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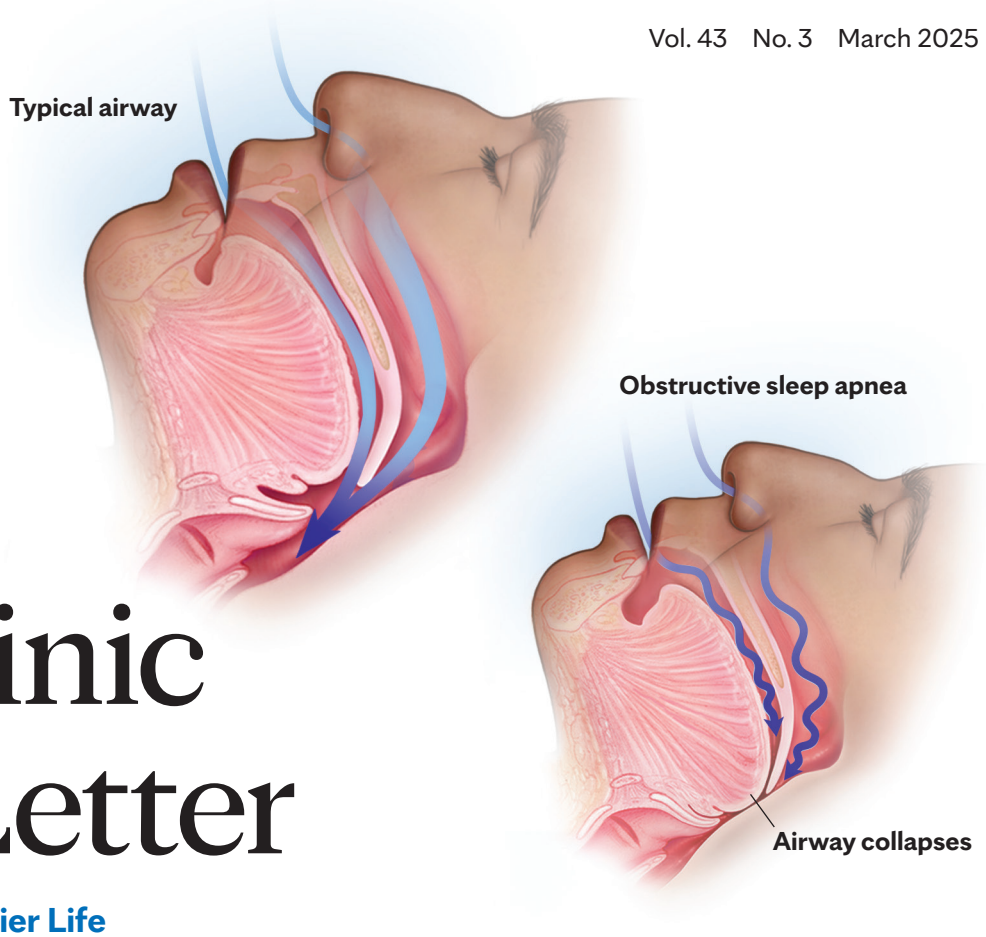


Mayo Clinic Health Letter

Reliable Information for a Healthier Life

Sleep apnea

Say goodnight to snoring and unsteady sleep

John Bishop was visiting his cardiologist to discuss his high blood pressure. During the visit, he mentioned his wife commenting on his snoring. The cardiologist suggested he do an overnight sleep test, which revealed startling results: He averaged 52 pauses in breathing an hour, a notably high number. His blood oxygen levels had dipped as low as 82% during the night. In this test, values under 90% are considered low.

John was diagnosed with obstructive sleep apnea. The condition affects an estimated 15% of older adults and occurs more commonly in those who, like John, have other cardiovascular conditions or are overweight. The sleep specialist prescribed a continuous positive airway pressure (CPAP) device.

Eventually, John found a CPAP mask that worked and was comfortable to wear all night. The mask, plus significant weight loss thanks to changed diet and exercise routines, caused a dramatic improvement in both his blood pressure and his energy levels.

Sleep, interrupted

If you have sleep apnea, you likely feel sleepy or fatigued during the day, especially after lunch, while driving or during periods of inactivity. You may wake up in the morning with a headache and feel mentally dull, with a sense that your sleep wasn't refreshing. Other symptoms include high blood pressure, irritability, insomnia, decreased sex drive, irregular heartbeats and dry mouth.

