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Doing weight-shifting exercises for just a few minutes each day can improve balance. See page 5 to learn more.

Boost Your Memory Now

These tips and tasks can improve your recall and help you remember where you put the car keys.

Slight memory slips, such as forgetting where you parked the car, not remembering someone's name, or why you opened the refrigerator door, can strike fear in people's hearts. People may wonder, am I on the road to dementia? Generally speaking, the answer is probably no. Occasional forgetfulness is a part of older adulthood and does not automatically mean a downward spiral into dementia, though if you are concerned you should definitely talk with your doctor.

"The brain ages along with the rest of the body," says psychiatrist Gary Small, MD, director of the UCLA Longevity Center at the Semel Institute for Neuroscience and Human Behavior. "By the time people reach their 40s they have some decline compared to when they were in their 20s, but the changes tend to be mild and they doesn't interfere with daily life."

Healthy Brain Choices

Large-scale studies have shown that for most people lifestyle choices have greater influence on brain health than inherited genes. Some of the very same things you do for your body, such as eating healthfully and exercising regularly, also benefit the brain. There also are specific cognitive habits and techniques that can help you improve memory and keep important information at the forefront of your mind. Dr. Small and his colleagues at the UCLA Longevity Center have conducted numerous studies to explore the impact of brain games and educational programs designed to improve memory. These studies included brain scans that show fascinating details of brain structure and func-

tion. Areas of the brain that are active literally appear on the scans in swatches of bright reds, oranges, and yellows. The scans enable researchers to witness brain cells working in areas that control memory, reasoning, and other cognitive skills. The findings indicate that it's quite possible to boost brain function, and it can happen in as little as a few weeks. Lighting up those brain scans, however, requires action.

"You have to be motivated," says Dr. Small. "And know the difference between mentally stimulating activities, such as inspiring conversations and educational pursuits, and learn-

ing specific techniques to compensate for memory declines."

Both are valuable for the aging brain.

Memory Tips and Tricks

In his book *2 Weeks to a Younger Brain*, Dr. Small offers strategies to overcome common forgetfulness as well as a comprehensive step-by-step approach to enhance brain function in 14 days. Much of the advice is easy to apply, and some may have instantaneous results. For example, the following two concepts can quickly help you to ward off age-related memory slips.

FOCUS: Pay Attention to What You Want to Remember. A mind that constantly wanders isn't going to absorb or retain information very well, if at all. So, make it a regular practice to really focus on and recall details. For example, when watching a movie take note of something specific, such as props, hairstyles, or wardrobes. The next day test

Continued on page 7



The brain enjoys a challenge, and there are many fun ways to stimulate and improve memory.

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UCLA Researcher Studies Cannabis Chemicals for Pain Relief

Ziva Cooper, PhD, research director of the UCLA Cannabis Research Initiative, has been awarded a \$3.9 million grant from the National Center for Complementary and Integrative Health to study whether cannabis chemicals called terpenes can reduce the amount of opioid medication a person needs to reduce pain. The award allows Dr. Cooper to study how terpenes and tetrahydrocannabinol, or THC, the primary psychoactive chemical in cannabis, interact with one another, commonly referred to as the entourage effect. Terpenes, which contribute to the taste and smell of cannabis, may boost the pain-relieving effects of THC, while minimizing its negative effects. For the study, researchers will examine two terpenes. Each terpene will be administered separately and with THC to see whether they help reduce pain on their own and whether they enhance the pain-relieving effects of THC, while reducing its intoxicating properties. Separately, the potential of these terpenes to reduce opioid doses needed to decrease pain will be tested. “Chronic pain is a significant public health burden, and there are few effective treatments that lack the adverse effects that limit use,” says Dr. Cooper, who is also an associate professor of psychiatry and biobehavioral sciences at the David Geffen School of Medicine at UCLA. According to Cooper, specific chemicals in the cannabis plant, taken alone or together, may be effective options with minimal side effects. Research is underway.

