

## Brain Overview

The brain is a plastic and vulnerable organ, continually changing by experience. Traumatic experience can change how the brain reacts even to everyday activities.

In a fight-or-flight situation, stress hormones are produced by our body. These 'hormones of stress' can cause unhealthy changes in brain and body – for example, high or low blood pressure, or an accumulation of belly fat. These hormones suppress immune-system responses, as well as the digestive system, the reproductive system and growth processes. It also affects our cognitive function, mood, motivation and fear.

There are three main areas of the brain that respond to the stress:

Amygdala – tells the brain to release hormones during stress

Hippocampus – memory area that records and sends information to amygdala

Prefrontal cortex – decision how to react based on the situation

If we are exposed to traumatic events or repeated traumatic stressors, this can cause our brain to function in a constant state of "threat" or fight-or-flight response. Due to this overactive state of the brain the hormone levels change. It can cause increased levels of stress hormone or cortisol, low thyroid levels, decrease in levels of testosterone or estrogen. These hormonal changes can cause insomnia, irritability, aggression, memory, decision making and other mood and cognitive changes.