

# NIH News in Health

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## Do You Need Dietary Supplements? Vitamins, Minerals, and More

Bottles of supplements line the shelves at your local supermarket. These include vitamins and minerals from A to zinc. You can also find products like probiotics, herbs, and fish oil. But are they needed for good health? And what about their risks?

“For most people, eating a nutritious variety of foods can provide all the nutrients they need,” says Carol Haggans, a registered dietitian and consultant with NIH. But some may need more than they get from their meals. Your needs can vary depending on your age, health, and what you eat.

Many misunderstand what dietary supplements are for, Haggans explains. “Some people might believe or hope that supplements can prevent or treat disease, but that’s not what they’re intended to do,” she says. “They’re intended to supplement the diet.”

Dietary supplements are regulated by the U.S. Food and Drug Administration. “But they’re regulated under the umbrella of food,” says Haggans. “It’s important



for people to know that they’re not regulated like medicines.”

That means companies don’t have to prove that a supplement works before selling it. Companies are required to follow good manufacturing practices in making their products. But bottles still may not always contain what the label claims.

A few independent organizations conduct quality tests of supplements and give seals of approval. But these tests only ensure that a product was properly made and contains the listed ingredients. They don’t guarantee that it works or is safe to take.

**Who Needs Supplements?** • Your body needs different amounts of certain nutrients at different times in your life. For example, the ability to absorb and process some nutrients decreases with age. So older adults may need more of certain vitamins

and minerals, such as vitamin D, vitamin B12, and calcium.

People who avoid certain foods may also need a nutrient boost. For example, vitamin B12 is found only in animal products. “So if you follow a vegan diet, you may not get enough B12 from food,” Haggans says.

Women who are pregnant, or may become pregnant, need a certain amount of folic acid. This helps prevent a type of birth defect called neural tube defects. And infants may need more vitamin D than the amount found in breast milk.

People with chronic health conditions also may need more of some vitamins and minerals, says Dr. Patricia

Haggerty, who studies nutrition and the **immune system** at NIH. These conditions include heart disease, diabetes, cancer, HIV/AIDS, and some **autoimmune diseases**.

But whether you need a supplement—and which one or ones—isn’t something to guess at, Haggerty says. “Which supplements, the dosage, and so on, are things you should work out with your health care provider.” Blood tests often can help determine whether you have a nutrient deficiency.

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### Definitions

#### Immune System

The system that protects your body from invading viruses, bacteria, and other microscopic threats.

#### Autoimmune Disease

A condition in which the body’s immune system mistakenly attacks and destroys the body’s own cells.

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**Safety Concerns** • If you take supplements, tell your health care providers. Some supplements can change how well medications work. Others have risks for specific groups of people. See the Ask Your Doctor box for questions to ask about supplements. You can track information about your supplements and medications using a chart found at [go.usa.gov/xeavw](http://go.usa.gov/xeavw).

“It’s also important to know the total amount of nutrients you’re getting from both food and different supplements,” Haggans says. “More is not necessarily better, and natural doesn’t necessarily mean safe.”

Many nutrients can be dangerous in large amounts. These have what’s called an upper intake level. Regularly getting more than that level can lead to serious health problems. Vitamins and minerals with an upper limit include calcium, iron, zinc, and vitamins A, B6, C, and D.

Manufacturers aren’t required to keep their products below these upper limits, Haggans explains. So check the labels before you buy. And some nutrients, like vitamin K, can interact with common medications.

Other types of dietary supple-

ments, such as botanicals, can be even more complicated. Botanicals are also known as herbal supplements. They contain one or more parts of a plant. Examples include ginseng, echinacea, and St. John’s wort. Botanicals can come in many forms, such as capsules, dried teas, or liquid preparations.

Botanical products can vary in their ingredients from brand to brand. So their effects in the body can vary. “They can also interact with medications and have side effects,” says Haggans.

Some botanical products may come with health claims that go too far, says Dr. Ikhlas Khan, an NIH-funded natural products researcher at the University of Mississippi. Examples include helping you “sleep better” or “lose weight.”

“If you’re looking for a cure, you shouldn’t be looking in the supplement aisle,” he says.

### **Boosting Your Immune System** •

Perhaps the most common claim for supplements is that they boost your immune system. Researchers have been studying whether any can help.

“Many nutrients, like vitamin C, vitamin D, vitamin E, zinc, selenium, and magnesium are important for a healthy immune system,” Haggerty says. But so far, getting more than the recommended amount of any nutrient doesn’t appear to boost the immune system.