New Understanding of Genetic Changes in the Eye

National Eye Institute (NEI) researchers profiling genetic changes in light-sensing mouse photoreceptors have a clearer picture of how age-related eye diseases may be linked to age-related changes in the regulation of gene expression. The findings, published April 21, 2020 in *Cell Reports*, suggest that the process of gene regulation (epigenetics) could be targeted as a therapeutic strategy to prevent leading causes of vision loss, such as age-related macular degeneration (AMD). “Our study elucidates the molecular changes and biological pathways linked with aging of rod photoreceptors, light-sensing cells of the retina. This helps future investigations move forward to study how we can prevent or delay vision loss in aging,” says the study’s lead investigator, Anand Swaroop, PhD, senior investigator and chief of the NEI Neurobiology, Neurodegeneration, and Repair Laboratory. Rod photoreceptors enable dim-light vision and are critical for the survival of cone photoreceptors that enable daylight and color vision. Rod dysfunction is common in older human adults and can be an early warning sign of AMD and other retinal degenerative diseases. While humans are not mice, the findings have broad implications for how scientists understand age-associated neurodegeneration, not only in the eye, but elsewhere in the body. Basic research such as this advances methods to prevent, diagnose, and treat disease.

Low Healthy Literacy Among Heart Failure Patients Increases Hospitalizations

Health literacy is defined as the degree to which individuals have the capacity to obtain, process, and understand health information needed to make appropriate health decisions. Low health literacy has been found to be more prevalent among older adults, minority populations, and those who have low socioeconomic status. People with low health literacy need help understanding and navigating complex health-care systems, filling out forms, managing chronic conditions, and understanding directions on medicines. According to a review study published May 28, 2020, in the *Journal of the American College of Cardiology*, 25 percent of older adults with heart failure (HF) were found to have inadequate or low health literacy, which was associated with greater mortality, hospitalizations and emergency department visits. The researchers analyzed existing studies and identified two interventional studies that effectively improved outcomes among HF patients identified as having inadequate health literacy. HF patients who received the intervention (health literacy education) had a lower rate of mortality, fewer hospitalizations and ED visits, and better medication adherence. Until system-wide changes to improve patient education are implemented, people with HF should consider having loved ones with them for appointments and procedures, especially during the early days of diagnosis, as stress can limit memory and comprehension. ■

A Simple Way to Reduce GERD

This breathing technique has been scientifically shown to quell symptoms by calming down the nervous system.

In times of stress we are often told to take a big deep breath. Why? As it turns out, it has a lot to do with a nerve that quite literally connects your mind to your gut. It's the vagus nerve, also called the 10th cranial nerve, and it's the longest and most complex of the cranial nerves. The amazing vagus nerve branches and innervates through facial structures, the ears, neck, esophagus, heart, lungs, abdomen, and the digestive tract. It is the pathway for communication between the brain and all these structures. The vagus nerve can be stimulated by deep diaphragmatic breathing. By doing so, we can change our emotions and bodily functions.

A Breath of Relief

Suzanne Smith is an integrative nurse practitioner in the UCLA Integrative Digestive Health and Wellness program. She teaches her patients how to tap in to the benefits of deep breathing. The calming effect is virtually instantaneous, which is why she finds diaphragmatic breathing such a valuable tool for people who have gastroesophageal reflux disease (GERD), or abdominal bloating and distention.

"The diaphragm has various openings, and one is the called the esophageal hiatus. The esophagus passes through that and so does the vagus nerve," explains Smith. "When we take deep diaphragmatic breaths, it calms the body, and the diaphragmatic movement also creates a kind of anti-reflux action that can help relieve GERD symptoms, which can be especially helpful to people who are not responding to proton pump inhibitors (PPIs)."

Smith is quick to say that the technique isn't necessarily a replacement for medications, though in some cases

it might be. When used skillfully, the breathing practice can do more than just relieve gastrointestinal (GI) distress, it may prevent it in some people. For example, she recommends that her patients take a few deep slow breaths before and after meals to aid digestion. By creating calm, people can inherently be more mindful about what they eat and how they consume it.

