

# Letter to the Editor: The Pundit Speaks

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## “Exercise to Increase Lifespan and Brain Function”

Repeatedly, we find that exercise has a wide array of health benefits. Exercise has been shown to decrease the risk of most major diseases, such as cancer, heart disease, strokes, obesity and diabetes. Among the many health benefits that aerobics brings, some notable ones are weight loss, boosting cardiovascular health, reducing anxiety, and regulating moods. Aerobic exercise is a type of workout that increases the heartbeat and stimulates it to pump more oxygen through the body. Please refer to my book on amazon.com entitled, *Exercise & Reactive Oxygen Species (ROS): Likely the Only Health Miracle Out There*. It gives extensive supportive evidence to the health benefits of exercise, with increased oxygen consumption. A 2019 study found that people with elite-performance cardiorespiratory fitness had an 80% lower mortality risk compared with people with low cardiorespiratory fitness. Any incremental increase in cardiorespiratory function resulted in improvement to mortality. The survival benefit was most notable in patients older than age 70. In this age group, elite performers had a nearly 30% reduced risk of mortality compared with high performers. Cardiorespiratory fitness is a modifiable indicator of long-term mortality, and health care professionals should encourage patients to achieve and maintain high levels of fitness. Now, researchers are finding that brain changes that occur after a single workout are predictive of what happens with sustained physical training over time. There is a strong and direct link between physical activity and how your brain works. The researchers found that those who saw the biggest improvements in cognition and functional brain connectivity after single sessions of moderate-intensity physical activity also showed the biggest long-term gains in cognition and connectivity. Extensive research in mice has shown that prolonged aerobic exercise changes not only the brain's physiology and anatomy, but also can lead to improvements in memory and cognition. More and more evidence is now becoming available that exercise has profound changes on the brain of humans as well. Still, common sense and exercise, as tolerated, needs to be applied in most situations and extremes are to be avoided. Also, aerobic exercise slows down decreasing brain size in older age, helping to maintain cognitive function. Naturally, brain size decreases by around 5 percent every 10 years after age 40, which is also sometimes tied with cognitive decline. It was found that aerobic exercise slowed down the deterioration in brain size. In other words, exercise can be seen as “a maintenance program for the brain.”

In the America that I love, we know that higher physical activity, exercise training, and higher cardiorespiratory fitness not only benefit cardiovascular risk factors, insulin sensitivity, and body composition, but also have potentially profound benefits on brain health and for achieving a longer, healthier lifespan.

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