During sleep, the muscles in the back of the throat relax. These muscles keep the airway open by providing support to structures in the mouth and throat, such as the small, teardrop-shaped tissue at

With obstructive sleep apnea, structures at the back of the throat collapse inward and obstruct airflow. With a continuous positive air pressure (CPAP) device, a mask is used to gently increase the pressure of the air you breathe. The pressure is just enough to keep your upper airway passages open, preventing apnea and snoring.

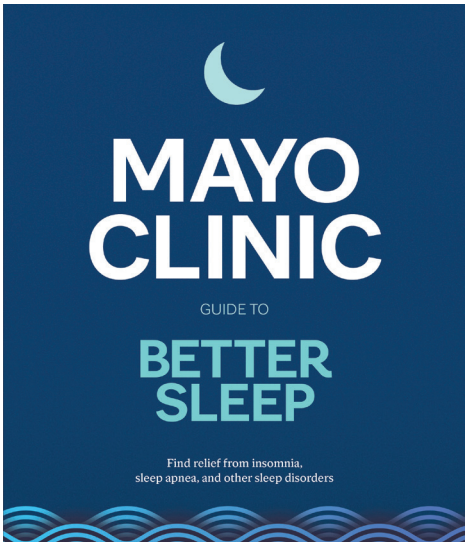
the back of the throat (uvula), the soft palate, the tonsils and the tongue.

With obstructive sleep apnea, these structures collapse and obstruct airflow. Obstruction of airflow leads to lower oxygen levels in your blood. After 10 to 30 seconds of insufficient exchange of air, your brain senses the problem and rouses you to a lighter level of sleep or brief wakefulness. The muscles then regain their usual tone, the obstruction is relieved — possibly with a snort — and you resume breathing. This temporary stop in breathing is called apnea.

This pattern can repeat itself dozens to hundreds of times each night, though many with sleep apnea aren't aware of these interruptions and think they sleep well. The repetitive obstructions prevent you from reaching the deep, restorative phases of sleep and lead to tiredness during the day.

Obstructive sleep apnea can happen to anyone and at any age. However, it's diagnosed more often in people who are overweight and in men. The condition also becomes more common in women after menopause.

Untreated obstructive sleep apnea can lead to other challenges, including with your weight and your mood.



Read much more in Mayo Clinic Guide to Better Sleep, *a book now available from Mayo Clinic Press. For more information, visit* MCPress.MayoClinic.org.

One of the more serious consequences of daytime sleepiness is an increased risk of accidents while driving or at work. In addition, trouble concentrating and lack of energy can challenge your productivity and relationships.

The drops in blood oxygen levels that occur with apnea also lead to increased blood pressure and strain on the cardiovascular system. Obstructive sleep apnea has been linked to high blood pressure, coronary artery disease, heart attack, heart failure, heart rate changes, stroke, blood clots and diabetes.

Do not ignore the snore

See your healthcare team if you or a bed partner has noticed any of these symptoms:

- Pauses in breathing during sleep.
- Snoring that's loud enough to disturb another person's sleep or wake you up from sleep.
- Excessive daytime drowsiness, which may cause you to fall asleep while you're working, watching television or driving.

Sometimes testing for sleep apnea can be performed in your home. But a study in a sleep clinic is often needed to confirm and optimize treatment for obstructive sleep apnea. Because treatments for sleep disorders differ, it's important to obtain an accurate diagnosis and fully understand your sleep condition.

Self-care staples

Some lifestyle measures may help keep your airway open during sleep. Try these tips:

- *Change your sleep position* — Sleeping on your back can cause your tongue and soft palate to rest against the back of your throat and block your airway. To stop yourself from sleeping on your back, try sewing a pocket or sock on the back of your pajamas and placing a tennis ball inside. There also are commercially available devices and specially shaped pillows to help prevent you from sleeping on your back.
- *Avoid triggers* — Alcohol, sedatives and sleeping pills further relax the muscles in the back of the throat and can make sleep apnea worse.
- *Move more, weigh less* — Even small reductions in excess weight, when maintained, can produce long-lasting improvements in sleep apnea, blood pressure and quality of life. Regular exercise improves sleep apnea as well as quality of sleep.

Masking and more

Often, self-care measures alone don't provide adequate relief for sleep apnea. Your healthcare team likely will encourage you to try other treatments.