"Sometimes people don't have a positive relationship with food, and they may have some anxiety that's not always conscious," Smith adds. "In such cases, the body might see food as a threat instead of a positive element. This can trigger the stress response and GI upset. But with a deep-breathing practice, it's possible to modulate the nervous system telling the body that food is good."

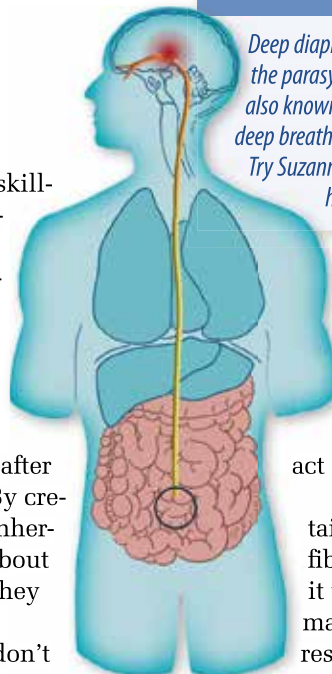
Numerous researchers have studied the effects of diaphragmatic breathing on GERD, and found that it works to reduce belching, and ease symptoms when PPIs don't work. But, no matter how much deep breathing you do, it will not override the ill effects of a greasy, heavy meal.

Why Deep Breathing Works

The autonomic (automatic) nervous system includes the parasympathetic and sympathetic systems. The parasympathetic system is referred to as "rest and digest," whereas the sympathetic nervous system is known to spark "fight, flight, or freeze" reactions. The former ushers in relaxation, and the latter readies us to react to a threat. When either system is triggered, a message is sent to alter breathing and other functions regu-

WHAT YOU SHOULD KNOW

Deep diaphragmatic breathing triggers the parasympathetic nervous system, also known as "rest and digest." Just a few deep breaths may quell symptoms of GERD. Try Suzanne Smith's guided practice at <http://tiny.cc/tdbkpz>.



© Dtsoid | Getty Images
The vagus nerve links the brain directly to the gut. Deep breathing stimulates this nerve and triggers relaxation.

lated by the autonomic system. But, the beauty and power of breathing is that it is both an automatic occurrence and a voluntary act under our control.

The vagus nerve contains parasympathetic nerve fibers. Thus stimulating it through deep diaphragmatic breathing initiates the rest and digest response. "It doesn't take long to be effective," says Smith. "And if you do the practice regularly, it creates a more resilient nervous system."

In other words, by consciously activating the relaxation response through deep breathing, you can spend more of your day within the calm, composed state of parasympathetic system.

How to Breath Diaphragmatically

The technique is simple and specific. Sit or lie down in a comfortable position. Eyes can be open or closed. Breathe in through the nose and when you exhale slowly, gently purse your lips as if blowing through a straw. To begin, place a hand on the upper chest and the other on your belly. Take a breath and notice which hand moves first. For many people, it's the chest, which is shallow breathing indicative of a more stressful state. Take another breath and try to get your belly to expand first while keeping the chest still. With a deep breath you will feel the chest and ribcage expand at the end of the inhale, but it's your belly you want to expand first. Breathing before and after meals can be quite useful. ■

Is Balance Becoming More Difficult?

Knowing why you feel unsteady on your feet can help reduce your risk of falls.

Is it a little more difficult to stand up from a chair than it used to be? Perhaps walking on uneven surfaces, like grass or gravel trails, makes you a tad apprehensive? Or maybe you just feel clumsier playing tennis, dancing, or golfing? How we move in space can change for many reasons.

The signs may be subtle but shouldn't be ignored. Addressing them may increase your quality of life by reducing your future fall risk.

"Having one fall increases the risk of having another, not only because of vulnerability from the injury, but also because people often become scared," explains physical therapist and geriatric clinical specialist Susan Stich, MSPT, UCLA Therapy Services. "Increased fear can lead to reduced physical activity, resulting in a weaker body and leading to more falls. It's a vicious cycle."

