



Fit For Sisters

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Columnist

This is your brain on exercise

Everyone knows exercise offers physical benefits. It is undisputed that exercise improves the heart, lungs, and muscles. Exercise also can effectively enhance body composition by burning extra calories, and makes changes to become more resilient to metabolic disorders.

However, exercise isn't only working on these systems, and it may have more profound effects on other areas as well.

As one exercises, heart rate, breath rate, and body chemistry adjust. Increased

blood flow, release of chemicals, and mobilization of stored energy all have their hand in nearly every system in the body. Digestion is slowed, blood flow is directed toward our working muscles, and systems switch to support the demands.

Now exercise is being touted as a way to enhance mental health, perhaps allowing someone to think more sharply, more clearly, more concisely. What if exercise helped people overcome depression, and beat back dementia? Can exercise become a proven method to manage these conditions without relying on medication? Exercise science and mental health professionals think so.

It is no surprise that the brain is also affected by changes during exercise. One specific chemical that is released has profound implications — the active protein called BDNF, which Mental Health Daily described:

“BDNF influences a variety of functions including: preventing death of existing brain cells, inducing the growth of new neurons (neurogenesis) and synapses, and supporting cognitive

function. Low levels of BDNF are often problematic and have been linked to Alzheimer's, accelerated aging, poor neural development, neurotransmitter dysfunction, obesity, depression, and even schizophrenia.”

This chemical is increased with exercise. Just 30 minutes of continuous exercise at around 70 percent of heart rate maximum was enough to elicit a significant increase in BDNF.

The benefits don't stop there. The National Institute of Mental Health estimated that 3.3 million people suffer major depression in the U.S. This is the type of depression where a person may draw the curtains, stay in bed, undergoing a feeling of helplessness for extended periods of time. There are also people experiencing mild depression, which is often underdiagnosed. While the normal treatment for depression is pharmaceuticals, there is increasing evidence that exercise can be an effective treatment.

A special health report by Harvard revealed that on a trial between exercise and the antidepressant drug Zoloft, the results were the

same — at about 60-70 percent effective. They assume that the reason is “exercise enhances the action of endorphins, chemicals that circulate throughout the body. Endorphins improve natural immunity and reduce the perception of pain. They may also serve to improve mood. Another theory is that exercise stimulates the neurotransmitter norepinephrine, which may directly improve mood.”

This is a major finding, and should encourage anyone to exercise, whether suffering depression or not. It is likely safe to say anyone might enjoy an improved state of well-being through exercise.

Another surprise is the effect of aging on the brain and the relationship to exercise. Art Kramer of the University of Illinois studied the brains of geriatrics and found that the brains of people who consistently exercised were much healthier. In one study they discovered that starting an exercise

program in older adults increased the size of the brain. Notably, the hippocampus, which is responsible for emotions and long-term memory formation. This has implications for staving off dementia, and possibly the risk of Alzheimer's.

All the group of subjects did to achieve this was a program of consistent moderate exercise similar to the 30 minutes five times a week often recommended by fitness professionals.

Perhaps all this is gospel to the choir and many people reading this are already consistent exercisers. If this is true, affirmation that moderate exercise, around 30-45 minutes, a few times a week is very healthy for the brain shouldn't hurt. Conversely, if exercise is not part of a weekly routine, this may be the perfect reason to get started.

Anyone can enjoy the benefit of better mental health, without special treatment — just get out and start moving.

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