

## The Remarkable Connection Between the Change in Our Mood and Brain Chemistry

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Have you ever wondered why our mood can influence how we go about our daily lives? How our mood changes the way we experience things? Whether we wake up cheery and optimistic, or melancholy and grumpy, our mood plays a key role in the way we think, feel, and perceive the world around us. But what is going on exactly inside our brains when our mood shifts?

Types of human emotions

### Serotonin: the feel-good neurotransmitter



Serotonin is responsible for our feelings of happiness, wellbeing and the stability of our mood and is commonly referred to as the 'feel-good neurotransmitter'. It is made from the essential amino acid tryptophan and is produced when you feel satisfaction or importance, and helps regulate healthy sleep patterns and appetite. This neurotransmitter is found in several parts of the body, including your digestive system, blood platelets, and throughout the central nervous system. Levels of serotonin can be increased by eating nutritious meals, getting more sunlight, taking certain supplements, getting more exercise, and lowering your stress level. High or low levels of serotonin can lead to health problems; therefore, it is important to have the right amount of serotonin in our bodies.

### Dopamine: the pleasure and reward molecule

Dopamine is produced by a part of the brain called the hypothalamus, that helps you feel pleasure. Our nervous system uses dopamine to send messages between nerve cells, therefore it is a neurotransmitter. When you experience something enjoyable, such as eating a nice meal or achieving a goal, your brain releases dopamine. This reward mechanism reinforces positive behaviours and emotions. It is an important part of our reward system as it is responsible for allowing you to feel pleasure, satisfaction and motivation. Some easy, natural ways to release dopamine include meditation, listening to music, eating protein, exercising, going out in the sun and getting enough sleep.

### Endorphins: the body's natural painkillers

Endorphins are opioid peptides produced by the hypothalamus and pituitary glands that act as neurotransmitters. They are often referred to as the body's natural painkillers as they are released when your body feels pain or stress. When you feel pain, nerves in your body send pain signals to your brain. Your brain releases the neurotransmitter endorphins to block the nerve cells that receive the pain signals. This essentially turns off your pain. Endorphins are important as they help you to function even in painful or stressful situations.

### Oxytocin: the love hormone

Oxytocin is a hormone that is, similarly to dopamine, produced in the hypothalamus and released into the bloodstream by the pituitary gland. Its main function is to facilitate childbirth, which is one of the reasons it is called the 'love drug' or 'love hormone'. It plays a crucial role after childbirth as it promotes lactation by causing contractions of the myoepithelial cells in the alveolar ducts of your breasts. These contractions move milk through your breast tissue. Our brains are remarkable chemical factories, constantly producing neurotransmitters that influence our mood and emotions. The complex interactions between serotonin, dopamine, endorphins, and other neurotransmitters shape and change our emotional experiences.