According to the National Council on Aging, one in four Americans ages 65+ falls each year. Every 11 seconds, an older adult is treated in the emergency room for a fall; every 19 minutes, an older adult dies from a fall. Falls are the leading cause of fatal injury and the most common cause of nonfatal trauma-related hospital admissions among older adults.

In broad terms, your sense of balance comes mainly from the eyes, ears, and information from your muscles and joints, says Stich. If any of those systems are not functioning properly, balance can go awry. In addition, certain medical conditions and treatments for them may cause dizziness or other symptoms that compromise balance. The more you know, the better you can address and manage risk factors. To follow are some of the most common reasons



Numerous studies point to tai chi as a very good method to improve balance. A regular practice garners the best results.

why balance may be challenged and some interventions that can help you overcome the balance issues.

Chronic Conditions

It's estimated that 50 percent of people with diabetes have some form of nerve damage. Diabetic neuropathy is a type of nerve damage that most commonly occurs in the legs and feet. It reduces the ability to feel the feet, making it difficult to sense the ground, so walking becomes wobbly. Nerve problems can develop any time within the first 10 years of diagnosis. Uncontrolled glucose levels hasten the process. People with diabetes should monitor glucose levels and take medications as prescribed. Lifestyle changes can be quite helpful and may reverse the disease.

Some studies have shown that medications for controlling high blood pressure may actually increase fall risk by excessively lowering blood pressure. There is truth in that, but the more germane message is to avoid aggressively lowering blood pressure. This makes at-home blood pressure monitoring important, especially when starting a new medication. Research from Kaiser Permanente published in the *American Journal of Preventive Medicine* found that if patients with hypertension taking prescribed medications experienced unusually low blood pressures (systolic blood pressure under 110 mmHg), they were

twice as likely to experience a fall or faint as compared to people whose treated blood pressure remained 110mmHg and above. According to the researchers, older adults are also more susceptible to the side effects of low blood pressure. For example, they are more likely to experience orthostatic hypotension, which is a sudden drop in blood pressure upon standing, leading to dizziness.

Cardiovascular diseases also may create disruptions in balance. For example, abnormal heart rhythms (heart arrhythmias), narrowed or blocked blood vessels, a thickened heart muscle (hypertrophic cardiomyopathy), or a decrease in blood volume can reduce blood flow and cause sensations of severe lightheadedness and fainting. Long-term medical conditions that affect the nervous system, such as Parkinson's, Alzheimer's, and multiple sclerosis can disrupt balance. Arthritis affects bones and joints, which can compromise movements. This can lead to poor body mechanics, such as limping to favor one leg over another. Avoiding arthritis joint pain may lead to inactivity, which ultimately exacerbates the problem. Working with a physical therapist can help people regain strength, correct imbalances, and reduce pain.

People with chronic conditions often take several medications, which can interact in ways that make a person feel unsteady, sleepy, or dizzy (a common side effect). Always ask your doctor about a medication's side effects, so you know up front what may occur. Report any side effects as soon as possible. There may be alternative medications to try.

And finally, consider vision. The eyes send information to the brain about the environment. If you can't see well, it's more difficult to navigate and move confidently. Annual eye exams help catch early onset of diseases, such as macular degeneration or cataracts. Vision does change through the years, so updating prescriptions for eyeglasses and contacts is needed periodically. If you wear bifocals, be especially mindful when

moving. Don't wear them while going downstairs, for example, as this can lead to missteps.

Balance Disorders

Some balance disorders are caused by problems in the inner ear. Benign paroxysmal positional vertigo (BPPV) occurs when calcium crystals in your inner ear are dislodged from their normal positions and move elsewhere in the inner ear. BPPV is the most common cause of vertigo in adults. Symptoms include a spinning sensation when turning in bed or tilting the head back to look up. Physical therapists can perform and teach particular head maneuvers that often resolve BPPV.

