**Balancing Hormones with Exercise: The Link Between Fitness and Hormonal Health**

Exercise can impact each system of the body, including the endocrine system. According to [Johns Hopkins Medicine](https://www.hopkinsmedicine.org/health/wellness-and-prevention/anatomy-of-the-endocrine-system#:~:text=The%20endocrine%20system%20is%20a,injury%2C%20stress%2C%20and%20mood.)1, “The endocrine system is a complex network of glands and organs. It uses hormones to control and coordinate your body's metabolism, energy level, reproduction, growth and development, and response to injury, stress, and mood.” Exercise influences hormone production, making the two directly related. Let’s explore a few areas where fitness and hormonal health are related.

**Blood Sugar and Exercise**

Insulin is a hormone that helps our bodies properly use or store glucose. During exercise, insulin production slows down so our bodies can focus on using the glucose for energy rather than storing it for future use. The body will also increase the production of the hormone glucagon during exercise to prevent blood sugar from going too low. Glucagon helps convert glycogen (stored glucose) into usable energy for your workout. This use of glucose lowers current blood sugar levels. One workout can lower blood sugar for up to 24 hours or more ([American Diabetes Association](https://diabetes.org/health-wellness/fitness/blood-glucose-and-exercise#:~:text=Physical%20activity%20can%20lower%20your,see%20the%20benefits%20of%20activity.)2). Consistent physical activity will promote lower, more stable blood sugar numbers. If you have diabetes, you should monitor your blood sugar levels before, during, and after exercise. Monitoring will help ensure a better understanding of how your body responds to varying types and durations of activity.

**Stress and Exercise**

During stressful times, the body releases the cortisol hormone as a natural response. This hormone helps manage metabolism, inflammation, blood pressure, and blood sugar so our body can adapt and cope during stressful situations. Once the stressor passes, the body signals to return cortisol production to normal levels. This response is necessary during times of urgency. However, if stress persists, cortisol levels can remain high. Chronically high cortisol levels can keep blood sugar levels elevated, slow down metabolism, raise blood pressure, and weaken the immune system over time ([Cleveland Clinic](https://my.clevelandclinic.org/health/articles/22187-cortisol)3). Exercise helps manage cortisol in several ways. Research has shown that even with a slight increase in cortisol during intense exercise, it lowers levels shortly afterward and helps manage cortisol response during subsequent times of stress ([Psychoneuroendocrinology Journal](https://www.sciencedirect.com/science/article/pii/S0306453021002109" \l ":~:text=This%20study%20revealed%20that%20exercise,response%20to%20a%20psychosocial%20stressor.)4). It also promotes better sleep and healthier habits, which help regulate cortisol levels. Physical activity activates the body to produce endorphins, also known as the happy hormones. Endorphins are a natural painkiller that can boost mood and cause feelings of relaxation and hope ([Harvard Health](https://www.health.harvard.edu/staying-healthy/exercising-to-relax)5).

**Cognitive Function and Exercise**

Exercise also has a positive impact on our mental health. An example of this comes from studying brain-derived neurotrophic factor (BDNF). BDNF is a neurotransmitter that helps with memory and cognition. Research has also shown that it might aid in lowering anxiety and depression as well ([National Library of Medicine](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4915811/)6). Regular physical activity can increase the levels of BDNF production, promoting better cognitive function and mental wellness.

Participating in consistent exercise is a great way to help balance hormone production in the body. These benefits serve as another reminder of how activity can affect so many areas of the body while positively impacting function and quality of life.

*Always consult with your physician before starting a new exercise program.*