



Exercise to Sculpt Your Brain (and Outwit Cognitive Decline)

You're sharing a juicy story with a friend and find yourself stuck trying to recall a word from deep in the recesses of your brain.

It's there — just out of reach. You both laugh about it, but your story doesn't quite land. No big deal, right?

Except that during the same conversation you also forgot the name of the business contact you wanted to share and your phone buzzed, reminding you of a meeting you're supposed to be in. It's been happening a lot lately, and it's just not like you. You consider whether you're extra stressed or overtired. You wonder about your brain health...and then try not to.

After all, until fairly recently science told us that we could do little about cognitive decline. Part of the problem was the assumption that that we were born with a certain number of brain cells and never grow new ones. This myth was gloriously dispelled when researchers discovered a protein made in our bodies that not only protects existing brain cells but also causes shiny new brain cells to grow. Hallelujah!

This apparent brain fertilizer is called **brain-derived neurotrophic factor (BDNF)**, and it acts like Miracle-Gro for our gray matter. In addition to helping us store and recall information, BDNF offsets the negative effects of stress on our brains, acts as a natural antidepressant, supports our brain's circulation, and protects us from neurodegenerative diseases. Unfortunately, studies have shown that BDNF decreases with age, and that decrease might contribute to age-related cognitive impairment.

Now the good news! In the 1980's, ingenious researchers sprinkled BDNF onto neurons in the lab and — voila! — they spontaneously

sprouted *new* branches. Since then, science has been looking for ways to increase BDNF.

What have they found? You don't have to be a lab rat to grow your brain — but being a gym rat is helpful. It turns out that one of the best ways to make more brain-protecting BDNF is exercise! So how do you tweak your workouts to boost brain health?

Cardiovascular exercise *is* good (the type of cardio doesn't make a difference), but adding **resistance training** to it grows your brain more. And the type of resistance training does make a difference.

WHAT THE LATEST BRAIN HEALTH RESEARCH SHOWS

1. Hypertrophy-type resistance training is better than strength-type resistance training. Translation: More muscle fibers, not stronger ones, make more BDNF. Less sets, with more reps, to fatigue, and shorter rest periods protects your brain more. Try **high-intensity interval training** for a brain boost.

2. Lower-body-only exercises make more BDNF than a full-body workout, and both are better than upper-body-only workouts. Takeaway: don't ignore your upper body, but be sure to emphasize the large muscles of your lower body. Include weighted lunges and squats and single-leg balance exercises. Get your grippy socks on and take some

bar classes to plié your way to a sculpted bottom, legs, *and* brain.

3. A single workout increases BDNF, but the benefits are short lived. Well, that's sort of obvious: We can hardly expect to have a super brain with just one workout. BDNF does accumulate though, so **regular workouts that challenge muscles** are indeed shaping your brain and giving you long-term benefits.

4. Brains love fresh air and sunlight, and grow from mental stimulation, cross-body movements, balance challenges, fluid movements, and breathing exercises. Your brain-boosting exercise plan should include:

- **Outdoor workouts in natural spaces.** Whether boot camp in the park or on the beach, trail walking, skiing, or snowshoeing, the changing scenery and uneven surfaces of natural spaces add an extra level of challenge and novelty that helps your brain pay attention and stay sharp.
- **Balance challenges and cross-body coordination.** TRX suspension training and strength-training with free weights using a

physioball will boost your brain more than machines.

Use cables for upper-body exercises while balanced on one leg for brain benefits. Switch legs each set. Add two minutes of bear or leopard crawling to your workouts for fun and brain health.

- **Fluid exercise and breath work.** Swimming, flow yoga, or breathing techniques such as Wim Hof exercises strengthen and protect your brain's blood vessels.

MINIMIZE THE THINGS THAT SUPPRESS BDNF

There are a few key stressors that act like Kryptonite for your brain. They raise cortisol, halt formation of new brain cells, and reduce brain circulation. Do your best to minimize these 4 S's that sabotage brain health:

1. Stress
2. Sugar and alcohol
3. Sleeplessness
4. Social isolation



Dr. Kimberly Higney helps patients restore their hormone health and metabolism through functional medicine and therapeutic nutrition. She has a private practice on the Seacoast of New Hampshire. For more information visit www.cardeaseacoast.com