



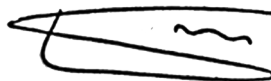
# Weill Cornell Medicine Neurological Surgery

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with Dr. Phil Stieg**  
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**T**hose of us who have had the good fortune to reach age 50 (or 60, or beyond) know that there are some significant changes that take place over time, even in the healthiest of bodies. We need to pay more attention to, and take better care of, our knees, heart, and other body parts as we get older, because they're just not as young as they used to be.

The brain is no exception. As your brain ages the cortex thins, processing speed slows, and signaling pathways weaken. The good news is that functional and cognitive decline are not inevitable. Just as a heart-healthy diet can stave off cardiac problems, a brain-healthy life can help prevent age-related diminishment in cognition, memory, speech, and even happiness. This guide covers how physical fitness can contribute to your brain's health, with practical advice on what to do—today and every day—to keep your brain working well.



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## Your Guide to Exercise

### What Happens When You Exercise

You know that exercising is good for your heart, your muscles, and your weight—and like anything that's good for your heart, it's also good for your brain. The most obvious benefit is that activity that increases your heart rate improves the flow of oxygen-bearing blood to the brain, and a well-oxygenated brain is a healthy brain. But there is more.

Regular physical exercise can help maintain your brain's volume—as in, it slows down the shrinkage that's a natural part of aging. Research also shows that regular aerobic activity increases the size of the hippocampus, the area of the brain involved in verbal memory, learning, and emotions. Working out also boosts production of brain-derived neurotrophic factor (BDNF), a protein that helps your neurons grow and differentiate. Exercise has been shown to increase levels of serotonin, dopamine, and endorphins (the “happiness chemicals” that ward off depression and anxiety) and lower the levels of the stress hormone cortisol (an excess of which speeds up the aging process).



### And When You Don't?

Science has long known that a sedentary lifestyle is an unhealthy one. Many researchers are now going so far as to say that “sitting is the new smoking” to emphasize the increased risk of obesity and certain cancers that are associated with a sedentary life. Without exercise, you are at increased risk for cardiovascular disease and high blood pressure, which in turn can lead to stroke—also called a “brain attack”—that can cause significant damage and disability. Even if you are lucky enough to avoid a stroke, lack of exercise can lead to depression and diabetes, and create inflammation in your brain.

### What to Do

First and foremost, get up! Avoid long periods of sitting—including at work or in front of the TV—and take regular breaks to get up and walk. Beyond that, develop a fitness routine that works for you. The best brain workouts incorporate different parts of the brain (coordination, rhythm, and strategy) like dance or tennis, but any physical activity helps. Current recommendations call for 30 minutes of moderate physical activity most days of the week, which can be broken into shorter periods (like three 10-minute workouts). Aim for a total of 150 minutes a week.