

# COACH *Notes*



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Newsletter

## Build a Better Brain: Exercise Builds Brain Cells

Experts worldwide are jumping on the brain bandwagon, eager to teach you about the neuroscience of happiness, the brain science of managing, and brain tips for peak performance.

It's an exciting time. As knowledge workers in the 21st century, our success depends on having a healthy, functioning brain.

But if you've read a few of the latest articles on brain science, you may find yourself scratching your head, wondering what you should be doing differently.

Science can now answer this question, having made incredible strides over the last 5 years. While many previously thought our brains steadily deteriorated after age 25, this turns out to be false. Researchers have proved the brain can grow new neurons and tissue well into old age, as long as we pay attention to four key areas:

1. New learning and thinking
2. Physical health (muscles, cardiovascular system)
3. A healthful, balanced diet
4. Low stress, emotional stability and high happiness levels

While you cannot stop aging, you can prolong your brain's healthy function. The No. 1 method is to create a healthy environment for the brain to thrive. It turns out that the same things that keep your heart healthy, keep your brain in good shape.

This article will discuss how physical activity influences the health of your brain, followed by future articles on the other three domains.

## Your Body, Your Brain

Brain health depends on a regular practice of aerobic exercise. Researchers have not yet established a definitive guideline, but most agree on 30 minutes, at least three to four times a week, to elevate heart rate.

If you're exercise-phobic, disabled or just plain stubborn, it will be more difficult to maintain a healthy brain in the long run.

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*At Herdlinger Associates, I encourage people to dream. And the positive results have been astounding!*

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*As a coach, I don't try to make my clients' dreams come true. That's their privilege...and responsibility.*

*My role – and my joy – is to stand by their side to encourage, guide, challenge, and cheer them on.*

*Are your dreams big enough? Let me help you unleash your potential and accomplish more than you ever dreamed possible.*

*...David Herdlinger*

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Regardless of your current exercise habits, you'll need to accept this irrefutable fact: Your brain will deteriorate with age unless you engage in some form of regular exercise or sport.

Sedentary people lose brain cells more quickly and are susceptible to loss of focus and concentration, memory lapses and learning difficulties. They also have a far greater chance of developing personality problems, mood disorders, attention disorders and, in worst cases, dementia and Alzheimer's disease.

Crossword puzzles and Sudoku aren't enough to stave off deterioration. You need to get your body moving.

## Why Physical Activity?

Physical activity is crucial to the way we think and feel. Research studies reveal:

- Exercise cues the building blocks of learning in our brains.
- Exercise affects mood.
- It lowers stress and anxiety.
- It improves our ability to pay attention, focus and concentrate.
- It helps stave off the deleterious effects of hormonal changes.

Some readers may be familiar with the term "runner's high"—the notion that joggers and walkers experience a rush of endorphins (brain peptides) that make them feel terrific. An exercise-associated increase in endorphin production has been measured in lab rats as well as in people.

Researchers have also found that exercise increases levels of neurotransmitters like serotonin, norepinephrine and dopamine, which help regulate mood and emotions.

People who have low levels of these neurotransmitters often suffer from clinical depression and stress, which can erode the connections among the brain's billions of nerve cells. Chronic depression actually shrinks certain areas of the brain.

Conversely, exercise unleashes a cascade of neurotransmitters and growth factors that can reverse this process. Think of the brain as a muscle: It grows with use, and it withers with inactivity.

## The Body-Mind Connection

When we move our muscles, proteins travel through the bloodstream and into the brain. They play pivotal roles in our complex thought processes.

Your brain is like an air traffic controller, running the show. Right now, your frontal lobes are firing signals. The degree to which you soak up the information in this article is determined by the balance of neurochemicals and growth factors in your brain.

Exercise has a documented, dramatic effect on these

essential brain chemicals. Chances are, if you've already completed 30 minutes of exercise today, your brain is a highly motivated sponge that's primed to receive, organize and store new information for future retrieval.

Understanding the physiology can help you think of exercise as something you need to do, not something you must begrudgingly do. And once you get started, you'll begin to think of it as something you want to do — now and in the future.

## The Research

Numerous studies support the aforementioned claims:

- In October 2000, Duke University researchers found that exercise is as good as, and in some cases, better than sertraline (Zoloft) in treating depression.
- In Naperville, Illinois, a revolutionary high school physical education program transformed the student body into one of the nation's fittest. While 30% of all U.S. teens are overweight, the Naperville students were only 3% overweight. And in 1999 international math and science competitions, these fit teens took sixth and first place, respectively.
- Carl Cotman, director of the Institute for Brain Aging and Dementia at the University of California at Irvine, has studied long-term aging to find commonalities among people whose minds remain sharp. Those with the least cognitive decline share three factors:
  1. Education
  2. Self-efficacy (a personal sense of control over one's life)
  3. Exercise
- A 2007 study found that people who exercise learn vocabulary words 20 percent faster — a rate of learning that correlates directly with levels of *Brain Derived Neurotrophic Factor*, (BDNF), a protein so powerful that it's been dubbed the "Miracle-Gro" of the brain.

Before these studies, psychiatry had accepted the idea that exercise could probably help improve our minds by creating a conducive learning environment. Now, researchers know that exercise strengthens the cellular machinery of learning, staving off the effects of stress and aging.

No matter what your current physical exercise habits are, it's time to get moving. Just like the dentist who advises, "Only floss the teeth you want to keep," perhaps it's time to "only exercise if you want to keep those brain cells."