

PHYSICAL ACTIVITY & THE BRAIN

HOW KEEPING YOUR BODY FIT
SUPERCHARGES YOUR BRAIN HEALTH



By The American Institute of Health Care Professionals, Inc.

Table Of Content

- 1 Introduction**
- 2 How Physical Activity Boosts Brain Power**
- 4 Why Fit People Have More Efficient, Productive Brains**
- 6 How Exercise Can Help You Beat Stress**
- 7 Exercise Can Power Your Brain for Success in Any Field**
- 8 What Exercises and Physical Activities Are Good for the Brain, and How Long Should I Be Working Out?**

Introduction

Can you really lift weights to create a more limber brain? Can you huff and puff your way to a healthier mind? Does swimming make your brain strong, and can you walk your way to mental wealth and health? Can hitting the dance floor regularly, gardening until you sweat or walking around the block while you enjoy a conversation with a friend lead to better memory and less mental decline as you age?

The answer to all those questions is a resounding yes!

This short report will explain a few of the ways that physical activity boosts brain health. Not only does it do so in the short-term, but it makes your brain stronger and healthier years down the road as well. Let's take a look at how the act of human movement creates a stronger brain, and why the brains of fit people are more efficient and productive than the brains of people who are out of shape.

We will also explore how exercise destroys stress and anxiety, how physical activity can increase positive emotions, and how exercise can lead to success in any endeavor. Finally, you will discover what exercises work best to deliver both physical and mental health benefits, and exactly how long you should be working out or moving each week (the answer may just surprise, and delight you).



How Physical Activity Boosts Brain Power

You probably have been told that you can't create new cells once they die, particularly in your brain. It was the popularly held belief that you have a specific number of brain cells when you are born, and that is all you have to work with. Neurologists pointed to the fact that people who suffered traumatic brain injuries usually didn't seem to regain mental abilities associated with the part of their brain that was injured.

There are neurons in your brain which are associated with the learning process. As was the belief with brain cells, people "in the know" said that once neurons die off, you cannot create new ones. As you age, especially after you turn 40 or 50, neurons naturally begin to die. By the time you are in your 80s, the old belief states, you simply won't have the ability to learn that you did in your 20s or 30s.

We now know both of those beliefs are incorrect.

Breakthrough research reported at the end of the 20th century has spawned hundreds of studies in an attempt to support or discredit the work of researcher Fred Gage. Gage worked at the Salk Institute for biological studies in La Jolla, California. Working on the human brain, he showed that new neurons can be produced in adulthood. Incredibly, as much as 6% of the total number of neurons in your brain are born anew each month. They are needed for behavioral learning, and for memory.



Most of the studies that tried to dig deeper than Gage's work all ended up supporting his position – that new neurons and brain cells can be created, and this process happens naturally. However, there is something you can do to improve upon nature's recipe for preventing mental decline, actually making your brain stronger as you age rather than weaker.

The super-secret activity for empowering your brain is exercise.

The more you stay active, the more neurons and cells are created in your brain. And incredibly, the more fit you become, the more neurons you produce performing the same amount of exercise as someone who is unfit. In other words, continue to work on your physical fitness your entire life, and the better your brain benefits, as well as your physical health.

Why Fit People Have More Efficient, Productive Brains

People often argue that they don't have enough time to exercise. Did you know that working out actually produces time? It is true, the more physically fit you become, the more efficient and productive your brain becomes. You learn to do things in a more effective fashion, because your brain is strong and healthy. Physical fitness leads to mental health, and the stronger your brain is, the better it understands how to tackle a specific problem, project or activity, so that you complete it in a time-efficient fashion.

Dr. George Sheehan is an athlete, best-selling author and physician. He tells us that our working memory is limited. Your working memory is "...the capacity of your brain to simultaneously hold and process multiple bits of information." To understand this process, ask your friends to do the following mental calculation while they are walking.

Multiply 33×24 .

The answer is 792, and if you ask someone to perform this simple multiplication in their mind as they are walking, they will either dramatically reduce their walking speed, or stop altogether. This is because that calculation requires all of your working memory.



What does this have to do with fitness levels?

It turns out that people who are physically fit and regularly active have more capable working memories. They also have better cognitive flexibility, and their executive functioning is more capable than in those who are unfit, meaning that they have more efficient, productive brains than couch potatoes. Sheehan's research has been backed up by multiple studies. If you want more free time in your life, you desire to climb the corporate ladder quickly, or simply want to slow down mental decline as you age, stay active. You will be more efficient and productive at everything you do.

How Exercise Can Help You Beat Stress

Stress is natural. It is how your brain and your 5 senses help you survive. When you see things that you perceive as a threat, whether real or imagined, a stress response is created. Unfortunately, if that stress is chronic, high levels of cortisol and other stress-related hormones and chemicals lead to a multitude of health problems, and negatively affect how your brain works.

On the positive side of the hormonal and chemical processes triggered by your brain is exercise. If you are physically active regularly, your brain orders the release of fewer stress-related chemicals, and more hormones and other chemicals which make you feel happy. Your stress drops as your feelings of peace and contentment rise. With fewer stress hormones present, it is harder for inflammation to develop, in both your mind and body.

This is how exercise helps you not only beat stress and anxiety, but also helps your immune system work properly. Your short-term and long-term memory improve, as well as all of your mental functions, and inflammation is not around to cause mental health problems like dementia, brain fog, Alzheimer's, Parkinson's disease and memory loss.

