

# EXERCISE ... YOUR WAY SHARPER

A crossword puzzle is good, but working up a sweat makes you smarter (and healthier overall), too.

BY KARLA WALSH

Activities that improve balance can increase volume in key areas of the brain, including the hippocampus.

**MOST AMERICANS TURN TO EXERCISE AS A WAY TO LOSE** weight. But doesn't it sound much more tempting (and, to be honest, much less punishing) to flip the script and talk about what exercise helps you *gain*? Near the top of that list would be healthy years, according to a 2021 study published in the journal *iScience*. Also: sharp years. That's right, in addition to benefiting your body, physical activity is one of the best ways to boost your brain health.

"During exercise, your muscles require energy to contract and generate movements," explains Veronica Guadagni, PhD, a postdoctoral fellow at the University of Calgary's Cumming School of Medicine in Alberta, Canada. "To meet the body's increased energy demands, the brain signals the heart and lungs to increase your heart and breathing rates. Arteries that supply blood to the muscles vasodilate, or increase in diameter, while others that supply blood to other organs that don't require as much energy while exercising vasoconstrict, or get smaller. As a result, overall blood flow to the

body and to the brain increases and cognition improves after as little as six months of regular exercise."

Think of this extra blood flow like "brain fuel." The more blood that flows to the brain over time, the larger the brain's volume—the more dense with connections in certain areas—becomes, especially within areas involved with memory and learning, says Guadagni, who has spent her career in labs conducting research related to this exact connection. The brain also becomes more like an interstate with thousands of exits rather than a slow, winding, isolated highway; each time it's challenged, it builds new connections between different areas of the brain.

Yet regular exercise—ideally notching 150 minutes of moderate intensity or 75 minutes of vigorous intensity aerobic exercise, plus two full-body strength training sessions each week—is something that only 23% of Americans get enough of, according to the Centers for Disease Control and Prevention.

## ● THIS IS YOUR BRAIN ON EXERCISE

Besides increasing blood flow and building those brain "bypasses" we mentioned, neurology experts point to all of these research-backed cognitive benefits of exercise:

- Decreases levels of stress hormones while increasing levels of energy-boosting hormones
- Improves focus and attention/concentration
- Expands the size of the hippocampus (a brain region involved in learning and memory) and prefrontal cortex (responsible for personality, planning abilities and more)
- Protects the brain from aging by reducing or delaying the onset of cognitive decline
- Boosts mood
- Makes sleep easier
- Spikes levels of neurotrophic factors, "similar to green juice for cells," which make existing brain cells healthier and stimulate the birth and maturation of new neurons
- Lowers levels of chronic inflammation

Physical activity is a key part of the prevention plan for both cognitive decline, which can progress into dementia or Alzheimer's disease, and neurodegenerative disorders, such as Parkinson's disease. And you don't need very much:

- Brisk walking for just 30 minutes three to five times per week for one year slows cognitive decline among those with mild cognitive impairment, according to a 2021 study published in the *Journal of Alzheimer's Disease*.
- Getting two-and-a-half hours of exercise per week, the equivalent of five 30-minute workouts, leads to a smaller decline in both quality of life and mobility (compared to those who don't get enough exercise) among those diagnosed with Parkinson's disease, per a 2017 study in the *Journal of Parkinson's Disease*.

## ● THE BEST WORKOUTS TO BOOST BRAIN POWER

As far as your mind is concerned, any movement is better than none, but certain workouts make bigger deposits



## GO AHEAD, BE A POSER

In addition to doing cardio and strength, a mobility and flexibility practice can be a big boon for your brain. “Yoga creates and strengthens neural pathways that are key to memory, attention, awareness, thought and language,” explains yoga therapist Ali Popivchak. To get your neurons firing in addition to boosting circulation and relaxation, try the following poses.



