



# Creating Health & Nutrition

## The Interaction Between Depression and Exercise

### Motivational Tip

Find a buddy to work out with to motivate each other and make exercise more fun.

### What Exactly Is Depression?

Depression is a lack of interest or pleasure in normal activities for a period of time. Depression impacts one in five Americans during their lifetime. As of 2015, in the United States 6.7 percent of American adults had at least one depressive episode within the year. For people between the ages of 15 and 44, depression is the leading cause of disability in the United States. Despite these debilitating numbers, out of all the motor neuron diseases, depression only receives one-tenth of the funding. To put that into perspective in comparison to other major diseases, that is only one-hundredth of the funding that breast cancer receives. Because

of the large number of those impacted, there is an increase in research studying the positive effects that exercise can have on patients who have depression. Clearly, this mental illness is a big issue that isn't going away anytime soon and finding healthy and helpful ways to decrease the risk, symptoms, and causes of depression is important.

### Exercise Helps the Body!

Everyone knows that exercise is important for good physical health, but it is also great for mental health. During exercise, the brain releases hormones called endorphins, also known as "feel good hormones." With the release of these hormones, thoughts are typically more positive, which then leads to a more positive mood. Two other factors within the body that can contribute to depression are inflamma-

tion and poor heart health. Increased physical activity improves heart health and greatly helps to reduce inflammation within the body.

### How Exercise Helps the Brain

There are many chemicals and hormones throughout the entire body that maintain not only the body but also the brain. When there are imbalances in these chemicals and/or hormones, mental illness and other health issues can develop. When an individual is experiencing an increase in mental stress, inflammation within regions of the brain occur. There is an increase in inflammation because the mental stress reduces the sensitivity to hormones necessary to be released in order to control and prevent excess inflammation. This then causes imbalances of chemicals and hormones and weakens the immune

system. Regular exercise helps to increase tissue sensitivity to a type of hormone called glucocorticoids that have anti-inflammatory properties. These hormones help to prevent excess inflammation within the brain and muscles. If inflammation is reduced, chemicals and hormones will return closer to normal levels and decrease the risk and effects that depression can have on its victims.

### How to Increase Physical Activity

For some people, getting to the gym is not an easy task and that could be for many reasons: time restraints, financial issues, lack of knowledge in the gym, self-consciousness, etc. If you are one of those people, simply walking more throughout the day can increase your physical activity levels. Take the stairs rather than an elevator, park farther away from entrances at stores,



**PennState Extension**

and find activities that you enjoy to get you moving. For many people, running is a great way to clear the mind and relieve stress. It has many benefits to heart health and physical fitness, which then help the mind be healthier too. Another option to increase physical activity without going to the gym are common body-weight exercises. These can be performed in the comfort of your own home and can be very effective. Push-ups, sit-ups, crunches, lunges, and squats are just a few examples of the exercises that can easily be done in small spaces, without the use of additional workout equipment.

The minimum requirements for a healthy lifestyle are at least 150 minutes of moderate aerobic exercise or 75 minutes of vigorous aerobic exercise per week (about 30 minutes per day, 5 days a week) and strength training for all muscle groups at least twice a week (at least one set of each exercise with a minimum of 12 to 15 repetitions, or enough to tire the muscle). If that amount cannot be achieved regularly, any little bit of extra physical activity is still beneficial.

Aerobic exercises have shown great results in dealing with mental illnesses because they really get the body moving and working. In exchange, inflammation is greatly decreased, and endorphins are increased, which then results in a more positive and happy mood. Keep in mind that regular exercise is important for mental and physical health and should be practiced by all that are capable, but it may not be enough on its own to rid all symptoms and risks for everyone who experiences depression. Additionally, excessive exercise is not beneficial. Contact your health care provider for exercise recommendations that would be suitable for you, especially if you have been sedentary or have a medical condition.

### More Tips

- Research shows you are more likely to stick with the exercise if done with a friend or in a group.
- Do not overexert yourself; move at your own pace.
- Allow yourself to rest when needed; one or two rest days from exercise is helpful for progress.

### Sources

Budde, H., and M. Wegner, eds. *The Exercise Effect on Mental Health: Neurobiological Mechanisms*. New York: Routledge, 2018.

Choi, K., C. Chen, M. Stein, Y. Klimentidis, M. Wang, K. Koenen, and J. Smoller. "Assessment of Bidirectional Relationships Between Physical Activity and Depression Among Adults." *JAMA Psychiatry*. Published online January 23, 2019. doi:10.1001/jamapsychiatry.2018.4175.

Parletta, N. "Exercise does help prevent depression, research shows." *Cosmos*. Published online January 25, 2019. <https://cosmosmagazine.com/biology/exercise-does-help-prevent-depression-research-shows>.

Prepared by Nicolette Vincent, intern. Edited and reviewed by Lynn James, senior extension educator.

### extension.psu.edu

Penn State College of Agricultural Sciences research and extension programs are funded in part by Pennsylvania counties, the Commonwealth of Pennsylvania, and the U.S. Department of Agriculture.

Where trade names appear, no discrimination is intended, and no endorsement by Penn State Extension is implied.

**This publication is available in alternative media on request.**

Penn State is an equal opportunity, affirmative action employer, and is committed to providing employment opportunities to all qualified applicants without regard to race, color, religion, age, sex, sexual orientation, gender identity, national origin, disability, or protected veteran status.

Produced by Ag Communications and Marketing

© The Pennsylvania State University 2019

Code EE0253 4/19pod