

5 Vitamins You Can Overdose on

Taking too many of these vitamin and mineral supplements can be dangerous, even deadly

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Published April 08, 2024



THE VOORHES/GALLERY STOCK

Vitamin use is commonplace among older Americans. Research has found that [78 percent of adults 50 and older take vitamins](#) or supplements, according to a 2021 AARP survey. For adults 65 and older, that rises to 83 percent. Although vitamins can be valuable for those who have a deficiency, older Americans need to be cautious about how many they take and aware of potential interactions with medications.

Overconsumption can lead to serious health problems and can even be fatal.

An 89-year-old British man died of an overdose of Vitamin D supplements in February 2023 in England.

Vitamin D helps the body absorb calcium, but going over the daily recommended intake can cause hypercalcemia, a condition in which the calcium level in the blood becomes too high.

Supplements are heavily marketed, sometimes with unsubstantiated claims. The Food and Drug Administration (FDA) doesn't [regulate the supplement market](#) in the same way it does medications.

“While there’s some regulation on how they’re produced, the FDA isn’t really reviewing them to make sure that they’re safe or effective before they go to market,” says Lauren Haggerty, clinical pharmacist at Johns Hopkins Medicine.

Haggerty says companies say a supplement will prevent heart disease when there isn’t evidence to support that claim.

There are two types of vitamins: water-soluble and fat-soluble. Water-soluble vitamins typically flush out of the user’s system when there’s too much but not an extremely high dose, Haggerty says. Fat-soluble vitamins, A, D, E and K, are best absorbed with meals with healthy fats and are stored in the body.

“We definitely want people to be cautious with [fat-soluble vitamins] because they will just build up in the system, and those are the ones that can cause more toxicity in excess,” says Wendolyn Gozansky, M.D., a geriatrician and chief quality officer with Kaiser Permanente.

Speak to your doctor first

Many people take supplements before consulting with their doctor.

“A lot of patients will consume vitamins because they were sold them by some marketing strategy or someone’s recommendation,” says

Matthew Farrell, M.D., family medicine physician at the Ohio State University Wexner Medical Center. Because of this, many people take supplements they don't need.

"I make it a point to be sure that I'm asking people everything that they're taking for their health and understand what that is so that I can be sure that I know that they're getting the right amount of what they need," Gozansky says.

The majority of people receive sufficient vitamins through their diet and don't need supplements. "The best way to get your vitamins and minerals is to eat a really well-balanced diet," Gozansky says.

What does a well-balanced diet look like? "For most people, if they're eating a pretty [balanced diet](#) with fruits and vegetables, whole grains, low-fat proteins, dairies and beans, then I would say [they] most likely [don't need a supplement] unless it's recommended by a doctor because they're specifically deficient in something," Haggerty says. It's a lot easier for the body to absorb nutrients through food rather than a pill, and there's less concern of overconsumption. "It's pretty rare for someone to take too much of a vitamin through their diet," Haggerty says.

Here are five common vitamins and minerals that people can overconsume. Be aware that upper safe limits for these vitamins include combined amounts from vitamins and food.

1. Vitamin A

Vitamin A is important for vision, the immune system, cell division and more. Most people get sufficient vitamin A, also known as retinol, through diet. According to the National Institutes of Health (NIH), women should consume 700 micrograms of retinol activity equivalents (RAE) per day and men should have 900 mcg RAE.

An excess of vitamin A is absorbed in the body and can build toxicity in the liver. Acute toxicity, called [hypervitaminosis A](#), occurs when a person repeatedly takes a higher dose, more than 4,000 international

units (IU) daily over months, which is more than 100 times the recommended dietary allowance, according to the NIH.

“You can have some acute symptoms like nausea, vomiting, vertigo, blurry vision,” Farrell says. Other symptoms typically include [severe headache](#), aching muscles and coordination problems. In severe cases, too much vitamin A can cause an increase in cerebral spinal fluid pressure, leading to drowsiness and, eventually, coma and even death.

