



DOCTOR PERSPECTIVES ON THE MEDICAL HEADLINES

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Mindfulness Eases Caregiver Strain

Targeted strategies can successfully reduce stress, anxiety, and worry.

Caring for an ailing loved one over an extended time can be incredibly difficult. Stress, depression, and anxiety are common among the more than 43 million Americans who are caring for an adult or child with a long-term disability or illness. To help those caregivers, a team of researchers from the University of Illinois set out to study the potential benefits of mindfulness therapy in this growing population. The results were promising: Participants who used targeted strategies reported significantly reduced stress and anxiety.

Less Than 20 Minutes to Lower Stress. The researchers focused on the caregivers of 23 veterans who had combat-related injuries, mental illness, post-traumatic stress disorder, diabetes, cancer, traumatic brain injury, and Parkinson's

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THE VIEW FROM DUKE

All Care Starts With Self-Care

"Advances in health care have made it possible for many chronically ill individuals to live at home under the care of family and/or friends. The caregiver role and its emotional demands put many caregivers at high risk for physical and mental distress. This study provides additional evidence of the importance of self-care and social support for caregivers. By practicing mindfulness, caregivers focus on the present moment and not on future worries. Accepting one's limitations and seeking help from others will also allow caregivers to have time for themselves. It is through caring for themselves that caregivers' capability to provide good care to their loved ones may continue."



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Mindful walking is an exercise that can help you focus on the present by paying attention to the sights and smells around you.

disease. The caregivers had a mean age of 58.09, and all were all female. Most were not employed and spent 21 to 30 hours per week on caregiving.

The 11 people in the mindfulness group met for two hours each week to learn exercises to concentrate on the present instead of ruminating on their worries and to focus on bodily sensations to reduce negative emotions. Practices included sitting, walking, seeing, and hearing meditations, and mindful stretching. The participants were encouraged to use the exercises they learned for 30 to 40 minutes each day at home.

After eight weeks, the caregivers reported using the exercises for an average of only 19 minutes per week, but that small time commitment appears to have paid off. Feelings of stress and anxiety lessened significantly, while worry was reduced to a smaller degree, the investigators reported in the journal *Mindfulness*.

Give It a Try. Because the study did not include men, who make up 25 to 40 percent of caregivers in the United States, people who work outside the home, or caregivers of patients with Alzheimer's disease, it's not clear if a wider population would experience the same level of success with mindfulness, but other studies have found similar promise with these practices in different groups of caregivers.

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MIND & MEMORY

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Exercises to Try. To see if mindfulness could work for you, start with some of the following simple exercises:

♦ **The raisin experience.** Examine a

raisin like you've never seen it before. Pay attention to the smell, the appearance, the taste, the feel in your hand. This exercise helps you learn to focus your attention on what is right in front of you instead of letting it wander and worry.

Stress-Busting Suggestions

- ♦ **Ask for help.** Friends and family are often willing to pitch in with either caregiving or helping with tasks such as cleaning, shopping, or repairs.
- ♦ **Turn to professionals.** Look into paid and volunteer respite services that will provide temporary care so you can take a break to recharge.
- ♦ **Seek stress relief in healthy ways.** Instead of relying on unhealthy stress responses such as overeating or drinking excessively, care for yourself by exercising, going out with friends, working on a hobby, or catching up on sleep.
- ♦ **Accept your feelings.** Many caregivers experience anger, resentment, or disappointment. These feelings do not make you an inadequate caregiver; they make you human. Accept that they are a natural response.
- ♦ **Separate roles.** Try to separate medical tasks from relationship time. For example, you could schedule some time each day to have a conversation about anything except medical issues, listen to music together, or play cards.



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Make time each day to get away from medical tasks.

♦ **Sit and breathe.** Sit comfortably and take slow, deep breaths. Focus on your breathing. How does it feel? How does it sound? When thoughts enter your mind, gently return your focus to your breath.

♦ **Mindful walking.** Take a walk and focus on the sights and sounds around you. When your mind wanders, return your focus to what you are experiencing at that moment, such as the sound of birds or the smell of grass.