### Tree Pose (Vrksasana)

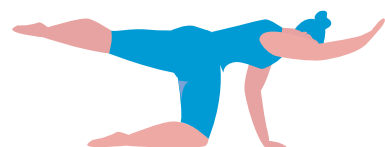
Standing on a mat, inhale, place hands on hips, draw shoulder blades down and together, and find a focal point for your gaze. Press down firmly through the sole of your left foot to feel “rooted” as you lift the right foot and press it against the left inner calf (easier) or inner thigh (challenge). Keeping pelvis squared, press your foot and leg together, feeling yourself grow taller. Bring palms together in front of chest or overhead. Hold for 30 seconds, taking deep and steady breaths, then switch sides and repeat.

extend your right arm forward and left leg back so they’re parallel to the floor. Hold here as you breathe, keeping your core tight so your belly doesn’t sink toward the floor. Take three to five breaths then switch sides and repeat.



### Eagle Pose (Garudasana)

Stand with feet hip-width apart. Cross your left leg over the right and bend knees. Tuck left toes behind right ankle if you can or rest leg foot next to your calf. Raise your left arm in front of you, elbow bent 90 degrees, and bring the right arm, elbow bent as well, on top of the left. Rest the backs of your hands together or try to interlace the hands so your palms touch. Draw your shoulder blades down as you lift your elbows to increase the stretch through your back. Hold for a few breaths, then switch sides and repeat (right leg over left and left arm on top of right).



### Bird Dog (Bharmanasana)

Get on your hands and knees, wrists aligned under shoulders and knees under hips. Find your stability here then

Keeping muscles strong as you age is crucial for fending off all sorts of health problems.



in your brain bank. “The majority of studies have been conducted on aerobic exercise, so it’s difficult to make a fair comparison due to the sheer difference in research,” explains Chelsea Stillman, PhD, research assistant professor and health neuroscientist at The University of Pittsburgh Brain Aging & Cognitive Health Lab. “Since both aerobic and strength exercise improve cardiovascular fitness, there are some overlapping benefits in the brain from both forms of exercise. However, there may also be some benefits unique to strength training. We just haven’t zeroed in on exactly what those benefits are yet.” (Both sarcopenia—age-related muscle loss—and dynapenia, which is age-related decline in strength, have been linked with cognitive decline.)

A mounting body of scientific evidence suggests that a combo of cardio and resistance training might impact the metabolism in a way that delivers an even bigger brain boost than either one alone. (Boot camp, for the win!) “Regardless of the type of exercise, the key common denominator is an increase in blood flow to the brain,” adds Jennifer Beckjord, PsyD, the senior director

for clinical services at UPMC Western Psychiatric Hospital in Pennsylvania, which you can accomplish through any activity you like.

Any workout—such as dance, Pilates or yoga (see sidebar, left)—that combines cardio and coordination (and requires learning and memory) engages the brain much more than repetitive exercises that you can do on autopilot, such as spinning away on a stationary bike.

Novelty and social connections also feed the brain, says Komal Naik, DO, a neurologist and the department chair of neurosciences at Summit Health in New Providence, New Jersey. So don’t be afraid to spice things up by trying something out of your mental and physical comfort zone—and grab a pal while you’re at it.

“Changing up workout routines can help keep your neural pathways on their toes and keep your body from getting too used to the same routine. Find exercise you enjoy and look forward to, and don’t be afraid to try something different,” says Naik.

“Staying socially active is also incredibly important, so join in group classes, either in-person or virtually, to build

community,” adds Ali Popivchak, C-IAYT, a yoga therapist and the owner of Pittsburgh Yoga Therapy. Going for walks with friends or playing pickleball are also two-for-ones.

Habits we establish during young adulthood and middle age direct the course of our aging brain, but as those neurodegenerative disease studies prove, it’s never too late to start sweating your way smarter. In one 2019 study, published in *Medicine & Science in Sports & Exercise*, researchers found that even a single 20-minute cardio workout was enough to improve working memory and cognitive functions among people 60 to 80 years old. And just think of the gains you’ll get if you do even more.

Another benefit of exercise? If you’re overweight or obese and shed just 10% of your body weight, you’ll get more blood flow to your brain both during and at rest than you do at your current weight—along with all the brain bennies above, according to a July 2021 study in *Psychophysiology*.

*Karla Walsh is a freelance writer based in Des Moines, Iowa, who writes frequently about health, fitness and food.*