If you have a preexisting liver condition, excess vitamin A is concerning. “It can hurt your liver if you already have liver problems,” Haggerty says.

Recommended daily amount*

- 700 mcg for women
- 900 mcg for men

Overdose

- 25,000 IU a day can cause chronic poisoning.
- The safe upper limit for adults is 3,000 mcg.

Foods with vitamin A

- Beef liver
- Sweet potato, baked in skin
- Spinach
- Carrots

*Note: All recommended daily amounts are from the NIH.

2. Vitamin B6

Vitamin B6 is important for maintaining the health of the whole body, along with many metabolic processes, brain development and

improving mood. Consuming too much B6 through food is difficult to do.

Despite B6 being water-soluble, it's possible to take too much when taking big doses or supplements. Taking high doses of B6 – more than 250 milligrams per day – can cause nerve damage and nerve pain, Haggerty says.

Curiously, B6 can be used to treat the same issues it can cause. “Sometimes we use B6 in the right doses to treat neuropathy or nerve problems,” Gozansky says.

Recommended daily amount

- 19-50 years old: 1.3 mg for men and women
- 50-plus: 1.7 mg for men, 1.5 mg for women

Overdose

- 250 mg per day, long-term (100 mg per day, recommended upper limit by the National Academy of Sciences Food and Nutrition Board)

Foods with vitamin B6

- Chickpeas
- Beef liver
- Tuna
- Salmon

3. Vitamin D

Vitamin D is unique in that our bodies can make it when exposed to sunlight, along with absorbing it from [what we consume in our diets](#). “I often think of [vitamin D] not even so much as a vitamin but I think about it as a hormone because it's very important for muscle strength,

it's important for bones, it helps to regulate your parathyroid and your kidney function," Gozansky says.

Some people have vitamin D deficiencies and need to take additional supplements. "You don't need that much sun exposure, but in the winter months, it's too cold to stand outside, even for 15 minutes," Farrell says.

Gozansky recommends speaking with a doctor if you're concerned about consuming adequate vitamin D. "We can test for vitamin D levels in the blood to make sure that your storage level is the right amount," she says.

Even though sufficient vitamin D is important for our health, too much can be dangerous, even deadly.

An adult shouldn't exceed 100 mcg or 4,000 IU per day from food, drinks and supplements, according to the NIH. Overdosing on vitamin D can cause too much calcium in the blood, Gozansky says.

High doses in the blood can cause confusion, dehydration, kidney stones, nausea and vomiting and can lead to irregular heartbeat and death, according to the NIH.

According to a paper published in *BMJ Case Reports* in 2022, a British man, whose name was not released, [started a vitamin regime](#) on the advice of a private nutritionist and was taking 150,000 IU of vitamin D a day – 375 times the recommended amount in the U.K. For three months, he suffered from vomiting, nausea, abdominal pain, leg cramps, tinnitus, dry mouth, diarrhea and weight loss. By the time he was admitted to a hospital, his kidneys were failing. He was treated in the hospital for eight days. After two months, his blood calcium levels had dropped.

In 2023, David Mitchener, 89, died in England 10 days after being admitted for hypercalcemia to a hospital. Reportedly, he had been taking vitamin D for nine months. A [coroner's report](#) noted that food labeling rules didn't require warnings on the packaging of supplements

that would have detailed the risks of taking too much vitamin D. “In my opinion there is a risk that future deaths will occur unless action is taken,” coroner Jonathan Stevens wrote in the report.

“We don’t want people getting too much vitamin D because that can actually cause problems as well with high calcium levels in the blood,” Gozansky says.

Recommended daily amount

- 1-70 years old: 15 mcg (600 IU) for men and women
- 70-plus years: 20 mcg (800 IU) for men and women

Overdose

Take no more than upper limit of 100 mcg (4,000 IU) daily from food, drinks and supplements

Foods with Vitamin D

- Rainbow trout
- Sockeye salmon
- Fortified milk

The body also makes [vitamin D when exposed to sunshine](#).

