



Long-Term Effects of Stress



Stress has both immediate and long term effects on the body.

While **acute stress** can help protect the body from dangerous stressors, **chronic stress** can have harmful effects on the body.



Acute Stress - stress that happens over a short period of time

Chronic Stress - constant stress that occurs over a long period of time

During the stress response the body releases hormones into the bloodstream that cause changes all over the body.

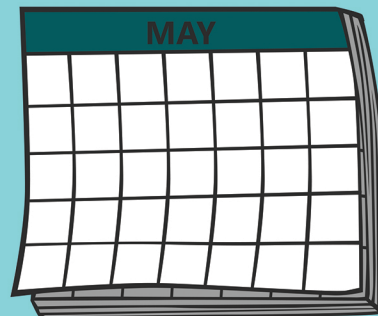
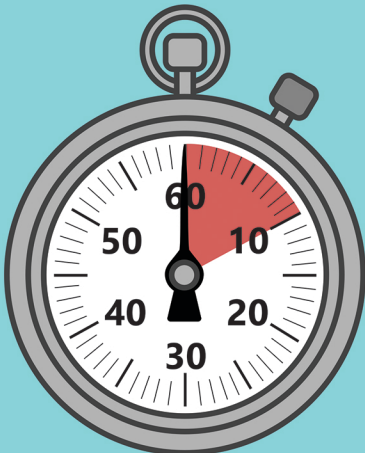


Epinephrine

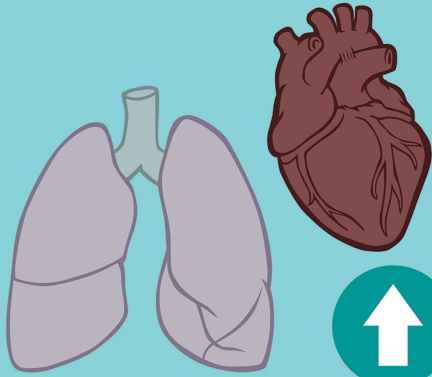
Cortisol

During acute stress, the level of these hormones returns to normal fairly quickly so their effects on the body are short lived.

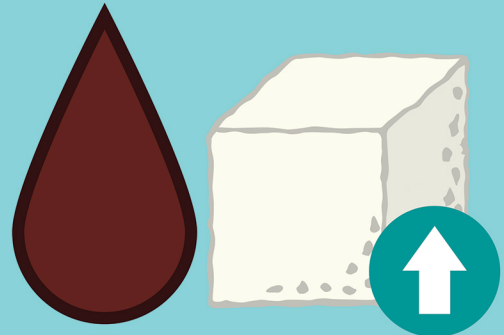
During chronic stress, the level of these hormones stay elevated for long periods of time and their effects on the body are more long-term and harmful.



Effects of Chronic Stress



Increased heart and breathing rates over long periods of time increase wear and tear on a person's heart and lungs and increases their risk of having high blood pressure, a heart attack, or a stroke.



Increased blood sugar levels over long periods of time can increase someone's risk of developing Type II diabetes. If untreated, Type II diabetes can cause damage to a person's kidneys, blindness, nerve damage and infections.^[1]

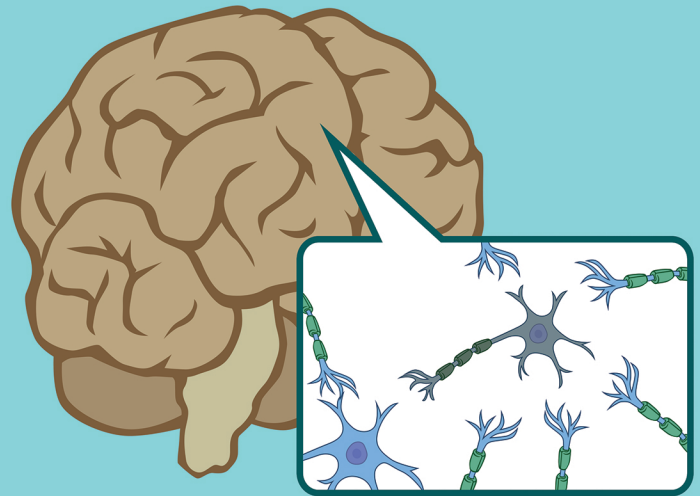


A decreased immune system means that the body is less protected from infections, diseases, and illnesses. Chronic stress dials back the function of the immune system and increases a person's risk of getting sick.^[2]



Chronic stress can also have severe impacts on a person's memory, their ability to think and problem-solve, and their emotions.

The brain is made up of millions of neurons. Connections between these neurons are what allows us to create, store, and access memories. During chronic stress, some of these connections are severed or they fail to form at all. ^[3]



When this happens it can make solving even simple problems or completing tasks more difficult than they normally would be. Emotions can become overwhelming and hard to deal with.

Luckily, there are ways to prevent the damage that can be caused by chronic stress. Taking steps to reduce the amount of stress in your everyday life, practicing mindfulness or meditation exercises, or visiting a therapist or counselor, can all help to reduce stress.



1. Adapted from: Lloyd, C., Smith, J., & Weinger, K. (2005). Stress and Diabetes: A Review of the Links. *Diabetes Spectrum*, 18(2), 121-127. doi: 10.2337/diaspect.18.2.121
2. Adapted from: Mariotti, A. (2015). The effects of chronic stress on health: New insights into the molecular mechanisms of brain–body communication. *Future Science OA*, 1(3). doi:10.4155/fso.15.21
3. Adapted from: Kang, H. J., Voleti, B., Hajszan, T., Rajkowska, G., Stockmeier, C. A., Licznernski, P., . . . Duman, R. S. (2012). Decreased expression of synapse-related genes and loss of synapses in major depressive disorder. *Nature Medicine*, 18(9), 1413-1417. doi:10.1038/nm.2886