

NIH News in Health

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Inside News: 3 Carpal Tunnel Syndrome 4 Alcohol Use 4 Telehealth 4 Asian-Language Resources

Maintain Your Muscle Strength Training at Any Age

You've likely heard that exercise can help you live a longer, healthier life. When you hear the word 'exercise,' you might think of going for a run or hopping on a bicycle. Or maybe playing soccer with your kids or basketball with your friends after work. But these activities don't include all the types of movements that are important for your health.

The examples above are endurance exercise. Also called cardiovascular exercise, activities like these increase your breathing and heart rate. They can keep your heart and lungs in good shape and help prevent many chronic diseases. But exercises to maintain flexibility, balance, and strength are also important.

Stretching gives you more freedom of movement and makes daily activities more comfortable. Balance practice helps prevent falls, which become a concern as you get older.

Strength training, also called resistance training or weight training, is particularly important. It brings many benefits. First, it makes your muscles stronger. That can help you keep up the activities you enjoy—at any stage of your life.

It's not about getting big muscles, explains Dr. Wendy Kohrt, an aging expert at the University of Colorado. In fact, most people who do strength



training don't see much of a change in muscle size.

But at all stages of life, she says, "maintaining muscle mass and muscle function is really important for quality of life."

Building Up Benefits • Building muscle can do more than make you stronger. Some types of strength training keep your bones healthy, too. Strength training can also improve the way your body processes food to help prevent diabetes and related diseases.

"And like endurance activity, regular strength training is associated with lower risk of cardiovascular disease and other chronic diseases," says Dr. Joseph Ciccolo, an exercise researcher at Columbia University.

But the main benefit of strength training, as the name suggests, is that it makes your muscle cells stronger. "That benefit is unique to strength training," says Dr. Roger Fielding, who studies the benefits of exercise at Tufts University.

Experts recommend that children and teens do muscle-strengthening activities at least three days a week. For adults, they encourage strength training for the major muscle groups on two or more days a week.

The benefits of strength training increase as you get older, says Fielding. Maintaining strength is essential for healthy aging.

"Loss of muscle with aging can limit people's ability to function in their home environment and live independently," Kohrt says. "Just being able to get up out of a chair or go up and down stairs requires a fair amount of muscle strength."

In a recent study, Fielding and other researchers tested a three-month weight-lifting program in older adults who already had

continued on page 2

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continued from page 1

difficulty walking. At the end of the study, participants who lifted weights improved at tasks like repeatedly bending their knees. Such movements are essential for activities of daily living. In contrast, study participants who only stretched at home did not see similar improvements in strength.

“As we age, I think it’s even more important to consider incorporating some strength training into our physical activity routines,” says Fielding. “We can either slow down the progression of age-related muscle loss or prevent it.”

Mind and Body • Research is starting to show that strength training isn’t just good for physical health—it can be good for mental health.

Ciccolo is studying the effects of strength training on anxiety, depression, and related conditions. His team recently found that strength training could reduce some symptoms of post-traumatic stress disorder (PTSD) in both women and men.

Endurance exercise may also help people with these problems, says Ciccolo. But some people might be

more interested in strength training than aerobic activity. “We want to get people to engage in activities that they find enjoyable,” he says.

How strength training may benefit mental health is still under study. It might help lower certain hormones in the body associated with stress and depression, Ciccolo explains.

In addition, helping people get stronger may boost self-esteem and their sense of control over their lives. “You can feel that you’re being successful and accomplishing something,” he says.

Ciccolo is currently running a study to see if strength training can help relieve symptoms of depression in African American men.

“There’s huge stigma among black men with respect to counseling for mental illness,” he says. “We’re hoping this could be a nontraditional way to get at depression.”

Getting Started • If you want to get started with strengthening exercises, what should you do? Strength training may seem intimidating if you’ve never tried it.

“People naturally learn to walk as part of growing up. But you don’t necessarily learn how to lift weights,” Ciccolo says.