The part of the inner ear that is responsible for balance is the vestibular system, also known as the labyrinth. A condition called labyrinthitis occurs when the labyrinth becomes infected or swollen. It is typically accompanied by vertigo. Labyrinthitis can result from upper respiratory infections, other viral infections, and, less commonly, bacterial infections. Treating those infections usually restores balance. Head injuries, motion sickness, and migraines are other common causes of dizziness that can disturb the inner ear system and increase fall risk.

Physical Fitness Matters

Muscle strength diminishes slowly through the decades. However, the rate of loss is accelerated by poorly managed chronic conditions, sedentary lifestyles, and nutrient-deficient diets. But with effort, those risk factors can be mitigated. "There are a lot of studies that show that a regular exercise program that includes muscle strengthening can help lower the risk of falls," says Stich.

Consider setting up a home gym with a few inexpensive items. A lot can be accomplished with some dumbbells of various weights and/or flexible bands or tubing. What's needed most is a defined routine and a dedicated practice. For example, it's generally recommended to do resistance training two to three times per week. Comprehensive programs that include strength and balance routines can be found online at SilverSneakers.com and at the National Institute on Aging at <http://tiny.cc/qmc3oz>.

Weight-shifting exercises can be especially important. A Canadian study published in the *Gerontologist* reported that 41 percent of falls in long-term care facilities were due to incorrect weight shifting. Researchers also noted that incorrect weight transfer caused twice as many falls



© Sean Anthony Eddy | Getty Images
Physical therapists help people build better balance by using many different body positions.

as tripping. While these findings do not address the probable existence of underlying medical conditions that may have contributed to the mishaps, the biomechanics of the falls were recorded on video and added to the body of knowledge of how falls occur. As a result, some preventive strategies were developed. For example, adding weight-shifting exercises (see below) are a smart addition to your daily physical fitness routine.

"We commonly give patients weight-shifting exercises and train them on different surfaces, such as foam pads, to challenge their balance reactions," says Stich. "Also make sure your home is free of clutter, with clear pathways for walking. In addition, nonskid rugs, good lighting, and grab bars in the bathroom reduce fall risk by creating a generally safer environment." ■

BALANCE EXERCISES



WEIGHT SHIFT

Stand tall, with your back straight and your abdominal muscles contracted.

Keeping your legs slightly farther apart than the width of your hips, shift your weight from side to side, picking your non-weight-bearing foot up slightly.

Balance for a few seconds every third (side) step. As you balance, think of standing as tall as you can on that leg.

Continue for 30-60 seconds; stop, rest and then repeat for another 30-60 seconds.

SINGLE LEG STAND

Stand with your feet slightly apart. Keep your left hand on your left hip and hold on to a sturdy chair with your right hand.

Lift your left leg off the floor, hold for 5 seconds, and then lower your foot to the starting position; repeat 8-12 times.

Repeat the exercise 8-12 times with your right leg. Gradually increase the length of time standing on one leg.

Variation: Make the exercise more difficult by letting go of the chair or closing your eyes, but stand close to the chair in case you need support.



Illustrations by Alayna Paquette

The Power of a Plant-Based Diet

Eating more plants and fewer animal-based products may help reduce risk for many common chronic conditions.

The gorgeous indigo color of blueberries, the refreshing burst of tangy citrus, and the sweet smell of ripe mangoes result from a vast array of compounds called phytochemicals (phyto means plant). Phytochemicals do a whole lot more than lure us into enjoying certain foods. They help keep us healthy. Tens of thousands of phytochemicals have been identified, but scientists suspect many more exist. While researchers investigate the specifics of how plant chemicals contribute to health, it's important to know that the benefit isn't necessarily due to a single isolated compound.

"The many compounds in plant-based foods interact in ways that we don't fully understand yet," says Dana Hunnes, RD, MPH, PhD, Assistant Professor at the UCLA Fielding School of Public Health. "But what we do know is that phytochemicals can help prevent and reverse some chronic diseases."