Mayo Clinic Health Letter

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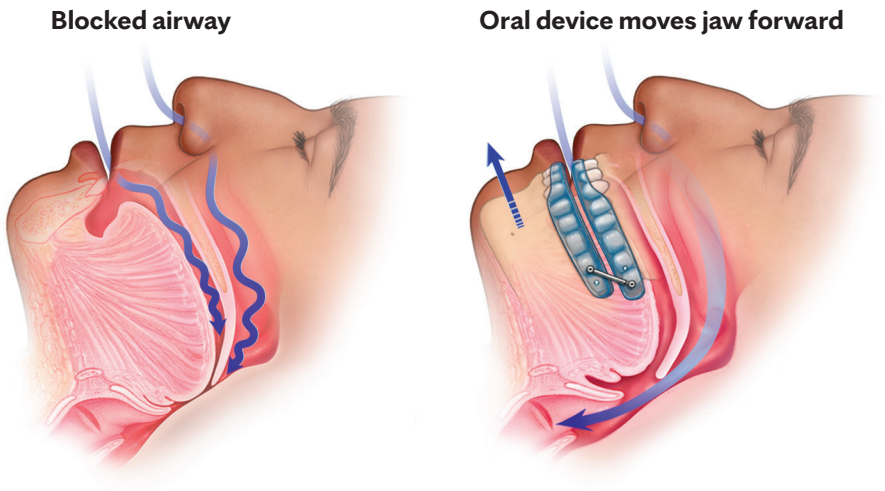


A dental appliance worn at night is one option to treat mild to moderate obstructive sleep apnea. The appliance is designed to open your throat by bringing your jaw slightly forward or holding your tongue forward.

Positive airway pressure

This is generally the first-line treatment for obstructive sleep apnea. The most studied, reliable device is one that applies continuous positive airway pressure (CPAP) through a mask you put over your nose. The mask is connected to a machine that increases the pressure of the air you breathe. The pressure is just enough to keep your upper airway passages open, preventing apnea events.

This form of treatment can cut out snoring, dramatically improve the quality of your sleep, eliminate excessive daytime sleepiness and may help lower your blood pressure. Many different types of masks are available. Some styles don't cover the nose or mouth, but rather sit under your nose or use soft prongs that go into the nostrils.

With a little experimenting — and by working with a sleep care specialist — most people find a CPAP mask that provides a comfortable and secure fit. Once a suitable mask is found, most people appreciate how much better they feel when they use it. CPAP devices have a variety of comfort features, which can reduce the pressure as you exhale, as well as warm and moisten the air for comfort. Some units provide adjustable levels of pressure.

Oral appliances

For mild to moderate obstructive sleep apnea, wearing a dental appliance designed to open your throat by bringing your jaw and tongue slightly forward at night may be an option. The oral appliances need to be worn every night. Still, regular follow-up with your sleep care specialist and dentist is important to ensure that you're getting the right kind of therapy.

Medication

In late 2024, the Food and Drug Administration approved tirzepatide (Zepbound) as the first prescription medication to treat obstructive sleep apnea. The drug is indicated for people with obesity in addition to moderate to severe sleep apnea.

Surgery

If a CPAP machine isn't right for you and you don't benefit from other treatments, your care team may recommend surgery to keep your airway open or increase the size of your airway. Several procedures are available, including removing some of the soft tissues at the back of the throat, repositioning the jaw or implanting an electronic device that stimulates the nerves that keep your airway open. Work with your care team to decide which procedure is right for you. ■

HEALTH TIPS

BURSTS TO BOOST WORKOUTS

All forms of exercise benefit your health. However, how you exercise can affect how quickly you reap the rewards. One type of workout, in which you do a series of high-intensity interval "bursts," can provide the same cardiovascular benefits as steady, lower intensity training in much less time. Here are ways to integrate these bursts into your life:

- *Make daily life a workout* — When you're an observer on a video call, turn off your camera and do five sets of squats or jumping jacks, with a one-minute rest between sets. Or do a brisk walk up some flights of stairs instead of using the elevator. Try to integrate bursts of activity often into everyday tasks.
- *HIIT the high notes* — With high-intensity interval training (HIIT), the aim is to do a series of intense bursts that make your heart rate soar to about 80% to 90% of your maximum heart rate. On a simple level, you can do this while walking — walk quickly or run the distance between two light poles, then back off the pace for two light poles, then burst again. Keep up this rhythm for at least 10 minutes.
- *Rev your engine* — Tabata is a HIIT workout with shorter bursts of even higher intensity. Try pedaling your bike as fast as you can go for 20 seconds, then rest for 10 seconds, and then go all out for another 20. Aim for eight repetitions.
- *Work up to longer bursts* — After building your workout length, you might try Norwegian 4×4 interval training. This involves working hard for four minutes, followed by three minutes of low-intensity movement. Repeat four times.