If it’s feasible for you, booking a few sessions with a personal trainer is a good way to get started, says Kohrt. “That can get you introduced to the types of exercises you could do,” she explains.

There are also many low- or no-cost classes available. Look for them at local gyms, recreation centers, senior centers, and community centers.

Like with any new activity, to make strength training stick, “you have to find something that you really like to do,” says Fielding. “Some people will want to exercise in a group, in a community setting. Others will be happy doing all



Wise Choices

Lifting Weights Safely

Get started building muscle safely by following these tips:

- **Start slowly, especially if you haven’t been active for a long time.** Little by little, build up your activities and how hard you work at them.
- **Pay attention to your body.** Exhaustion, sore joints, or muscle pain mean you’re overdoing it.
- **Use small amounts of weight to start.** Focus on your form, and add more weight slowly, over time.
- **Use smooth, steady movements to lift weights into position.** Don’t jerk or thrust weights.
- **Avoid “locking” your arm and leg joints in a straight position.**
- **Don’t hold your breath during strength exercises.** That could cause changes in your blood pressure. Breathe out as you lift the weights and breathe in as you relax.
- **Ask for help.** To get started, schedule a session or two with a personal trainer, or look for a group class at a local gym, recreation center, or senior center.

their exercises in their home, by themselves.”

If you’ve never lifted weights before, talk with your health care provider before you start any home-based strength training routine.

Whatever you choose to do, “start slowly and build up very gradually,” says Kohrt. See the Wise Choices box for more tips on getting started safely. ■

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Web Links

For more about strength training and an extended Q&A, see “Links” in the online article:
newsinhealth.nih.gov/2020/03/maintain-your-muscle

Finger Numbness

Could It Be Carpal Tunnel Syndrome?

Do you have tingling or numbness in your hand or fingers? It could be a sign that you have carpal tunnel syndrome. Often, you'll get pain in your thumb, index, and middle finger. You may find that your hands are clumsy, and it's harder to grip things.

Symptoms of carpal tunnel usually start slowly. Many people first notice the signs overnight because they sleep with their wrists bent. As time goes on, that tingling or numbness may last through the day as well.

Carpal tunnel syndrome occurs when one of the main nerves in your forearm, called the median nerve, is squeezed or compressed.

"That nerve is really important in the function of the hand," says Dr. Kevin Chung, chief of hand surgery at the University of Michigan. It gives sensation to the palm side of your thumb, index, middle finger, and part of the ring finger. It also moves some of your hand muscles.

"It can become trapped in the very tight space that goes through your wrists," he says. "That space is known as the carpal tunnel."

Carpal tunnel syndrome is usually caused by a combination of factors

that shrink this space. The heavy, repetitive work of certain jobs can contribute to carpal tunnel syndrome. It's common to people who work in meat-packing plants or perform intense assembly line work. Injury to the wrist can also cause swelling that compresses the median nerve.

But it's often unclear why some people develop carpal tunnel syndrome. People who have rheumatoid arthritis or an underactive thyroid gland are more likely to develop carpal tunnel syndrome. Fluid retention during pregnancy or menopause can also contribute.

To treat the issue, doctors will first try splinting the wrist. This limits movement and helps reduce pressure on the nerve. Sometimes splints are only worn at night. During the day, experts recommend taking breaks from tasks that put stress on your hands. Over-the-counter pain relievers can help manage the discomfort.

For more tips that may help relieve carpal tunnel symptoms, see the Wise Choices box. If these steps don't improve the condition, it may be time to turn to surgery.

"Surgery is necessary when the patient has persistent numbness of the hand and when the muscles stop working because the nerve is not functioning well," says Chung.

Carpal tunnel surgery is one of the most common surgeries in the U.S. It involves dividing the ligaments—bands of elastic tissue—



that support the wrist to reduce pressure on the median nerve. These ligaments usually grow back after surgery in a way that gives the nerve more room. The surgery only takes about 10 to 30 minutes.

