

## Exercise Promotes a Healthy Brain

Oxygen is essential “brain food.”

Some time in our early 30s, our brain tissue begins to deteriorate. The decline continues over the next 60 years, so that by the time we celebrate our 90th birthday, about 25% of our brain tissue has been lost in areas that affect memory, learning, and other thinking functions. Now, for the first time, researchers have physical proof that being physically fit can slow the loss of brain tissue due to aging.

Sixty-eight people, age 55 to 79, took fitness tests and brain magnetic resonance imaging (MRI), as part of a study by researchers at the Beckman Institute at the University of Illinois at Urbana-Champaign. The volunteers were all well educated and ranged in fitness level from the very sedentary to competitive athletes.

By comparing their MRIs, researchers found greater amounts of gray and white matter in the active subjects. Gray matter is important in learning and memory, while white matter transmits signals throughout the brain.

Cardiovascular fitness may help the brain stay young by increasing the growth of new blood vessels that feed the brain and by encouraging more connections between brain cells and, therefore, more processing power.

You don't have to be a track star to reap these benefits, says lead author Stan J. Columbe, a cognitive neuroscientist at the University of Illinois: “Just 15 to 20 minutes of *moderate activity*, such as walking, three times a week is enough to produce a benefit.”

This study was published in the *Journal of Gerontology: Medical Sciences*. Other studies support the findings, but recommend exercising 4 or 5 days a week to improve and sustain cardiovascular health.

### How does exercise translate to more brain power?

Every cell in the body requires a continuous supply of oxygen and nutrients to run at peak performance. But no cells in your body need a greater supply of oxygen than the gray (and white) matter between your ears. The brain makes up only about 3 percent of your body weight, but requires 20 to 25 percent of all the glucose and oxygen we consume. Let yourself get out of shape, even a little, and the system that delivers nutrients and oxygen to your brain break down. The heart gets sluggish, arteries clog



with cholesterol, and blood flow in the tiny capillaries that feed brain cells can slow to a tiny trickle. Just like a computer without a large enough power supply, the mind slows because brain neurons can't transmit electrical signals fast enough to support memory.

But brain function and memory loss doesn't have to be part of getting older. In a study at the Neuropsychology Research Laboratory at the Veterans Affairs Medical Center in Salt Lake City, Psychologist Robert Dustman looked at the electrical brains activity in two groups of elderly people; one athletic, the other sedentary. Dustman found that the brain waves of the athletic group more closely resembled those of younger people. Older adults who had adopted regimens of regular, moderate activity, remained aerobically fit and performed as well as their younger cohorts on mental alacrity tests such as memorizing numbers and symbols.

But what if you've been mostly sedentary your whole life? Dustman says that even after years of inactivity, people can quicken their minds with exercise, but not over night. The key is to add physical activity to your daily routine and make it a habit for life.

### How do you know when you are exercising moderately?

While a 20 minute walk three times a week is better than no walk at all, it takes *moderate effort* to reach a cardiovascular-exercise level. What's moderate for one person may be different for another. The easiest way to get your heart rate up to a cardiovascular level is to walk as though you were in a great hurry, for example, as if you were about to miss that plane! And don't forget to add variety! Try square or ballroom dancing, step aerobics, or riding a stationary bike.

TEAM SAFETY, INC. is a safety and performance management firm working to build organization excellence.

Visit [www.teamsafetyinc.com](http://www.teamsafetyinc.com).