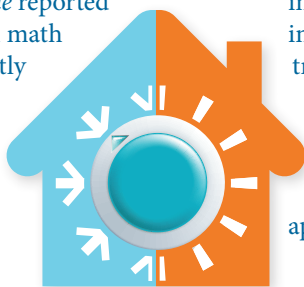
For more guidance, a yoga studio can be a good resource. You can also search for a certified mindfulness instructor online at www.mindfulschools.org.

Care for Yourself. Caregivers sometimes feel guilty about taking time for themselves when a loved one needs them, but it is crucial to reducing your own risk of falling ill. Caregivers have a higher risk of heart disease, stroke, weakened immunity, cancer, diabetes, and memory problems. The person you're caring for depends on you to be there for them, and you can do that only if you're healthy yourself. **DM**

MIND & MEMORY NEWSBRIEFS

To Improve Cognition, Turn the Temperature Up—or Down.

A study published in *PLOS One* reported that men's and women's performance on math and verbal tests may be affected differently by ambient temperature. Among 542 people in rooms that ranged from 61.14 to 90.63 degrees Fahrenheit, men generally performed better at lower temperatures, while women submitted more answers and correct responses in warmer rooms. Temperature did not affect performance on a logic test for either sex.



© Trifonenko | Getty Images

Temperature affects men and women differently.

Regulating the Microbiota May Ease Anxiety. After reviewing 21 studies that looked at 1,503 people, researchers reported in the journal *General Psychiatry* that it may be possible to treat anxiety symptoms by regulating intestinal microbiota.

They reviewed studies that looked at both probiotic and non-probiotic interventions. Of the 14 studies that used probiotics to regulate intestinal microbiota, 36 percent reported a reduction in anxiety symptoms. Non-probiotic strategies appeared to be more effective: 86 percent of the seven studies that looked at strategies such as dietary interventions to alter gut bacteria reported symptom reduction. Dietary changes, the researchers suggested, may have a larger effect on gut bacteria growth than probiotics. **DM**

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DukeMedicine HealthNews (ISSN 1081-5880) is published monthly for \$39 per year by Belvoir Media Group, LLC, 535 Connecticut Avenue, Norwalk, CT 06854-1713. Robert Englander, Chairman and CEO; Timothy H. Cole, Executive Vice President, Editorial Director; Philip L. Penny, Chief Operating Officer; Greg King, Executive Vice President, Marketing Director; Ron Goldberg, Chief Financial Officer; Tom Canfield, Vice President, Circulation. ©2019 Belvoir Media Group, LLC. Periodicals postage paid at Norwalk, CT, and additional entry offices.

POSTMASTER: Send address corrections to *DukeMedicine HealthNews*, PO Box 8535, Big Sandy, TX 75755-8535.

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Watching and Waiting With Diabetic Macular Edema

A study suggests that patients with excellent vision can wait to begin DME treatment without compromising outcomes.

About 10 percent of people with diabetes develop diabetic macular edema (DME), a build-up of fluid in the eye that causes blurred vision that can't be improved with corrective lenses. Timing treatment is as much of an art as a science: Treating too soon can expose patients to risks, while waiting too long can result in irreversible vision loss and blindness.

In a new study published in *JAMA*, researchers from the Diabetic Retinopathy Clinical Research Network put treatment timing to the test and concluded that, in patients with good vision, taking a wait-and-see approach to treatment can yield results that are comparable to starting treatment right away.

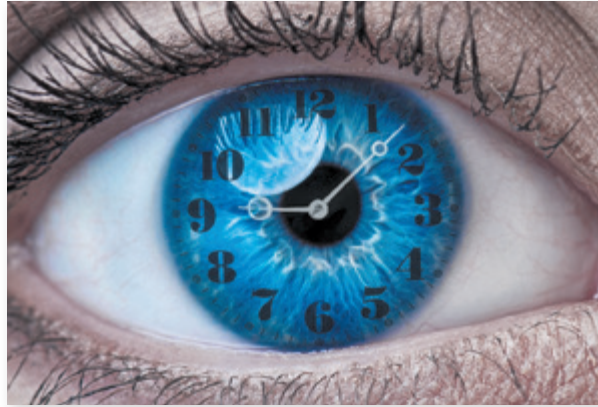
The New Findings. The researchers enrolled 702 people with DME who had vision that was 20/25 or better. The participants were randomly assigned to one of three management strategies:

- ▶ Injection of aflibercept, an anti-vascular endothelial growth factor (anti-VEGF) medication that blocks the development of new blood vessels and limits leakage from the abnormal blood vessels in the eye.