Support for Healthy Aging

It's easy to get stuck in a rut and eat the same foods over and over

for breakfast, lunch, dinner. While that can simplify meal making and grocery shopping, it's not the right strategy for optimum health. In particular, the microbiota of the gut (collectively called the gut microbiome) needs a variety of foods to flourish. A case in point is a study that appeared in the February 2020 issue of *BMJ*. Researchers profiled the microbiome of 612 men and women ages 65 to 79 and found their microbiomes were low in diversity. The subjects were assigned to eat a Mediterranean diet (MedDiet) for one year. At the year's end, researchers found that the diversity of microbes was much more plentiful. The diverse gut microbiome was positively associated with several markers of lower frailty and improved cognitive function, and negatively associated with inflammatory markers including C-reactive protein and interleukin-17. In other words, following a MedDiet was linked to increased antioxidant activity, reduced incidences of several diseases, and lower inflamma-

tion. The MedDiet promotes eating a variety of vegetables, legumes, fruits, nuts, olive oil, and fish. It is low in red meat, dairy products, and saturated fats.

A study published in the January 2020 issue of *Neurology* looked at how health-promoting plant compounds known as flavonols may reduce the risk of Alzheimer's later in life. The study included 921 participants, average age 80, who were divided into two groups based on the amount of flavonols in their diets. Participants in the group with the highest flavonol consumption (about 15 mg per day) were less likely to develop Alzheimer's dementia later in life compared to participants with the lowest level (5 mg per day). Foods high in flavonols include olive oil, beans, kale, spinach, tomatoes, pears, and oranges.

Fiber intake was assessed relative to managing blood sugar and diabetes in a study published March 6, 2020, in *PLOS Medicine*. British researchers scoured data on more than 10,000 study participants with prediabetes and diabetes and compared people who consumed low-fiber diets (19 grams per day) with those who ate high-fiber diets (35 grams per day). Those who ate more fiber had lower levels of blood sugar, cholesterol, and inflammation, and body weight.

Butternut Squash and Lentil Stew

2 Tbsp olive oil
2 medium onions, chopped
8 cups low-sodium chicken or vegetable stock
2 bay leaves
1 cup brown lentils
4 cups butternut squash, peeled and cut into ½-inch cubes
1½ cups no-sodium-added tomato purée
5 cups stemmed, chopped kale
½ tsp salt
¼ tsp pepper

Heat olive oil in a large pot over medium-high heat; add onions and cook, stirring frequently, until they turn deep brown. Add remaining ingredients, except kale, to pot. Bring to a boil; then reduce heat and simmer for a minimum of one hour, until lentils are soft and squash begins to break down. Then add kale. Remove bay leaves before serving.

Yield: 8 servings. **Nutrition information per serving:** 234 calories, 6g total fat, 1g sat fat, 14g protein, 36g carbs, 6g sugar, 11g fiber, 254mg sodium



Adding More Veggies into Your Diet

Hunnes offers a number of tips for building a more plant-based diet. For example, she suggests replacing dairy products with non-dairy alternatives, such as those made from soy, flax, walnut or almonds. Surprisingly delicious "burgers" can be made from beans, and there are many recipes online to try. Eating with the seasons inherently contributes to diet variety.

"Some of my favorite fall meals to make include pumpkin soups," says Hunnes. "You can use any winter squash for it. I add apples, onions, apple juice, ginger, and coconut milk. For dessert, Braeburn and Cortland apples work well in pies or simply baked on their own." ■

Memory Boosters —cont. from page 1

yourself to see which of those you can recall. If you watched with someone, discuss some of the details with them. A similar practice is to remember small details of a conversation with a friend, such as a mentioned dinner plan or doctor's appointment. The next day call and ask how it went.

FRAME: Make New Information Meaningful and Memorable.

This technique asks you to focus your attention and create a framework for that information. This idea can be useful for remembering names. It works like this: When you are introduced to someone, take note of the name and associate it with something that will help you recall that name. For example, you meet a man named Jack and he's very fit, so you imagine him doing jumping jacks. For names that don't evoke an obvious image, make up a little story, perhaps the woman named Elizabeth has piercing blue eyes reminiscent of Elizabeth Taylor.

