

Neurotransmitters and your mental health.

Neurotransmitters are chemical messengers that carry chemical signals (“messages”) throughout your body. There are many different neurotransmitters - each with its own role to play. Key neurotransmitters that impact mental health are Serotonin, Norepinephrine, and Dopamine.

Serotonin is the “happy” neurotransmitter, and has many roles in the nervous system. It’s involved with maintaining our body temperature and is transformed into melatonin to help us get sleepy when the light starts to dim. It’s also important for our memory, our stress response, and processing our emotions. Because of its role in mental health, many medications for depression target the serotonin that is produced in the brain. Some serotonin is made in the brain, but most of it is actually made in the gut. One of serotonin’s roles in the gut is to help our gut keep food moving through it (“gastric motility”).

Norepinephrine is the “alertness & stress” neurotransmitter that is released in the brain, and impacts our fight, flight, or freeze response. If you’ve heard of “adrenaline” and the adrenaline rush of being on a rollercoaster or bungee jumping, you’ve heard of epinephrine. Epinephrine is another name for adrenaline. It’s a massive part of our “fight or flight” reaction. The part of our nervous system that is activated when we’re stressed and when we feel anxious results in a rapid release of norepinephrine in the brain.

Dopamine is the “motivation” neurotransmitter and it helps us to seek out rewards. Dopamine helps turn our enjoyment of a reward into the desire to go out and get that reward. In this way, it’s thought that dopamine helps to shape behavior. Some medications used to treat behavioral disorders work by changing how dopamine acts in the brain. This “motivation” role of dopamine is also involved in our moods. For example, when dopamine levels are low, we can experience “anhedonia,” which is when we lose our motivation to seek out rewards or become unable to feel pleasure. Dopamine has other roles in the brain and nervous system communication, too. It’s important for working memory and mental flexibility. It also helps to control our movement.