- ▶ Laser photocoagulation to cauterize blood vessels.

- ▶ Observation only.

The researchers closely monitored the vision of all participants. If someone in the observation or laser group lost two lines of visual acuity on an eye chart at one visit or lost one



Timing is everything when it comes to treating DME. Treating too soon can expose patients to needless risk, and waiting too long can result in vision loss.

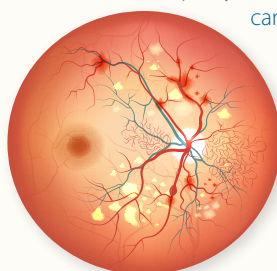
line at two consecutive visits, he or she was given aflibercept injections instead.

Over two years, 25 percent of the participants in the laser group and 34 percent in the observation group needed aflibercept injections. When the researchers looked at total vision lost in all three groups over the course of the study, there were no differences. They concluded that the group that was initially only observed fared no worse than the groups that started treatment immediately.

WHAT YOU SHOULD KNOW

About Diabetic Macular Edema (DME)

Diabetes can damage the blood vessels in the retina, the light-sensing tissue at the back of the eye, resulting in diabetic retinopathy. The damaged blood vessels



© TefiM/Getty Images

DME starts as diabetic retinopathy.

can weaken and leak fluid into the macula and fovea. The macula is near the center of the retina, and the fovea is near the center of the macula. The fluid causes inflammation (macular edema) and impaired central vision. Untreated, it can lead to blindness.



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Don't Wait to See the Eye Doctor

"This clinical trial shows that, in a special group of patients with perfect or near perfect vision in spite of diabetic macular edema, it is safe to delay starting treatment until patients experience a decrease in vision due to their diabetes. More than one-third of the patients who delayed treatment ended up needing to be treated by the end of the two-year study. We cannot yet predict who will need treatment and who will not. One very important point to remember is that participants in this study were evaluated by a retina specialist at least five times per year on average. This suggests that a wait-and-see approach requires frequent visits with your doctor in order to be safe."

What This Means for You. As long as treatment begins at the earliest sign of vision loss, there is no harm in taking a wait-and-see approach with DME, but the condition should not be left untreated. While it is reversible in the early stages, letting it go too long can cause permanent vision loss. An estimated 20 to 30 percent of patients who do not receive treatment for DME will lose at least three lines of vision within three years.

Simple Steps. Regular eye doctor visits are imperative for detecting any progression or vision loss, but that's not all you can do.

The people who are most at risk of developing DME are those with long-standing diabetes, poor glucose control, high blood pressure, fluid retention, and high levels of fats in the blood. To reduce risk, then, it's important to maintain recommended glucose, blood pressure, and cholesterol levels. Eating a healthy diet with plenty of fruits and vegetables and exercising regularly can also help reduce the risk. **DM**

Heart Disease and Depression

A new study suggests that the circadian rhythm may explain why these conditions so often occur together.

Heat disease and depression are often intertwined. People with heart disease are twice as likely as those without to develop depression, while people with depression have a higher risk of developing heart problems, a lower chance of recovery, and a threefold risk of death from a heart attack. Researchers have long been searching for ways to understand and address this link, and a study published in *Scientific Reports* adds a new piece to the puzzle: the circadian rhythm.