Always warm up for 5 to 10 minutes at an easy pace. Afterward, cool down for 5 to 10 minutes at an easy pace, and then stretch. Drink plenty of fluids before, during and after. ■

Fatigue

Home remedies that help

After a trip, a long day with grandkids or the occasional late night, it's common to feel tired or a bit sluggish. But fatigue — constant exhaustion, tiredness, and a lack of physical and mental energy — often needs more than just a good night's sleep to resolve.

Older adults experience fatigue at much higher rates than other age groups. Research has found that up to 50% of older adults report fatigue, versus just 10% to 25% for the general population. Often, fatigue is seen as an inevitable part of aging — but this shouldn't be the case, according to Chris Aakre, M.D., a fatigue specialist at Mayo Clinic in Rochester, Minnesota.

"Fatigue at any age is not normal. There are plenty of 65-year-olds out there who do not have any active, ongoing fatigue," says Dr. Aakre. "When fatigue is preventing you from doing things you want to do, then it is something to take seriously."

Fatigue may indicate that a more serious mental or physical illness is taking its toll on you. Research has shown that up to 74% of older adults with a chronic illness report fatigue — and this exhaustion can have a trickle-down effect on motivation, memory and mood, as well as physical function and social connectedness. Even in people without any underlying illness, tiredness can make day-to-day life harder and less enjoyable.

Home remedies and lifestyle adjustments can help address your fatigue and build healthier habits. But the only sure way to relieve fatigue is by addressing underlying factors. "If you're experiencing consistent fatigue, my one takeaway is to have a talk with your healthcare team to try to discover the root cause," says Dr. Aakre.

How fatigue shows up

Though it may sound obvious, there are many different types of tiredness. "Fatigue is very context specific — when it happens, what it feels like, what you are doing before or while the fatigue sets in, whether you have any accompanying symptoms, and how quickly you can recover all make a difference," says Dr. Aakre. Taking the time to think about your symptoms, lifestyle and emotional state may help you determine why you feel so tired.

To start, think about how you would describe your fatigue. Do you struggle to stay awake during the day or doze off accidentally on the couch? Do you struggle to wake up in the morning? If this sounds familiar, your fatigue may be related to a sleep-related condition, such as insomnia, sleep apnea or restless legs syndrome.

"You also should consider when fatigue happens," says Dr. Aakre. "If you wake up in the morning and feel tired as soon as you get out of bed, you may be getting ineffective sleep. If you wake up feeling great and get more and more fatigued as the day goes on, that points to different causes."

It's also possible you don't feel sleepy at all — you are simply running on empty. A lack of energy could be related to a number of conditions such as depression, heart disease, diabetes, thyroid problems or long COVID.

Lifestyle factors including diet and exercise can play a role in energy as well. Vitamin deficiencies and anemia can cause fatigue.

Fatigue also may be related to emotional exhaustion, burnout or your mental health. Have you recently lost a loved one? Are you going through financial issues or unexpected life changes? Are you feeling restless or unfulfilled after retirement or an empty nest? These emotional events may be related to your fatigue. Other signs may include loss of appetite, forgetfulness, feelings of boredom, a lack of motivation or loneliness.

Talking about your fatigue can help you and your care team determine an effective treatment plan.

What you can do at home

As you and your care team work to determine causes for your fatigue, you can set yourself up for success at home by incorporating healthy habits.

- *Commit to your sleep schedule* — You may have heard that older adults need less sleep than younger people, but this isn't true. Most adults need at least seven hours a night. Good sleep habits set the stage for quality rest. Avoid screens at least an hour before bed and sleep in a dark, cool room with a sleep mask or blackout curtains. Avoid overly sugary or spicy foods and alcohol before bed. It's also helpful to keep a consistent sleeping schedule by waking and going to bed at the same time every day.
- *Get movement every day* — Exercise can actually give you more energy. "For some people, the reason they experience fatigue throughout the day is because it's been too long since they've stressed their muscles. After time, the muscles themselves become deconditioned; they're not using energy efficiently," says Dr. Aakre. A regular exercise routine can help build muscle strength and endurance and can reduce overall fatigue. Be careful not to overdo it. Instead, focus on the activities you enjoy or that fit into your lifestyle, such as walking and lifting light weights.

YOUR MEDICINES: A CAUSE OF FATIGUE?