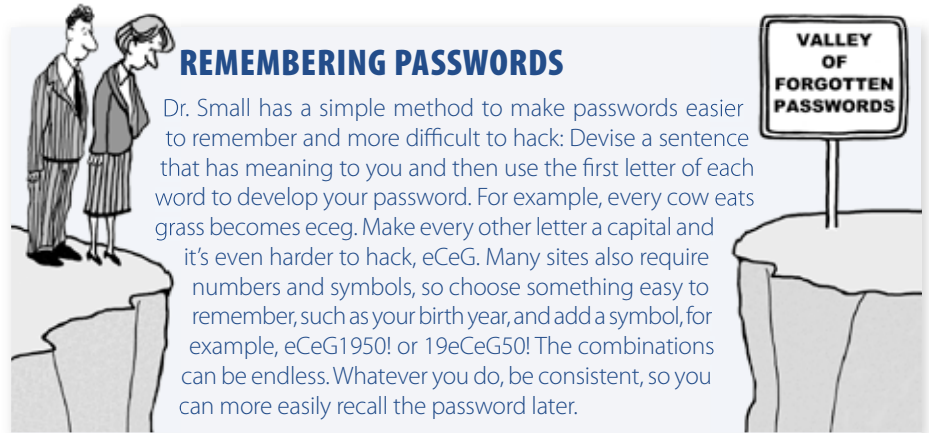
Memory Story Game

These two concepts can be expanded and applied to other, more challenging memory tasks. For example, use focus and frame to memorize the following list of random words by creating a story that links them together. After you've developed the story, don't look at the list, and try recalling as many words as you can through your own made-up story.

- Lamp
- Dog
- Rowboat
- Coffee
- Newspaper
- Red

This entertaining exercise is creative and builds memory skills. Here is an example of how it can be done: The dog knocked over the lamp when he ran out to the red rowboat, where he found you drinking coffee and reading the newspaper. Creating such as a story makes it much more likely that you'll successfully recall a list of words. In practical terms, you can use the strategy to remember a grocery list or several errands you need to run.

If you're the type of person who constantly searches for such items as



car keys, reading glasses, or your cell phone, Dr. Small recommends designating a “memory place.” Keep these items in a particular location all the time. For example, the keys always go in the bowl by the front door, the cell phone sits in the charger on the kitchen counter, the eyeglasses are on the nightstand when not on your face.

Stimulate Your Brain

There are many pursuits that can be mentally stimulating and beneficial to brain health. Explore your personal interests. For example, learning a new language, playing an instrument, and bird watching can all be meaningful ways to engage the brain.

“Activities should be fun, engaging, and neither too easy nor too hard,” recommends Dr. Small. “I like newspaper crossword puzzles, which get more difficult as the week goes on. I used to enjoy Tuesday through Thursday. But Tuesdays are boring to me now, so I do Fridays.”

Finding the sweet spot or the engaging difficulty level of a brain game is important because if something is too difficult, it can become frustrating and anxiety-inducing. It would be silly to try to run a marathon without training for it. Likewise, you need to start where you are now and meet small goals to build mental skills. Experiencing successes along the way provides confidence and motivation to continue. Many video games are designed that way. Completing a beginner level rewards players by moving them to the next level of challenge. Success inspires and motivates people to move forward.

Brain Games Investigated

Formal cognitive training has many demonstrated benefits. A few years ago, the National Institute on Aging funded the Advanced Cognitive Training for Independent and Vital Elderly (ACTIVE) trial included 2,802 healthy adults ages 65 and older participated in 10 sessions of memory training, reasoning training, or processing-speed training. The sessions improved participants' mental skills in the area in which they were trained. Many of these improvements persisted 10 years after the training was completed. According to the researchers, the value of ACTIVE and similar preventive cognitive interventions is that they may preserve the cognitive resources shown to be effective both in maintaining functional competence and in coping with functional impairments. In other words, brain games and mentally stimulating activities can help your brain function better, provide strategies to overcome occasional forgetfulness, and may help you maintain a higher quality of independent living.