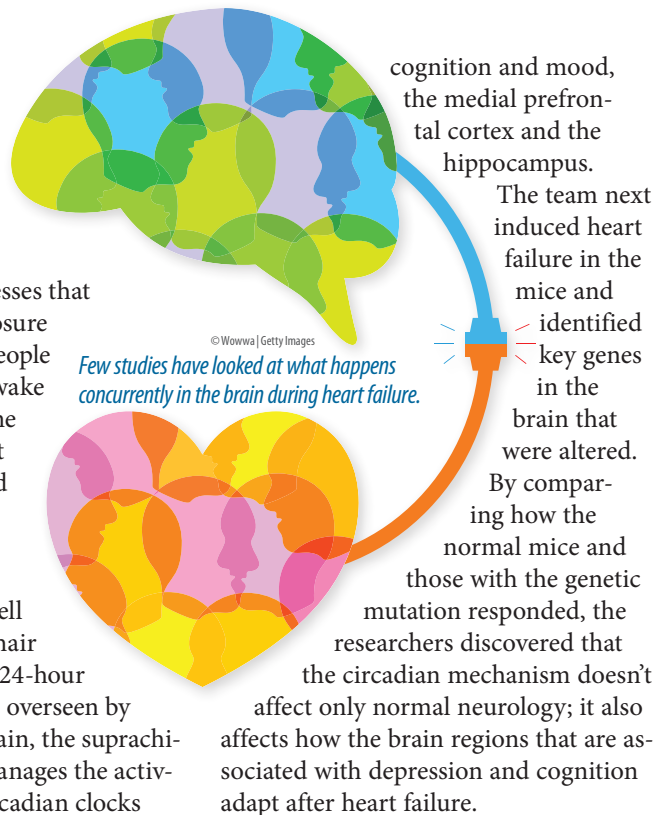
The Body Clock. The circadian rhythm is a 24-hour cycle of behavioral, physical,

and psychological processes that is synchronized by exposure to light. It's why most people sleep at night and are awake during the day. The same rhythm makes the heart rate, blood pressure, and body temperature peak when we are awake and plummet during sleep. Hormone production, cell regeneration, and even hair growth all operate on a 24-hour schedule. The process is overseen by a master clock in the brain, the suprachiasmatic nucleus, that manages the activity of all of the other circadian clocks that are found in every cell and organ. Disrupting this rhythm can have significant health implications.

Hearts and Minds. Prior research has shown that heart disease has a circadian component. Shift workers, for example, disrupt their natural circadian rhythms and have a higher risk of heart disease as a result (as well as obesity, diabetes, and stroke). And both heart attacks and stroke occur most often in the morning.

A team from the University of Guelph posited that the circadian rhythm may also explain the co-occurrence of heart disease and depression. Many studies have focused on the heart, they wrote in *Scientific Reports* in March, but few have looked at what happens concurrently in the brain.

The researchers were specifically interested in the circadian mechanism molecule called clock. To take a look at the role of clock in the brain's response to heart failure, the researchers studied two kinds of mice: normal (called wild type) and those with a mutation in the circadian mechanism. They first discovered that the mutation affected the structure of neurons in two brain regions that play an important role in



Applying Chronobiology. By discovering links like these, chronobiologists are opening new avenues to treating diseases. This may include identifying new biomarkers, developing drugs that target the circadian mechanism, and precisely timing therapy. A report published in 2015 in *Frontiers in Pharmacology* noted that many studies have found that taking antihypertensive medications such as beta-blockers and angiotensin-converting enzyme inhibitors at night can reduce blood pressure more—sometimes much more—than taking them in the morning.

What This Means for You. Major circadian disruption, such as that which occurs in shift workers, can increase the risk of heart disease, metabolic syndrome, stroke, hypertension, stress, depression, and diabetes, but smaller disruptions appear to take a toll as well. To keep your circadian clock synchronized, keep regular sleep and wake hours, even on weekends; increase your exposure to natural light during the day while minimizing exposure to blue light for a few hours before bedtime; and avoid heavy or spicy meals before you go to sleep. **DM**



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Another Reason to Exercise

"The results of this animal study emphasize the significance of circadian rhythm disruption overall in human health, and specifically for individuals with cardiovascular disease and depression. More data have emerged demonstrating that the mind-heart circuit is highly complex. Therapeutically, various forms of exercise have been found to normalize a disrupted circadian rhythm. For example, yoga practice has been shown to improve heart rate variability (HRV), a measure that represents the circadian rhythm of the cardiovascular system. Patients with heart failure and/or depression have abnormal HRV that predicts reduced survival. One study has demonstrated that even one month of yoga practice can improve HRV significantly. The impact of other forms of exercise on the regulation of circadian rhythmicity—specifically with respect to CVD risk factors, including hormonal levels, sleep/wake cycles, blood pressure, and heart rate—have also been well studied. So you don't need to sit around waiting for new biomarkers that may lead to new therapeutics to be identified. There's already an effective strategy."