Just think of exercise as a way to keep your brain happy and healthy, because that is exactly what happens when you stay physically active regularly.



Exercise Can Power Your Brain for Success in Any Field

Your brain is the command center of your mental and physical bodies. It controls the levels of hormones and other chemicals in your body that are directly related to your emotional state. Your movements and thoughts are greatly controlled by how healthy your brain is. As it turns out, no matter what field of endeavor you pursue, financially or personally, exercise has been proven to enrich your brain so that it can help you reach whatever goal you desire.

"Physical fitness is the basis for all other forms of excellence."

That quote comes from John F. Kennedy, former president of the United States, and one of the subjects of the famous Harvard Grant study on success. William T Grant founded a chain of United States mass merchandise stores that carried his name. His company grew to more than 1,000 stores across the US. In a desire to find productive managers to run his stores, he funded what would go on to become a groundbreaking study to identify just what makes an effective, productive, successful employee.

Grant met the director of Harvard Health Services, Arlen V Bock, in 1938. At the time, Bock was a student of human physiology. He proposed the concept of physical health as being important for you to succeed in any field or endeavor. He put together a team of researchers that included psychologists and psychiatrists, social workers and doctors, physiologists and anthropologists.

He then chose 268 male college students from Harvard University. He and his research team spent at least 20 hours interviewing each of the young men. Their physical, familial, social and psychological characteristics and traits were measured. Then these men were interviewed regularly for the next 70 years. Every possible physical, mental, career, social and emotional attribute and angle was recorded. After Bock died, psychiatrist George Vaillant took over the directorship of the study.

Across the board, across all social, financial and career metrics, physical fitness in college "... turned out to be one of the most significant factors in predicting success between the ages of 60 and 80." Those young men that developed healthy exercise habits in their late teens and early twenties usually went on to stay physically active throughout their lives.

This boosted their mental and cognitive power, in comparison to people who were not as active. It also led to career success when compared to their peers, success at the highest levels of multiple fields. This is just one of literally thousands of studies conducted across the globe which routinely show regular exercise leads to better memory, slower mental decline as you age, and the creation of more neurons and cells in the brain than if you are not active.

What Exercises and Physical Activities Are Good for the Brain, and How Long Should I Be Working Out?

Dr. William J Evans is director of the Noll Laboratory for Human Performance Research, located at Pennsylvania State University. His research shows that " ... with regular exercise programs, the gains we see in VO₂ max (aerobic capacity) between the old and young are similar." What does that scientific gobbledygook really mean?

It means simply that young and old alike can benefit from physical activity, at least where aerobic capacity is concerned. The term aerobic capacity refers to the highest possible level or maximum amount of oxygen that is taken in by the human body during intense exercises. Why does this have such important implications for mental health?

Expanding your aerobic capacity is super important for a healthier brain. While your brain represents only about 2% of your entire body weight, the brain uses up 20% of the oxygen that your body takes in.

So when you expand the upper limit or maximum amount of oxygen you intake during exercise, your brain thanks you. Regular physical activity is also important, because your level of fitness and wellness naturally drops between 30% and 50% from when you are 30 years of age to when you turn 80. To keep as physically fit and mentally healthy as possible, there is a particular approach to exercise which is required.

A combination of aerobic and resistance exercises work best for powering up your brain.

Aerobic exercise is any cardiovascular-boosting physical activity or exercise which requires endurance. Rhythmic, repetitive movement of large muscle masses over a sustained period of time is what classifies aerobic activity. This means that walking and jogging, running and cycling, dancing and swimming, playing tennis and basketball are all aerobic exercises, if you enjoy them for a sustained period of time.

Weightlifting is the most well-known resistance exercise. When you use resistance to strain your muscles, this is known in fitness circles as anaerobic exercise. They are short lasting, muscle strengthening activities. Body weight training, performing specific movements using just your natural body weight, gravity and resistance, is another form of resistance exercise. Resistance training builds longer, stronger, lean muscle, burns fat and calories and boosts your immune system, and it also leads to better mental health.

The same is true of aerobic exercises, which improve oxygen flow to your brain. Surprisingly, data released in the 21st century shows that you don't need to spend all day lifting heavy weights and jogging to enjoy significant mental and physical benefits.



The Mayo Clinic, United Kingdom Health Services and other global health authorities recommend 150 minutes of moderately vigorous or 75 minutes of vigorous and intense aerobic exercise each week. You should also enjoy at least 20 minutes of resistance exercise 3 times a week.

To judge whether you are experiencing a moderate or vigorous level of physical activity, try this. Build up to a brisk walk. Try to sing while you are walking. Try to talk as well. Once you reach a level where you can talk while walking briskly, but cannot sing, this is a moderate state of exercise. Moderately intense physical activities include ballroom dancing, brisk walking, table tennis and gardening.

During very vigorous forms of exercise, you should not be able to talk without pausing for breath. These types of aerobic activities include jogging at a quick pace, running, swimming laps in your local pool and jumping rope.

As far as resistance training is concerned, your body burns fat, calories and improves your intake of oxygen, boosting your cardiovascular and respiratory systems, for up to 48 hours after you finish working out. This is true even for short periods of resistance training. The above-mentioned body weight exercises, weightlifting and also working out with resistance bands all qualify as brain boosting resistance exercises.



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