

Physical activity: a good medicine for our brain

When we do physical activity (PA), does our brain also exercise? The first step to answer this question is to define physical activity. According to the World Health Organization (WHO), PA is “any bodily movement performed by skeletal muscles that requires energy expenditure”¹. Running, lifting weights, swimming, and playing soccer are some common examples of PA in leisure time. PA also includes all the chores and activities you do in your workplace and at home, such as gardening or lifting things, as well as walking or cycling to commute to different places.

This concept has become very important because it is related to public health. Physical inactivity is responsible for 6% of deaths around the world and WHO stipulates that globally, 23% of adults and 81% of adolescents are not physically active². This means less than 150 minutes of moderate-intensity PA in the case of adults, and in teenagers, less than 300 minutes of PA. In the last years, scientists have revealed a series of benefits of doing enough PA, like improved physical fitness and a reduced risk of cardiovascular disease, diabetes, and some types of cancer³.

The quote “*Healthy mind in a healthy body*” was promoted by the Greek culture many centuries ago, long before modern research, implying that being physically active may help you strengthen your brain. WHO defines mental health as “a state of well-being in which every individual realizes his or her potential, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her or his community”⁴. Although some people may think exercising is only good for the body, scientific literature has established positive effects on mental health. According to many studies regular PA produces physiological and psychological changes that enhance mood state and self-esteem as well as reducing anxiety and stress levels⁵.

Physical activity reduces stress. The type of exercise or sport does not matter, as any of them may act as a stress reliever. According to Mayo Clinic experts, PA can reduce stress levels because it increases the sense of well-being as a result of a higher production of endorphins, known as endogenous opioids, released from the pituitary gland, which are considered to produce a relaxed psychological state known as “runner’s high”⁷. PA can also help increase sleep quality, which is often altered when stressed⁶. Sleep quality is an indicator that influences psychological well-being, health, and quality of life⁸.

Physical activity enhances mood. According to experts, regular exercise increases self-confidence, helping people relax and lower symptoms linked to anxiety and depression⁹. As claimed by WHO, more than 264 million people suffer from depression, which is a mental disorder that affects more women than men and can lead to suicide¹⁰. Regular PA has positive effects on depression comparable to those produced by antidepressant treatments¹¹. Distraction from feelings of depression and anxiety and positive feelings associated with self-efficacy and mastery are some psychological consequences related to regular exercise⁵. Scientists have established that regular participation in aerobic PA, even five minutes, can stimulate anti-anxiety effects⁹.

Physical activity improves brain function. The relationship between exercise and cognitive function and academic achievement in children, adolescents and adults has received special attention. In children, scientists found an association between PA and better cognition and brain function¹². In adolescents, PA improves cognitive and memory functions^{13,14}, and there is evidence of a positive effect in cognitive function in young to middle-age adults¹⁵.

In general, PA reduces stress, depression, and anxiety, improves your mood, helps you sleep better and enhances your cognitive and brain function. So, when we exercise, our mind exercises too. WHO has established physical activity as a determinant of health not only because of its protective effect in reducing the probability of suffering cardiovascular diseases, but also because of the strong evidence linking a healthy mind with being physically active, confirming the truthfulness of the quote “*Healthy mind in a healthy body*” promoted by the Greek culture long time ago.

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