Researchers are testing whether certain supplements can lessen COVID-19 symptoms. “But so far, the data are insufficient to support recommendations for or against any vitamin, mineral, or botanical product to prevent or treat COVID-19,” Haggerty says.

Scientists are also looking at supplements for other viruses. Khan and colleagues are studying a botanical extract made from a type of algae, called spirulina. Studies in mice



## Ask Your Doctor

Before taking a supplement, ask:

- Can this supplement help with my health concern? If so, how much should I take?
- Does this supplement have any harms associated with it? What side effects should I look for?
- Could this supplement interact with my prescription medications? What about over-the-counter medications?
- How do I know whether a supplement contains what it says it does? Can you recommend a brand to take?



have shown that compounds in it may increase the immune response and protect against viral infection. The team wants to test whether it can be used to protect against the flu.

But a challenge with botanical supplements is that they can vary from bottle to bottle, Khan explains. So the team must first fully characterize the product before they can test it in clinical trials.

You might wonder: If supplements aren’t the answer, what can you do to boost your immune system right now? “The most important thing is to eat a nutritious variety of foods and maintain a healthy weight,” Haggerty says. Obesity can weaken your immune system.

It’s also important to get regular physical activity, enough sleep, and to minimize stress. Don’t smoke. If you drink alcohol, do so in moderation. Keep up with your vaccines. And wash your hands to lower your chances of getting sick.

“These are all things we can do on a daily basis to keep our immune system healthy,” Haggerty says. ■

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**Web Links**

For more about dietary supplements, see “Links” in the online article: [newsinhealth.nih.gov/2021/12/do-you-need-dietary-supplements](http://newsinhealth.nih.gov/2021/12/do-you-need-dietary-supplements)

# Taking on Teeth Grinding and Clenching

## Halt Dental Damage and Jaw Pain

Do you wake up with a tired or sore jaw in the morning? It could be a sign that you're grinding or clenching your teeth at night. Over time, this can damage your teeth and lead to jaw problems. It can cause teeth to crack, loosen, and even fall out.

Teeth grinding and clenching—also called bruxism—can cause serious issues if left untreated. And people aren't always aware that they're doing it.

"Someone may not know they grind their teeth at night until they're told by a bedtime partner," explains Dr. Dena Fischer, a dental health expert at NIH.

You can grind your teeth during the daytime, too—although clenching your jaw is more common. Some experts think of daytime and nighttime bruxism as separate conditions. They may have different causes.

Your dentist may spot the tell-tale signs of teeth grinding and clenching. These can include wear and early cracks on the outer layer of the tooth. Teeth grinding and clenching can cause a dull headache

or tired jaw muscles. Often, nighttime teeth grinding isn't diagnosed until there are significant symptoms.

Teeth grinding and clenching while awake is easier to recognize. It's thought to be caused by stress and anxiety. Some people may also grind or clench their teeth while deep in concentration. Once you realize that you're doing it, it's important to figure out when and why.

Situations that are stressful or frustrating can trigger the behavior. "People often mention that they grind or clench their teeth while driving in traffic," Fischer says.

How do you treat bruxism? Fischer helps patients by having them set reminders to check their habits. People who grind or clench their teeth during traffic may find it helpful to put a sticky note on the wheel reminding them to relax their jaw. Setting an alarm to go off regularly at your desk can help if you tend to clench your teeth while deep in thought.

"An alarm or sticky note can be used as a reminder to make sure that your teeth are apart," Fischer says. "Tell yourself 'lips apart and teeth apart' to help make sure clenching isn't occurring."

Activities that reduce stress, like yoga and meditation, may help lessen daytime teeth clenching. Counseling can help you learn to manage intense emotions, which may also ease the habit.

If these strategies don't help, you may consider wearing a plastic mouthguard while awake. Fischer says that a "boil and bite" mouthguard from a store may be enough to stop the problem.



Teeth grinding and clenching at night are usually treated with a mouthguard as well. A dentist can make you a custom fitted guard to protect your teeth. You also may need to be tested for sleep disorders.

Researchers are examining if issues like sleep apnea, which cause people to stop breathing, contribute to nighttime teeth grinding. They're looking at whether brain activity and sleep stages are linked to sleep bruxism.

If you think you may be grinding or clenching your teeth, talk to a dentist. They can evaluate your mouth and recommend treatments.