According to Mayo Clinic experts, another common — but often overlooked — reason for fatigue is taking multiple medicines. Sometimes, drugs or supplements taken to treat a condition can have fatigue as a side effect. Or a drug that was tolerated well initially may later have side effects when other medications or supplements are added. It's important to review your medication and supplement list with your care team or pharmacist to consider whether something there is contributing to your fatigue.

Research suggests that yoga, qigong and tai chi may be especially effective in reducing fatigue. If you find that exercise actively makes your symptoms worse, however, it's important to have this evaluated by your care team.

- *Consider supplements* — Certain herbs and supplements may help manage fatigue. Ginseng is thought to have energizing effects. In particular, Mayo Clinic research has found that both American and Asian varieties of ginseng help reduce cancer-related fatigue. Melatonin supplements for sleep have become increasingly popular in recent years. However, the American Academy of Sleep Medicine does not recommend taking melatonin supplements for chronic insomnia. If you have a vitamin deficiency, the appropriate supplement can help restore your levels and potentially your energy. However, it's important to note that supplements, herbs and vitamins are not well regulated by the Food and Drug Administration. Consult with your care team before taking any supplements, as they may interact with medications or cause side effects.
- *Try aromatherapy* — A small study of adults over age 60 found that smelling lavender essential oil before bed naturally boosted levels of melatonin, an important hormone for sleep. Other studies have found that aromatherapy can be a helpful treatment for insomnia.
- *Incorporate meditation* — Emotion regulation can help soothe your nervous system and encourage meaningful rest. "Addressing underlying stressors and anxiousness can help reduce fatigue," says Dr. Aakre. "I often will recommend going on YouTube and moving through a guided breathing or visualization exercise. When multiple senses are occupied, you tend to have more engagement and less distraction."

Remember — getting older doesn't mean you have to grin and bear it. Talk to your care team about your fatigue and emphasize healthy habits at home. ■

NEWS AND OUR VIEWS

MANAGING DIABETES MAY REDUCE DEMENTIA RISK

People with diabetes are more likely to develop dementia for many reasons, though not all are fully understood. But can you lower your dementia risk if your diabetes is well controlled? A recent study suggests that the answer is yes.

Researchers looked at health records of about 374,000 U.S. military veterans. All were at least 65 years old and had type 2 diabetes. Over a three-year period, participants had a hemoglobin A1C test, a measure of longer-term glucose control, at least four times. Specifically, an A1C test measures what percentage of hemoglobin proteins in the blood are coated with sugar and estimates an average blood sugar level for the past 2 to 3 months. A higher A1C level indicates higher blood sugar levels and less control of diabetes.

Participants who stayed at healthy A1C levels for longer periods were significantly less likely to be diagnosed with dementia. Those with the most readings outside of the target range had the highest likelihood of developing dementia.

Mayo Clinic experts say that the study's results further support the importance of sticking to lifestyle and medication routines that keep you within your target hemoglobin A1C range. Your brain health may be another motivator to work with your care team to manage your diabetes effectively. ■

AI'S PROMISE FOR RARE DISEASES

Developing effective therapies for rare diseases is challenging. That's because the small number of people with a particular rare disease limits the ability to do large-scale studies and can make it difficult to secure research funding. Of the approximately 8,000 rare diseases, up to 90% have no specific treatment. Mayo Clinic experts are addressing the research gap with new tools enhanced by artificial intelligence (AI), using this emerging technology to tailor treatments based on a person's individual genetic profile.

Treatment for a rare disease typically relies on understanding the disease's cause. Since several rare diseases involve changes in function within a single gene, the ability to sort through genetic information is especially important. This detective work has been made more possible with AI. The technology allows researchers to sort through vast amounts of genetic information very quickly and identify possible genetic changes, known as variants, that contribute to the disease. Breakthroughs in genome-sensing technologies have improved the speed and accuracy of that work.

Mayo Clinic researchers also are using AI to search for or create treatments that attack or change the behavior of genetic variants. One example is a medicine strategy that can be tailored to a single person each time. The approach, called antisense oligonucleotide therapy, uses custom-made ribonucleic acid (RNA). This is a molecule found in all living cells and viruses that serves as the messenger between cells. Treatments in development use the lab-created RNA to shut down or fix faulty genes without altering DNA — the chemical database that carries instructions for your cells' functions.

