their phytate content, which can inhibit intestinal absorption of magnesium.
- Soak and dehydrate, sprout, or roast nuts to remove phytates and enhance absorption.

Supplements

Many people need to supplement to achieve an adequate magnesium intake. People already on a nutrient-dense diet can supplement with 100–500 mg of magnesium glycinate or malate.

Vitamin K2

Food sources

- The major forms of K2 in the diet are menaquinone-4 (MK-4) and menaquinone-7 (MK-7).
- **Sources of MK-4:** Grass-fed full-fat dairy products, gouda, brie, poultry liver (especially goose liver), pastured egg yolks
- **Sources of MK-7:** Natto (fermented soy), fermented foods such as sauerkraut and cheese

Supplements

- Recommended supplementation dose is 100–1,000 mcg/day of either MK-4 or MK-7.
- Vitamin K2 has no known toxicity level.
- K2 supplementation is best when combined with optimal vitamin A and D intake because these nutrients work synergistically.
- Supplementation may be contraindicated with patients on blood thinner such as Coumadin (warfarin).

Iodine

People following a “healthy” diet are more likely to be deficient in iodine because the main sources of iodine in the standard diet are fortified foods, iodized salt, and dairy products, which many people remove from their diets when they start eating healthier.

Food sources

- Sea vegetables (kelp, kombu, hijiki, arame), cod, shrimp, yogurt, milk, eggs
- Tip: Use kelp flakes in place of salt a few times a week. One gram of kelp flakes meets your iodine need for the entire week.

Calcium

Calcium supplements are NOT recommended because they are associated with increased fracture rates and a higher risk of cardiovascular disease and arterial calcification. These adverse effects are not found with a high dietary calcium intake. Ideally, calcium intake should come from food.

Food

- Sardines (with bones), yogurt, cheese, canned sockeye salmon, sesame seeds, collard greens, spinach, turnip greens, mustard greens, beet greens, bok choy, almonds, Swiss chard, kale, cabbage, Brussels sprouts, green beans, summer squash, asparagus, celery, romaine lettuce, leeks, and a variety of herbs and spices (cinnamon, fennel, parsley, cumin, basil, garlic, oregano, cloves, black pepper).
- Remember that plant sources of calcium are less bioavailable than animal sources such as bone-in fish and dairy products.

Vitamin E

Vitamin E supplementation is NOT recommended because some studies show harm from supplementation, including an increased risk of death from all causes.

Food

- Spinach, turnip greens, chard, sunflower seeds, almonds, bell peppers, asparagus, collards, kale, broccoli, and Brussels sprouts.
- Eat these foods with a source of fat to enhance vitamin E absorption.