

Role of Dopamine on Neural System

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Description

Dopamine is a type of neurotransmitter made by our body. It helps our nervous system to send messages between nerve cells. So this is otherwise called as chemical messenger. Dopamine plays a vital role in our state of mind. It's a great quality of our unique human ability to think and plan [1]. Dopamine helps us to struggle, focus, and find things interesting.

Our body spreads it along four main pathways in the brain. Like most other systems in the body, we don't notice it (or maybe even know about it) until there's a problem. Too much or too little of dopamine secretion can lead to a massive range of health issues. Some are severe, like Parkinson's disease. Others are much fewer dire. Through a two-step process it's made in the brain. Firstly, it converts the amino acid tyrosine to a substance called dopa, and then into dopamine [2].

It affects numerous parts of our behavior and physical functions, such as: Learning, motivation, heart rate, blood vessel function, kidney function, lactation, sleep, mood, attention, control of nausea and vomiting, pain processing.

It's difficult to locate a single source of most mental health disorders and challenges. But they are often related to too much or too little dopamine in different parts of the brain [3]. For examples Schizophrenia. Decades ago, researchers believed that symptoms stemmed from a hyperactive dopamine system. Now we know that some are due to too much of this chemical in certain parts of the brain. This includes hallucinations and delusions. A lack of it in other parts leads to different signs, such as lack of motivation and desire [4].

Dopamine also plays a role in diseases that aren't related to brain related disease such as Parkinson's disease. Another one is obesity, which is classified as a disease in 2013 by American Medical Association. This chemical permits neurons in our brain to connect and control movement. In Parkinson's, one type of neuron progressively reprobates. It doesn't have a signal to send anymore, so our body prepares less dopamine. The chemical imbalance causes physical symptoms. These contain tremor, stiffness, slowness of spontaneous movement, poor balance, and poor organization. Usually doctors treat these symptoms with medications that increase the dopamine levels in our body.

If we take more calories than we burn, we will gain weight. Obese people may face difficulties that others don't. They faced lots of problems with their natural reward systems. This may affect the quantity of food they eat before they feel satisfied. Imaging studies advise that in people with this illness, the body cannot release sufficient dopamine and another feel-good hormone, serotonin [5].

Conclusion

Usually dopamine chemical plays a subordinate role in the body, but in certain medical situations, it's factually a lifesaver. Doctors use prescription dopamine (Inotropin) to treat low blood pressure, poor cardiac output (when the heart doesn't pump out enough blood), poor blood flow to vital organs and some cases of septic shock. There are chances of complications with any drug, even if taken under close supervision. The main ones related with dopamine include: Irregular heartbeat, faster heart rate, trouble breathing, chest pain, nausea and vomiting, headache.

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