Drugs that include some form of an antisense oligonucleotide are already approved for some diseases. Mayo Clinic researchers are testing drugs with similar makeups for a variety of rare diseases. One focus is on treating adult-onset autosomal dominant demyelinating leukodystrophy (ADLD), a disease that affects the central nervous system and can be deadly. This is one of many rare diseases that may eventually have a treatment. Research continues, aided by AI technology and a renewed sense of hope. ■

Surgical treatments for COPD

Options for better breathing

When was the last time you had to think about breathing? For most people, inhaling and exhaling is second nature. But for those living with chronic obstructive pulmonary disease (COPD), breathing isn't something to take for granted.

COPD describes a group of progressive lung diseases that includes emphysema and chronic bronchitis. As the name implies, COPD obstructs airflow — making it more difficult to exhale and often causing breathlessness, especially during physical activity. As a result, you may have difficulty completing or enjoying daily tasks and can experience symptoms such as wheezing, chest tightness, a rounded chest shape (barrel chest) and chronic cough.

COPD is typically caused by long-term exposure to harmful chemicals or fumes. Smoking is the leading cause of COPD. Rarely, however, emphysema is caused by an inherited protein deficiency — alpha-1-antitrypsin (AAT) deficiency — or it may occur in some forms of systemic autoimmune conditions.

Numerous management strategies exist for COPD, including inhalers and oxygen therapy. For many years doctors thought there were no viable surgical ways to treat COPD, says Mayo Clinic thoracic surgeon Stephen Cassivi, M.D. However, effective surgical options have recently emerged.

Procedure options

There are four main surgical options for COPD. Determining whether you are a good fit for surgery depends on a number of factors, including your age and overall fitness level, your type of COPD and its progression, the severity of your symptoms, and the effectiveness of lifestyle interventions, medications and nonsurgical treatment options you've tried.

Lung volume reduction surgery

With emphysema, the lungs commonly become hyperexpanded, and these overinflated portions compress healthier parts of the lungs, making it hard to breathe. In lung volume reduction surgery, the nonfunctioning parts are removed, allowing healthier portions more room to expand and function. Imagine your lungs as a tree in a glass jar. With emphysema, the lower portions of the tree are compressed and crowded by the damaged upper portions. "The idea is that we are pruning the tree," says Dr. Cassivi.

Lung volume reduction can help some people live better and longer with COPD — but it isn't a cure. This surgery works best for people who have distinct areas of lung damage rather than spread-out (diffuse) damage.

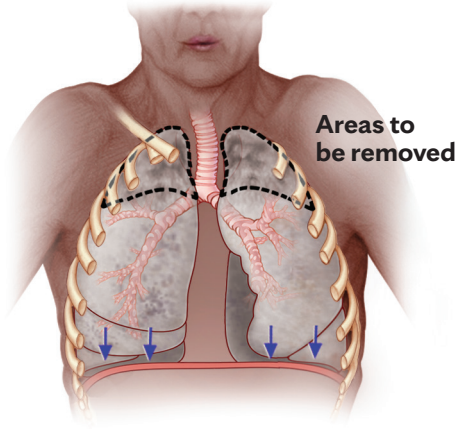
Endobronchial valve surgery

This surgery, sometimes called endoscopic lung volume reduction, also focuses on decreasing the lungs' size to improve breathing. A slender scope inserted through the mouth is used to place small endobronchial valves in the overinflated lobes of the lungs. These valves help trapped air to leave the lungs and, over time, the damaged portion deflates. This procedure also allows the healthier portion of the lung more room to expand and function.

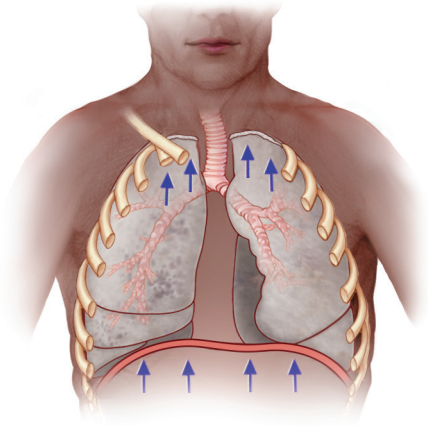
Both lung volume reduction and endobronchial valve surgeries are considered minimally invasive. This means that these procedures are easier on the body, require less time in the hospital and are linked to less pain when compared with open surgeries.

Bullectomy

COPD can damage small air sacs (alveoli) in the lungs. Over time, the lungs may be left with large pockets of air rather than clusters of alveoli. These air pockets, called bullae, can trap old air in the lungs, compress portions of the lungs and affect breathing. A bullectomy is a type of surgery that removes the bullae to improve lung function and airflow.



Damaged, overinflated areas of lung press down on the diaphragm, making it hard to breathe.