Dietary Fiber Consumption May Reduce Risk of Heart Failure Death.

People with heart failure who eat more fiber may have a lower risk of death or need of a heart transplant, according to a study presented at Heart Failure 2019. The researchers recruited 350 patients and found that heart failure patients had lower biodiversity of intestinal microbes than healthy controls. Fiber intake, however, was positively associated with bacterial diversity levels. The study also linked meat intake to higher levels of trimethylamine-N-oxide (TMAO) in patients with heart failure. TMAO level is associated with a greater risk of cardiovascular events, and gut microbes play a role in its formation. The investigators concluded that “it would be prudent for patients with heart failure to limit their meat intake to two to three times a week” and to eat more high-fiber foods.



Oats, fruits, and vegetables are fiber-rich powerhouses.

New Mesothelioma Treatment Approved.

For the first time in 15 years, the U.S. Food and Drug Administration has approved a new therapy for the first-line treatment of unresectable, locally advanced or metastatic malignant pleural mesothelioma. The treatment combines chemotherapy with a tumor-treating fields (TTF) device that uses noninvasive electric currents to disrupt cancer cell division and inhibit tumor growth. In a prospective, single-arm trial, patients treated with the TTF and chemotherapy regimen survived six months longer than those who received only chemotherapy. There were no major side effects, but mild-to-moderate skin irritation was reported. The researchers noted that TTF offers a treatment option to patients who would previously have been offered only palliative care. **DM**

FITNESS & NUTRITION

This Weight-Training Style Could Lengthen Your Life

Developing muscle power, not just strength, may be the key to a long life, a new study suggests.

If you watch weight lifters, you'll see many styles. Some lift quickly, completing a whole set of repetitions in a minute or two, while others lift with slow control. Some lift lighter weights many times, while others lift very heavy weights just a few. These differences are more than preferences: They work the muscles differently and build different types of strength or endurance.

The Longevity Style. A new study presented at EuroPrevent 2019, a congress of the European Society of Cardiology, suggests that one of these styles is superior when it comes to living a longer life: quick lifting that builds muscle power.

In this study, 3,878 people with an average age of 59 (range 41 to 85) underwent a maximal-muscle-power test using the upright row exercise. The researchers chose this exercise because it uses a movement that is commonly used in real life, such as when picking up groceries or children. Participants completed two or three repetitions to determine their maximal muscle power, which



To boost power in a chest press, push up as quickly as possible, and then return the weight at a normal speed.

was then recorded as power generated/kilograms (kg) of body weight. The median power values were 2.5 watts/kg for men and 1.4 watts/kg for women. Participants who had a maximal muscle power above the median for their sex, the researchers discovered, had the best survival rates.



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Start Now for Best Results

“Possibly one of the single most important factors for health and independence as we age is muscle quality. Both the amount and the strength of muscle are critical to being able to complete daily tasks such as getting out of bed, washing, walking around, and lifting things. However, many older adults do not exercise sufficiently enough to strengthen their muscles, even in light of these exercises being part of the U.S. recommendations for physical activity in the elderly. This longitudinal study suggests that having better upper-body muscle power will significantly reduce the risk of death in both men and women. Therefore, something as simple as adding muscle-strengthening exercises to the daily routine may reduce the risk of death in adults. These types of exercises can be done in a gym setting, but do not need to be. Adults can use household items, such as cans in shopping bags or even their own body weight (e.g., press-ups) to increase muscle power. Any age is a good age to start, but the earlier the better.”