4. Calcium

Calcium is a mineral the body doesn’t produce on its own that is essential for [bone health](#), teeth and movement. Calcium and vitamin D are often taken together for bone health and better absorption. Consuming too much calcium through diet isn’t common, but taking supplements makes it easy to overdo it.

Although our bodies are generally good at regulating how much calcium is in our bloodstream, if we take too much as a supplement, it can cause heart problems and kidney stones. [Symptoms of calcium](#)

[overdose](#) can include abdominal pain, nausea, vomiting, impaired kidney function, an increase in the pH of blood and more, according to Mount Sinai. How much is too much calcium?

“Anything over 2,200 milligrams a day, we start worrying about having stomach upset or potentially predispose people to kidney stones,” Gozansky says.

There isn’t a test to check your calcium levels, so it’s important to know whether you’re consuming sufficient quantities daily. “I usually counsel patients on getting a total of 1,200 milligrams of elemental calcium per day,” Farrell says. “Everyone should be getting that, especially women as they approach and pass menopause, because they’re at the highest risk for osteoporosis.” More than that can lead to health issues.

Recommended daily amount

- 19-50 years old: 1,000 mg
- 51-70 old: 1,000 mg for men, 1,200 mg for women
- 70-plus: 1,200 mg

Overdose

- The upper limit for people 19-50 is 2,500 mg.
- The upper limit for people 51-plus is 2,000 mg.
- Regular intake of more than 2,200 mg per day increases risk of health problems.

Foods with calcium

- Yogurt
- Fortified orange juice
- Mozzarella cheese

5. Iron

The mineral iron is needed for development, growth and making some hormones. Most older adults don't need to take additional iron since deficiency is associated with blood loss. "Taking an iron supplement in older age is not typical because we're not losing blood normally," Gozansky says.

Low iron can be a symptom of anemia or more concerning issues. An anemia "diagnosis can actually portend something very serious," Farrell says, especially in older adults. "We as doctors tend to pursue pretty aggressively a workup of the [gastrointestinal] system to make sure they don't have cancer."

He explains doctors have to figure out what causes a person to be iron deficient since it's uncommon for the condition to be caused by diet alone.

Although an iron deficiency can signal and cause serious health problems, taking too much iron can be dangerous.

An adult can take up to 45 mg of iron or less from supplements, food and drinks daily. Taking more is unsafe and can cause health issues, including diarrhea, vomiting and weakness, according to Mount Sinai. "Too much iron actually can cause problems with the liver and the heart because it will deposit in the tissues," Gozansky says.

Recommended daily amount

- 19-50 years old: 8 mg for males, 18 mg for females
- 51-plus: 8 mg for males, 8 mg for females

Overdose

- 45 mg is the upper intake level for everyone over 14.

- **Warning:** Be careful not to leave iron supplements where children can get them. From 1983 to 2000, at least 43 children died from ingesting supplements with high doses of iron.

Foods with iron

- Fortified breakfast cereals
- Oysters
- White beans
- Beef liver
- Lentils

Times People May Need a Vitamin or Mineral Supplement

There are some cases in which people have health issues or deficiencies and supplements are warranted. For example, those who have had gastric bypass surgery may need to take supplements. For people who have macular degeneration, doctors often prescribe supplements that may slow the progression of the disease. People deficient in calcium or vitamin B12 may also need to supplement their diet. Be aware that many herbal remedies, vitamins and supplements can [interact with medications](#), which can cause problems. The best course is to discuss any supplement or herbal remedy use with your doctor. For more information, see [3 Supplements You May Actually Need After Age 50](#).

Lauren David is a contributing writer who writes about gardening, food and health. Her work has appeared in The Washington Post, Better Homes and Gardens, Martha Stewart, Southern Living and more.