Sometimes dentists will recommend reshaping the surfaces of your teeth to change your bite. But Fischer advises against approaches that permanently alter your teeth. She says to seek a second opinion and try less invasive treatment options first.

For more tips to help stop teeth grinding and clenching, see the Wise Choices box. ■



### Wise Choices

#### Easing Teeth Grinding and Clenching

- Try to reduce your daily stress and use relaxation techniques.
- Practice good sleep habits. Seek treatment for sleep problems.
- Apply ice or wet heat to sore jaw muscles.
- Avoid eating hard or dense foods. Don't chew gum.
- Find ways to relax your face and jaw muscles throughout the day. The goal is to make facial relaxation a habit.
- Schedule regular dental exams. Your dentist can spot early signs of teeth grinding.



### Web Links

For more about teeth grinding and clenching, see "Links" in the online article: [newsinhealth.nih.gov/2021/12/taking-teeth-grinding-clenching](https://newsinhealth.nih.gov/2021/12/taking-teeth-grinding-clenching)



## Health Capsules

For links to more information, please visit our website and see these stories online.

### A Better Test for Kidney Disease

More than 37 million people in the U.S. are living with chronic kidney disease, or CKD. In this condition, the kidneys can't filter blood the way they should. CKD may eventually lead to kidney failure.

The most common blood test for CKD measures a protein called creatinine. Doctors use the amount of creatinine to estimate kidney function. This can affect the timing of treatments. Delaying treatment may lead to worse kidney health outcomes.

Black Americans generally have higher amounts of creatinine. The

reasons for this aren't understood. Formulas for kidney function take these differences into account. This helps improve the accuracy of the test for Black Americans.

However, there's a lot of diversity among self-reported racial groups, which are not based on biology. Race encompasses broad groups of people with different backgrounds and ancestry. Using race in kidney function formulas can lead to inaccurate classification for some people with CKD.

Researchers looked at whether they could use a different protein to estimate kidney function, cystatin

C. This protein showed similar levels in nonblack and Black study participants. The study found that using cystatin C levels to estimate kidney function improved accuracy when race was not included.

The addition of cystatin C may help reduce racial bias and errors in classifying chronic kidney disease.

"An accurate kidney function formula that does not rely on self-reported race is a huge leap forward for all people with, and at risk for, chronic kidney disease," says NIDDK Director Dr. Griffin P. Rodgers. ■

### Do Detox Diets and Cleanses Work?

Are you thinking of trying a "detox" or cleanse? They claim to help you lose weight or rid your body of toxins. After a winter of holiday eating, they might seem like a way to kickstart better habits in the new year. But are these trendy programs and products healthy or just a bunch of hype?

"Detoxes" aren't all the same. Some involve fasting, followed by eating only certain foods. You may be limited to drinking only juices or liquids. Some include dietary supplements or

herbs. They can involve cleansing the colon, or lower intestinal tract, with enemas and laxatives.

Are they effective? There aren't many high-quality studies of detox programs and cleanses. In 2015, a team of experts concluded that results so far don't support the use of detox diets for weight loss or removing toxins. Another group found that juicing and "detox" diets are probably just a short-term fix. There may be early weight loss because you start

out consuming fewer calories. But detox diets tend to lead to weight gain once you resume a normal diet.

Detox diets can also have risks. The FDA has charged several companies for selling detox/cleansing products that contain harmful ingredients. Talk with your health care provider if you're planning on starting a detox diet or cleanse to make sure it's safe. Learn more at [www.nccih.nih.gov/health/detoxes-and-cleanses-what-you-need-to-know](http://www.nccih.nih.gov/health/detoxes-and-cleanses-what-you-need-to-know). ■



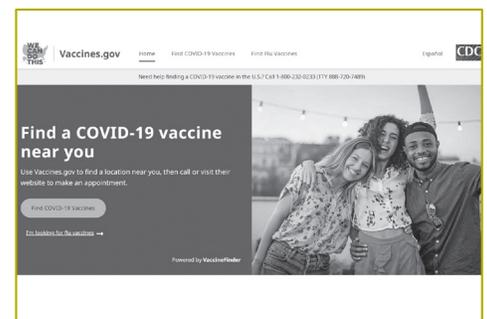
### Featured Website

Vaccines.gov

[vaccines.gov](http://vaccines.gov)

Do you need help finding a flu or COVID-19 vaccine? Vaccines.gov can help find vaccines near you. Use the search tool to find sites

nearby or call 1-800-232-0233. Getting vaccinated is one of the best ways to protect yourself and your family.



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