



# Your Brain on

# EXERCISE

## Getting Your Sweat On Can...

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a%  
25  
\*

Improve learning and mental performance.



Increase functional activity of the **temporal lobe**, which is responsible for **storing sensory memories**.



Encourage the **pituitary gland** to release **endorphins**.



Reduce the impairment of **brain cells** and **loss of coordination** related to **Parkinson's disease**.



Help prevent and treat **dementia, Alzheimer's, and brain aging**.



Reduce sensitivity to **stress, depression, and anxiety**.



Increase levels of **brain-derived neurotrophic factor (BDNF)**, which **maintains and regenerates** adult nerve cells.



## What Science Has to Say



30  
MINS

of running for **undergrads** resulted in **faster reaction times** and **vocabulary learning**.



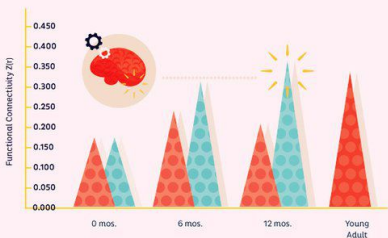
Physically active women, **65+ years old**, were **less likely** to **develop cognitive decline**.



### Aerobic Training Increases Connectivity in the Temporal Lobe

By the end of a one-year study, walkers **improved their brain connectivity** up to the level of college-age young adults.

- Non-aerobic control group
- Participants who followed a one-year aerobic exercise intervention



A 25-year study found that **higher cardiovascular fitness** was associated with **better verbal memory and reaction time**.



**Twice-weekly resistance training** positively impacted the **response inhibition\*** processes.

\* The ability to filter inappropriate responses during a conversation



Patients with **psychiatric disorders** that **practiced yoga or walked** for one hour, three times a week, showed **higher GABA\*** levels, **improved mood**, and **decreased anxiety**. The yoga group showed greater progress than the walkers.

\* GABA (gamma-aminobutyric acid): a neurotransmitter that **promotes relaxation and induces sleep**



## Making Time for PE

THE BRAIN BENEFITS OF EXERCISE FOR KIDS

Studies suggest that **physical activity** is especially important for youth's **developing brains**.



Any form of **physical activity** produced **higher IQ** and **academic achievement test scores** for school-aged children.



Just **10 minutes of exercise** increased 13-16 year olds' **concentration and attention**.



Exercise **reduced symptoms** in children diagnosed with **ADHD**.

**Exercise has both physical and mental benefits.**

While **weight maintenance and strength** are often touted as key motivators for working out, **it can boost your brainpower, too.**

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