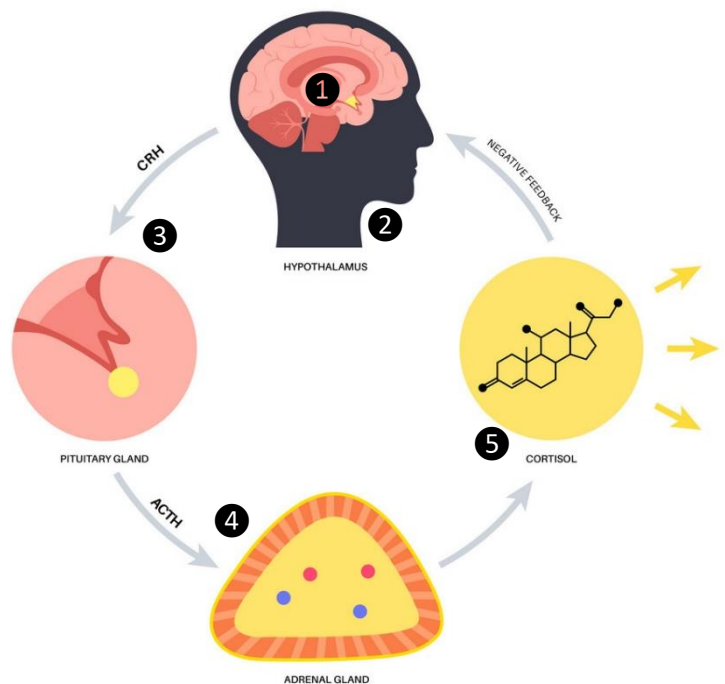


How anger affects the brain and body

- 1 The first trigger of anger activates the amygdala before you're even aware of it
- 2 The amygdala then activates the hypothalamus
- 3 The hypothalamus alerts the pituitary gland by releasing a hormone that expels corticotropin (CRH)
- 4 The pituitary gland activates the adrenal glands by releasing adrenocorticotropic hormone (ACTH)
- 5 The Adrenal glands secrete stress hormones, such as cortisol, adrenaline and noradrenaline

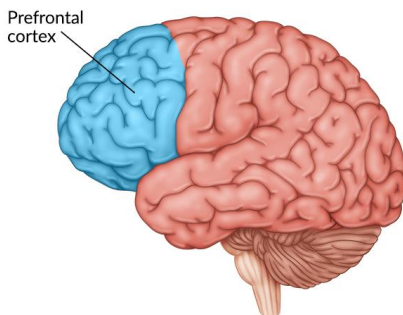
Sources of anger can include:

- Disappointment
- Frustration
- Judgement
- Rejection
- Fear
- Stress

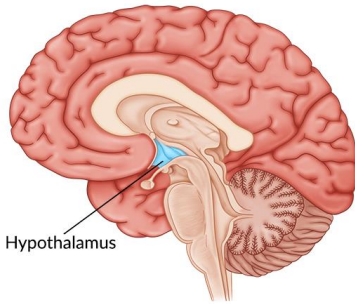


How anger affects your brain

Elevated cortisol levels cause neurons to accept too much calcium through their membrane. This can cause a calcium overload, which makes cells fire too frequently and die. The hippocampus and prefrontal cortex are particularly vulnerable to cortisol and its negative effects.



Prefrontal cortex – High levels of cortisol can cause a loss of neurons in the prefrontal cortex. Suppressed activity in the prefrontal cortex prevents you from using your best judgement, keeping you from making good decisions and making plans for the future – this is your executive function.



Hypothalamus – High levels of cortisol can kill neurons in the hippocampus and disrupt the creation of new ones. Suppressed activity in the hippocampus weakens short-term memory, and prevents the formation of new memories properly. For example, you may not remember what you want to say in arguments, and may not remember how something happened.

Too much cortisol will decrease serotonin – the hormone that makes you happy. A decrease in serotonin can make you feel anger and pain more easily, as well as increase aggressive behaviour and can lead to depression and low mood.

How stress hormones affect the body

Cardiovascular system



- Increased heart rate
- Increased blood pressure
- Increased arterial tension
- Increased blood glucose levels
- Increased fatty acid level

When these symptoms become chronic, blood vessels become clogged and damaged. This can lead to stroke and heart attack.

Immune system



- Decreased thyroid function
- A decrease in the number of natural killer cells
- Increased levels of virus-infected cells

Digestive system



- Decreased blood flow
- Lower metabolism
- Dry mouth

Other systems:



- Increased intracellular pressure
- Decreased eye sight
- More frequent migraines and headaches
- Decreased bone density