Lung volume reduction surgery allows less damaged portions of the lungs more room to expand and function.

Bullectomy may be performed as an open surgery or as a minimally invasive procedure. One type of less invasive procedure, called video-assisted thoracoscopic surgery (VATS), involves one or more small incisions in the chest. A small camera is temporarily inserted into the chest to guide the surgery.

Lung transplant

Finally, some people may be eligible for a lung transplant. "With a transplant, we take out the damaged lungs and replace them with healthier lungs," says Dr. Cassivi. "In general, transplant is a very good treatment for emphysema in those who qualify." However, the procedure comes with important considerations,

CARE BEFORE AND AFTER LUNG SURGERY

Before surgery, your healthcare team will likely help you develop a plan to quit smoking — which can help you better prepare for and recover from surgery.

Postoperative care is a critical part of any procedure's success. In particular, your care team may recommend pulmonary rehabilitation. This may involve structured exercise, specialized breathing techniques, oxygen therapy, medication, and behavior and nutrition changes. Pulmonary rehabilitation can improve COPD symptoms, exercise capacity and overall well-being both before and after lung volume reduction surgery and lung transplant.

Pulmonary rehabilitation programs are typically provided in the hospital and in an outpatient clinic and sometimes may be continued at home. Your exact regimen depends on your condition and needs, but most programs involve multiple supervised sessions a week and last 6 to 10 weeks.

such as the potential for serious complications and the need for lifelong medications that suppress the immune system to decrease the risk of organ rejection. A transplant is a major surgery with notable risks. But for some people it's the best option to make breathing easier and improve quality of life.

Living better with COPD

If you have COPD and are having trouble breathing, reach out to your healthcare team to discuss your options. Living with COPD doesn't mean you have to accept breathing difficulty or discomfort as an inevitable part of getting older. "More and more, there are treatments to keep you feeling better for longer," says Dr. Cassivi. ■

Saturated fats

Moderation is key

For decades, saturated fats have been a dietary no-no. These fats often come from animal sources, including red meat, processed meat, and full-fat dairy products such as butter and yogurt. Saturated fats can raise your low-density lipoprotein (LDL) cholesterol level — your "bad" cholesterol — as well as your total cholesterol.

Healthcare professionals encourage limiting the calories you get from saturated fat. The Dietary Guidelines for Americans recommend limiting saturated fat to 10% or less of your daily calories. The American Heart Association suggests that no more than 6% of your daily calories come from saturated fats.

However, recent years have brought a new look at saturated fat's risks and potential benefits, with vigorous discussion among health and wellness experts about its role in a well-rounded diet. Some suggest the once-forbidden foods containing these fats may be beneficial in moderate amounts as sources of protein, iron and other nutrients.

Reconsidering earlier findings

The consensus that eating foods with high levels of saturated fats caused heart disease was based in large studies first conducted in the 1960s and 1970s. The findings have influenced health policy, medical recommendations and personal dietary choices ever since. One example was the widespread move away from butter in favor of oil-based synthetic replacements such as margarine that lack saturated fat.

In recent decades, however, researchers have taken a fresh look at those early studies and raised some questions. Critics of the studies argue that while the results show that diets low in saturated fats generally lead to lower levels of unhealthy cholesterol, they don't prove a cause-and-effect relationship between higher levels of saturated fats and heart disease. Additionally, some of the studies left out some key details and included undisclosed conflicts of interest.

Newer research in the U.S. and other countries suggests that full-fat milk, cheese and yogurt may not have the negative effects on heart or vascular health that they were previously thought to have.

Choose wisely

People with heart disease, high cholesterol and other associated risk factors should follow their healthcare teams' advice when it comes to saturated fats. Those without such conditions may be able to enjoy some dairy foods as part of a heart-healthy diet and lifestyle. But how?

Fermented dairy foods such as yogurt and kefir are high in saturated fats, but those not loaded with added sugar provide dietary benefits. They have live, active cultures that may support healthy gut bacteria. These "good" bacteria help improve some cardiovascular risk factors, lower blood glucose and regulate insulin levels. Even less nutritious foods heavy in saturated fats — ice cream, french fries, bacon — may have a place in your diet, provided you reserve them as special treats rather than daily staples.

In addition, remember that saturated fats are just one component of your all-around diet. In general, eat plenty of fruits, vegetables, whole grains, and lean proteins such as chicken and fish. Eat fried foods rarely or not at all. Use healthy, unhydrogenated oils for cooking, such as canola, safflower, sunflower or olive oil. ■

Second opinion

Q Years ago, I got a tattoo. Now I wish I hadn't. Can my tattoo be removed safely? I've heard the process can be quite painful.