Medical centers nationwide offer brain-training programs. Online possibilities include Dakim Brain Fitness (www.dakim.com) and virtual courses offered online through the UCLA Longevity Center (semel.ucla.edu/longevity). Keep in mind that for the best possible outcomes, these games should be part of an overall lifestyle that includes a healthy diet, socialization, and physical exercise. ■



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Q I'm 75 and have an upcoming surgery. What are the risks of anesthesia at my age?

A Aging does change how the body reacts to medications, and that includes the use of anesthetics. The side effects, usually temporary and mild, will depend upon the type of anesthetic used and your current health status. For example, people with chronic conditions, such as diabetes, are at greater risk for side effects. The main types of anesthesia are referred to as local, regional, intravenous (IV) sedation, and general anesthesia. Local anesthesia numbs just a small area, for example an injection into the gums for a dental procedure. Regional anesthesia numbs a larger section of the body, for example everything below the chest for an abdominal surgery. Though you may be drowsy, you remain aware. IV sedation, also called monitored anesthesia, relaxes the entire body and makes a person drowsy. It's often used during colonoscopies and is sometimes referred to as "twilight sleep." Major surgeries, such as open heart surgeries and hip replacements, require the use of general anesthesia, which temporarily blocks the brain's ability to feel pain and causes loss of consciousness. Possible side effects of regional, IV monitored, and general anesthesia include grogginess, slowed reflexes, headache, and nausea. In older adults these effects can last a few hours or perhaps a day. These anesthetics have also been associated with impaired thinking and a type of disorientation known as delirium that may last for days, months, or longer. This is not caused by the anesthesia. It could be that an underlying cognitive issue has come to the forefront, or that the delirium was caused by an event during the procedure, such as a stroke or heart attack. Currently, it's not always known what exactly causes this outcome, but it is an active area of research. It is known that people with existing memory problems are at greater risk for delirium. If that's the case, it's wise to consult with the doctor or surgeon about delirium-prevention procedures. It's also helpful to have a loved one in the recovery room to help reorient you after the procedure.

Q I want to boost my immune system as much as possible. What do you recommend?

A There is plenty you can do, and this is great time to be diligent about immune health. Though you can get the flu anytime, the official flu season begins in October and can run through April. February tends to be the peak month. There also are ongoing concerns about the novel coronavirus, COVID-19. Proper handwashing and other safety measures recommended by local health authorities help reduce the risk of contact with pathogens that cause illnesses and reduces spread to other people. Annual flu shots are also recommended. As for boosting immunity, what you eat and do play a significant role in your overall health, including your immune system. No specific food or supplement will absolutely protect against colds and flu. Research suggests that eating a variety of healthy foods is what nourishes the immune system. Many people eat less as they get older and tend to eat the same foods every day, which can lead to what's called micronutrient deficiency. The Mediterranean and the DASH diets provide a variety of nutrient-rich choices such as apples, broccoli, spinach, dark-colored berries, celery, citrus fruits, grapes, onions, parsley, olive oil, salmon, and nuts. Ongoing research into the microbiome of the digestive tract is revealing how important gut health is. Probiotics in the gastrointestinal tract help reinforce the barrier function of the intestinal lining. That lowers the chance of bacteria in the intestines from entering into the bloodstream, where bacteria can cause serious problems. Probiotics can be found in yogurt, kefir, kombucha, and some other fermented foods. Avoid products high in added sugar by checking nutrition labels. Finally, exercise is excellent for facilitating blood flow. Good circulation enables cells and substances of the immune system to more efficiently reach and sweep through the whole body. Exercise also helps reduce stress and promotes better sleep, both of which can help keep the immune system functioning better. Aim for 30 minutes of moderate-intensity exercise most days of the week. ■

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Muscle up your immune system.

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