"Relief can be quite immediate, between one to two weeks," says Chung. "But it depends on how badly the nerve was compressed and for how long."

Some strategies, like stretching your hands and wearing fingerless gloves, may help prevent carpal tunnel syndrome. But research hasn't proven that these approaches work.

Many conditions can mimic carpal tunnel symptoms, so it's important to go to a medical professional with expertise in the condition.

"Carpal tunnel syndrome can be disabling. It is so important that patients choose a surgeon wisely," says Chung. He recommends choosing a board-certified hand surgeon trained to diagnose and treat carpal tunnel. ■



Wise Choices

Carpal Tunnel Relief

These strategies may provide short-term relief from carpal tunnel syndrome:

- Take frequent breaks from repetitive physical activities.
- Apply cool packs if the wrist is red, warm, and swollen.
- Be sure to use correct posture and wrist position.
- Wear a brace at night to keep wrists straight while asleep.
- Take over-the-counter medicines that reduce swelling.



Web Links

For more about finger numbness, see "Links" in the online article: newsinhealth.nih.gov/2020/03/finger-numbness



Health Capsules

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

Alcohol-Related Deaths Increase Nationwide

A recent study found that deaths involving alcohol more than doubled in the U.S. between 1999 and 2017.

Alcohol can take a serious toll on your health. Drinking too much can lead to death from an accident or overdose. People can also die from health problems related to drinking. These include certain cancers and liver, heart, and pancreas problems.

Researchers analyzed data from U.S. death certificates. Overall, alcohol played a role in 2.6% of all

deaths in the U.S. in 2017. About 31% of alcohol-related deaths were from liver disease, and 18% were from overdoses on alcohol alone or with other drugs.

Nearly 1 million people died from alcohol-related causes from 1999 to 2017. Deaths involving alcohol increased among almost all age groups and races/ethnicities during this period. People age 45 to 74 had the highest rates of alcohol-related death. But the biggest increases over

time were among people age 25 to 34. Alcohol-related death rates also increased more for women (85%) than men (35%).

“The current findings suggest that alcohol-related deaths involving injuries, overdoses, and chronic diseases are increasing across a wide swath of the population,” says NIAAA Director Dr. George F. Koob. “The report is a wakeup call to the growing threat alcohol poses to public health.” ■

Improving Care Through Telehealth

Technology can be especially valuable for people in remote areas or places with few medical professionals. Using portable devices, health care providers can test and treat patients without them coming into the office. This practice is called telehealth.

A doctor in a rural area can consult on a patient's scan with a specialist in another state. Someone with diabetes can monitor their blood sugar in real-time and have the data sent to their health care provider. Wearable sensors can alert a caregiver if a person with

dementia leaves the house. These are all examples of how telehealth is changing medical care.

NIH researchers have been developing new ways to help treat patients where they live. For example, they've designed devices that can analyze blood samples for patients at home.

One special device can even detect cancer remotely. It snaps to a smartphone to help diagnose cancer in under an hour. And the test costs less than two dollars per patient.

The device takes a photograph of blood or saliva when mixed with tiny

beads that capture cancer cells. The images are then sent to a hospital computer that can diagnose the sample in seconds. Patients can get a diagnosis and start treatment in a single trip to the clinic. This device is being tested in small village clinics in Botswana to detect a type of cancer called lymphoma.

Through advances like this, telehealth is helping medical professionals deliver effective, long-distance care. Learn more at www.nibib.nih.gov/science-education/science-topics/telehealth. ■



Featured Website

Asian-Language Resources

www.niams.nih.gov/asian-language-resources

Get information about conditions that affect your bones, joints, muscles, and skin in several Asian languages. NIH has free, easy-

to-read information in Chinese, Korean, and Vietnamese. Learn more about topics like arthritis, acne, back pain, and more.

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