Conversely, people in the lowest quartile had a 10- to 13-times higher risk of dying than those above the median.

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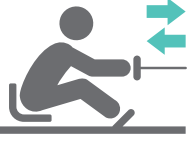



Boost Your Muscle Power. To get the benefits of better muscle power, which begins to decline naturally around age 40, use as much speed as possible when contracting the muscle (the concentric phase) and a normal speed when returning to the original position (the eccentric phase). In a bicep curl, for example, the concentric phase is when you move your wrist to your shoulder, and the eccentric phase is when you return it to your side.

Use a weight that is challenging but that allows you to use good form at all times. Begin with six repetitions and rest for 20 seconds between sets to allow your muscles to replenish their energy stores. If six repetitions are too difficult to complete, the weight is too heavy. When six repetitions become easy, add two more for a total of eight. When that also becomes easy, it's time to increase the weight and start with six reps once again.

Whole-Body Workout. Use this technique for multiple exercises for your upper and lower body. See the table for ideas for exercises that also have a direct functional benefit. If you are new to lifting weights, it's a good idea to talk to a trainer or physical therapist who can help you learn how to do these exercises with proper form to prevent injury. **DM**

TABLE. Functional Exercises

One of the most important benefits of strength training is an improvement in functional fitness. Here is a sample of how several exercises translate to real-life activities.

	<p>Rows: A row is a pulling motion that you use in everyday tasks, such as opening a car door or raking leaves. When rowing as an exercise, use speed when pulling the weight toward you and slow down when releasing it.</p>
	<p>Chest Presses: The opposite movement, a chest press, is what you use to lift a child in the air, put something away on a high shelf, or transition from a lying to a seated position. Apply speed when you are pushing the weight away from your chest.</p>
	<p>Bicep Curls: Bicep strength helps you carry a heavy load in front of you or against your chest. Use speed when lifting your arms up.</p>
	<p>Squats: You use a squatting motion to use the bathroom, sit in and rise from a chair, and pick up something from the floor. Use speed when rising from the squat.</p>

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FITNESS AND NUTRITION NEWSBRIEFS

Train for a Marathon to Reverse Arterial Aging. New runners who completed their first marathon experienced a drop in both blood pressure and arterial age in a study presented at EuroCMR 2019, a scientific congress of the European Society of Cardiology. The study included 139 healthy people ages 21 to 69 years who ran six to 13 miles a week for six months, then completed the 2016 or 2017 London Marathon. Before they started training and two weeks after the marathon, participants had magnetic resonance imaging and ultrasound scans of the heart and blood vessels, a fitness test, and measurements of blood pressure and heart rate.



© Skynesher | Getty Images

New runners may run away from arterial stiffness.

After completing the marathon, the participants' aortic stiffness, a normal part of aging, was reduced, particularly in older participants and those with longer marathon finish times, and blood pressure dropped by 4 millimeters of mercury. The health benefits were comparable to the effect of medication, the study authors noted, and could translate to a 10 percent lower risk of stroke.

Exercise Recommended for Inpatient Psychiatric Care.

Exercise so effectively improves serious psychiatric disorders, such as depression, schizophrenia, suicidality, and acute psychotic episodes, that it could reduce the length of hospital stays and the use of psychotropic medications, according to a study published in May in *Global Advances in Health and Medicine*.

Investigators at the University of Vermont and the University of Vermont Medical Center built a gym in the medical center's inpatient psychiatry unit. They led 60-minute structured exercise and nutrition education programs for about 100 patients. After exercising, most patients reported higher self-esteem and lower anger, anxiety, and depression. An average of 95 percent of patients reported that their moods improved after exercising, and 63 percent reported being happy or very happy.

"If you're in a psychotic state, you're sort of limited with what you can do in terms of talk therapy or psychotherapy," said lead researcher David Tomasi, PhD. "It's hard to receive a message through talk therapy in that state, whereas with exercise, you can use your body and not rely on emotional intelligence alone."