A If you're wishing you had done a little more thinking before inking, you're not alone. Or perhaps your tattoo was meaningful in another phase of life but is now unwanted. As more Americans get tattoos — about 32% of adults have one — regrets are growing: Among people with tattoos, 18% to 30% say they wish they hadn't gotten them.

A tattoo is meant to be permanent. The ink is placed beneath the surface of your skin, in the second skin layer called the dermis, so it doesn't disappear with the normal shedding of skin cells. But that also makes the ink more complicated to remove.

Still, there are ways to lighten and, in some cases, remove an unwanted tattoo. The first step is to talk to a dermatologist or other skin care professional about whether you're a good candidate for tattoo removal. The size, color and location of your tattoo, as well as your skin color, all affect the outcome. The skin care professional also can help you understand what's involved and what to expect. This can include possible side effects such as scarring or discoloration of the skin.

A common way to remove or lighten a tattoo is through laser treatment using Q-switched lasers. These emit a pulse of energy that breaks the tattoo ink into tiny pieces. Over several weeks, your body's immune system eliminates the ink particles.

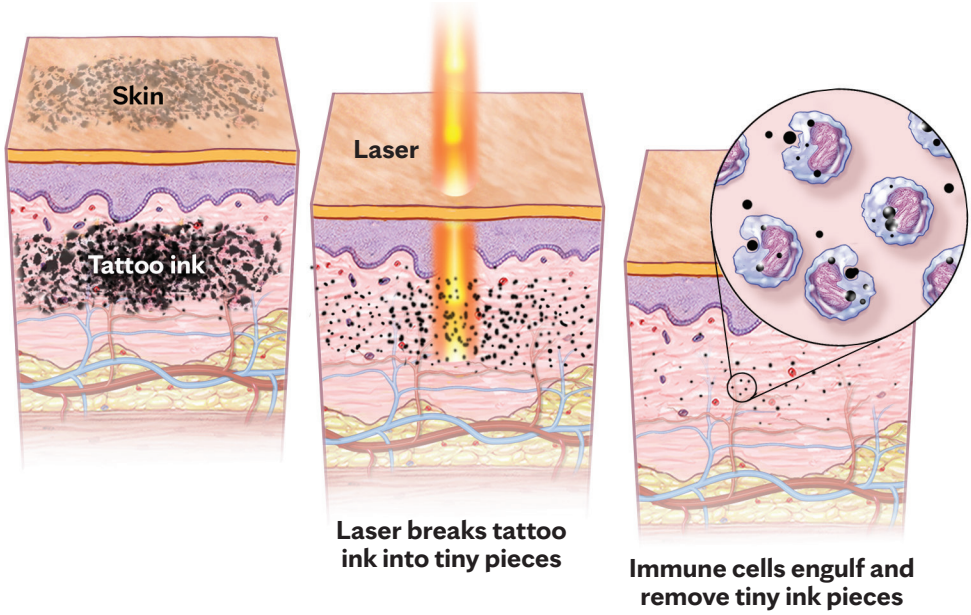
It's true that laser tattoo removal can be somewhat painful. Some liken it to the sensation of snapping a thin rubber band against the skin. If the pain is bothersome, a numbing cream can be applied to the skin beforehand.

After a treatment, the area around your tattoo may be swollen, and your skin may blister or bleed. Several treatments over time may be needed to lighten or remove the tattoo, with a few weeks between treatments for your skin to heal. Often it's not possible to remove all evidence of a tattoo — the skin care professional can provide reasonable expectations. But after repeat sessions, the tattoo may fade to a level you're happy with. Or you might consider covering the remaining tattoo with a different tattoo.

With a multicolored tattoo, you may need treatment with multiple lasers. That's because different colors absorb different energy wavelengths. Dark blue and black inks are easier to remove, while green, red and yellow are harder.

Sometimes there are medical reasons to remove a tattoo — for example, if you have an allergy to the ink or develop a scar over the tattoo. In that situation, your care team would determine the best method to remove the ink.

As for at-home removal kits you may have seen advertised, these are not approved by the Food and Drug Administration. These kits haven't proved to be effective and may sometimes be harmful. ■



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Have a question or comment? We appreciate every letter sent to Second Opinion but cannot publish an answer to each question or respond to requests for consultation on individual medical conditions. Editorial comments can be directed to:

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