Dr. Tomasi hopes to see exercise become as common in psychiatric facilities as pharmacological intervention. **DM**

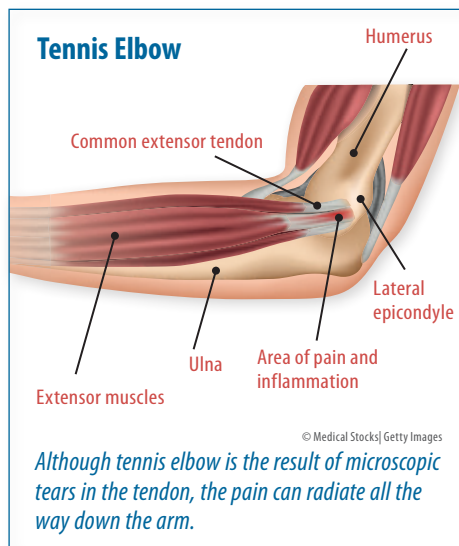
Interventional Radiology Takes a Swing at Tennis Elbow

A noninvasive procedure can provide relief for people with this common overuse injury.

Tennis elbow isn't limited to the courts; it's a common condition that can affect a wide variety of people, from assembly workers to butchers and golfers to painters. Fortunately, the 3 percent of the population that suffers from what is technically called lateral epicondylitis may have a new treatment option. Researchers from Japan reported at the Society of Interventional Radiology's 2019 Annual Scientific Meeting that transcatheter arterial embolization (TAE) can reduce inflammation and pain in patients who have not responded to other treatments, negating the need for invasive surgery.

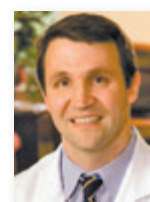
What Is Tennis Elbow? Tennis elbow involves the muscles and tendons of the forearm. When the extensor carpi radialis brevis (ECRB) muscle, which helps stabilize the wrist when the elbow is straight, is overused, the tendon can develop microscopic tears where it attaches to the lateral epicondyle, a bump on the end of the upper arm bone, the humerus. Those tears can lead to inflammation and pain in the elbow, a burning sensation down the arm, and a loss of grip and arm strength.

What TAE Does. Many people fail to find relief with conservative treatments. In this prospective study, 52 such patients underwent TAE with local anesthesia.



To perform the procedure, the study authors inserted a catheter into the radial artery in the wrist and threaded it to the elbow. Once it was in place, they sent imipenem/cilastatin sodium through the catheter to block, or embolize, the inflamed blood vessels.

The research team then followed the patients for up to four years. In that time, the patients reported statistically significant reductions in pain, without the need for physical therapy. Imaging in a subset of patients showed improvement in swelling and tears in the tendon. The researchers concluded that TAE could be an effective treatment for tennis elbow.



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More Evidence Is Needed

"Tennis elbow, or lateral epicondylitis, is an overuse injury that affects 3% of the population. Despite its prevalence, only 4 to 11% of patients with the condition ultimately require surgery. As the problem is primarily one of a decreased blood supply to the overused tendon, it is counterintuitive that an embolization procedure to block the blood flow to the tendon would be successful. This procedure is not well known in the orthopedic literature. While the mainstay of therapy is nonoperative, all surgical interventions are aimed at removing the degenerative tendon and/or restoring the blood flow to the diseased tendon. More evidence is needed to establish this intervention as efficacious in the treatment of tennis elbow."

Traditional Treatment. TAE would not be the first line of treatment but rather reserved for difficult-to-treat cases in which conservative treatments failed. The first line of treatment for tennis elbow is rest and the use of nonsteroidal anti-inflammatory medicines for several weeks. A physician may suggest wrist-stretching exercises or order physical therapy as well. An over-the-counter forearm brace can take pressure off of the muscles and tendons. If those measures don't work, some patients have steroid injections to reduce the inflammation. If that also doesn't help, and symptoms persist for six months to a year, physicians often begin to suggest surgery. This is where TAE may one day come in—as a safer, simpler alternative to invasive surgery. **DM**



The Growing Field of Interventional Radiology: Transcatheter arterial embolization falls under the umbrella of interventional radiology (IR), a diagnostic and therapeutic strategy that uses imaging (such as MRI scans, ultrasound, and X-rays) to perform minimally invasive procedures. It can be used to treat a wide variety of conditions—such as certain cancers, uterine fibroids, deep vein thrombosis, and pleural effusion—with less risk and shorter downtime. It requires less sedation and often can be a same-day procedure.

Cardiology—
Variable Blood
Pressure Is Risky

**Nutrition &
Fitness—**
Food and
Your Mood

Dermatology—
Psoriasis and
Mental Illness

Q How do I determine my target heart rate for exercise?

A To calculate your target heart rate, you first have to determine your maximal heart rate (MHR). As a general rule, this is your age subtracted from 220. For a moderate-intensity workout, your target heart rate is 50 to 70% of your MHR. Vigorous intensity is 70 to 85% of your MHR. As you grow older, your target heart rate will be lower. Here are some examples:

- ▶ **Age 40.** MHR is 180 beats per minute (bpm). Moderate intensity is 90 to 126 bpm. Vigorous intensity is 127 to 154 bpm.
- ▶ **Age 50.** MHR is 170 bpm. Moderate intensity is 85 to 119 bpm. Vigorous intensity is 120 to 145 bpm.
- ▶ **Age 60.** MHR is 160 bpm. Moderate intensity is 80 to 112 bpm. Vigorous intensity is 113 to 136 bpm.

There is also a more personalized approach that takes into account your resting heart rate. Calculate your resting heart rate by taking your pulse when you wake up in the morning, before getting out of bed. Subtract your resting heart rate from your MHR.

To get your vigorous target heart rate, multiply that number by 70% and then add the resting heart rate. Multiply the same number by 85% and then add the resting heart rate. Those two numbers represent your range for vigorous exercise.

Take the example of a 50-year-old man with a resting heart rate of 70.

1. Subtract 50 from 220 for an MHR of 170.
2. Subtract the resting heart rate of 70 from the MHR of 170 for a total of 100.
3. Multiply 100 by 70%, then add the resting heart rate: $70 + 70 = 140$.
4. Multiply 100 by 85% and then add the resting heart rate: $70 + 85 = 155$.

The target range for vigorous exercise in this example is 140 to 155 bpm.

Q There are so many alternative milk options on the shelf that I don't know what to choose! Any tips?

A If you're looking for an alternative to cow's milk, there are more options than ever. In general, you want to look for plant milks that have low sugar and avoid carrageenan, a thickener that may be linked to ulcers, inflammation, and other GI



© byheaven | Getty Images

Plant milks have a variety of origins, flavors, and uses.

complications, according to a study in *Practical Gastroenterology* last year. Beyond that, there are some differences between the types of plant milk.

Almond milk. Almonds are rich in magnesium, potassium, vitamin E, zinc, iron, selenium, fiber, and calcium. Almond milk is low in calories, but also low in protein.

Coconut milk is made from coconut meat and water. It contains medium-chain triglycerides and a relatively high amount of potassium, but has a distinctive coconut flavor.

Soy milk. The original milk alternative, soy milk offers high protein and a mild flavor, and is considered to be the closest to cow's milk. Phytic acid from soybeans, however, may inhibit absorption of calcium, magnesium, iron, and zinc. On the bright side, soy foods are rich in isoflavones, which are being studied for their potential health effects.

Rice milk is often high in sugar and low in protein, but it is the most hypoallergenic option. It is also low in fat, but some manufacturers add vegetable oil.

Oat milk contains more protein than almond milk, as well as beta-glucan, a soluble fiber that reduces low-density lipoprotein cholesterol levels. Oat milk is low in calories, cholesterol, and saturated fat, but high in fiber. It also contains iron, vitamin E, and folic acid.

Cashew milk. This milk alternative contains fiber, antioxidants, copper, and magnesium. It is low in calories, protein, saturated fat, and cholesterol. It's creamier than almond milk and is commonly used in dairy-free ice cream.

Hemp milk is made from hemp seeds and water. While hemp seeds also grow into marijuana plants, the seeds are not psychoactive. It contains omega-3 fatty acids and is rich in protein, but it has an earthy flavor. **DM**

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