A Complete Guide To Dopamine Imbalance: Symptoms & Reactions

Are You Suffering From A Dopamine Imbalance?

You know how it feels.

That unmatchable sense of satisfaction you get after you accomplish something that you had always wanted to.

Whether it’s breaking the weightlifting record at your gym, getting into an energetic mode and completing eight hours of work in five hours, or achieving a long-term goal that your friends (and even your Dad) thought you’d never do, that feeling can be highly motivating to take the next big step in your life.

That feeling is dopamine rushing down your spine.

What is Dopamine? It’s a chemical compound present in the body as a neurotransmitter. It acts as a messenger between brain cells. Despite being generated by just a handful of brain cells, it acts as a powerful stimulant for many major physical and cognitive functions, including memory, movement, motivation, and pleasurable reward.

Because of its ability to control feelings related to pleasure and reward, it’s also called “the pleasure neurotransmitter.”

However, it’s also the chief regulator of addictions related to food, drugs, gambling, sex, shopping, and many other behaviors.

If you wonder why certain drugs are so addictive, it’s because they stimulate the production of dopamine and create a long-term craving in the brain.

How does Dopamine influence your behavior if you are not a drug addict?

Have you been too obsessed with something in your life? Like reading, playing games, achieving your goals… Well, that’s addiction too. You keep thinking about it the same way an addict thinks about drugs.

That thought can make you the most motivated and productive person you know!

The good news is, your brain is already tuned for greatness, because dopamine produces positive results too. It works in your favor when you work out in the gym, interact with someone you love, and every time you strive to progress faster towards accomplishing your goal.

Dopamine boosts several aspects of cognitive functioning such as memory, focus, and motivation. Laboratory studies have revealed that dopamine is as critical for memory development as it is for motivation-based learning and goal-centered behavior.

In simple words, dopamine is the neurotransmitter responsible for long-term memory growth and motivating a person to “go after something” and accomplish a particular goal.

While having a good memory is going to be absolutely important for your success, it can’t be defined as the only ‘essential’ to make you a champion performer.

Your success is largely determined by your ability to learn from your past mistakes and apply appropriate solutions to similar challenges in the future. This is what we call distinguishing the ‘good from bad.’
In a study conducted by *Nature*, volunteers were fed with drugs that altered their dopamine levels. Each of them was asked to participate in a learning task that involved becoming familiar with different sets of currency symbols in which profit or loss was used as a metric to analyze the value of their total money.

At the end of the study, it was found that the winners had the highest dopamine activity in their brain. During the test, players were rewarded for choosing the best symbol pairs, and it turned out that their dopamine reacted positively and helped them remember and perform better in subsequent rounds.

Another study proved that people with higher dopamine levels in their brain were less impulsive than those with lower levels.

These are clear evidences that dopamine has a strong influence on the mental functioning of a person. The more the amount of this neurotransmitter is, the better will be your memory, planning, decision making, and learning ability.

Nevertheless, the link between dopamine levels and mental functioning also follows an inverted U-curve pattern in certain circumstances. That is, anything in excess or lesser than the required level could lead to negative results. So finding the right balance in dopamine levels is the key to getting the best of this neurotransmitter.

**Effect of dopamine on your physical activities**

When you’re trying to achieve peak physical performance, what do you think plays a major role?

Is it your muscles? Lungs? Heart?

Well, it’s none of the above.

The central governing authority of fatigue in your body is your brain. And dopamine is the neurotransmitter that drives the brain and elevates or lowers fatigue.

Have you tried to push yourself too far beyond your capacity and felt completely exhausted for the rest of the day? It always happens, right?

With less dopamine in your brain, your heart runs out of oxygen, and if you keep doing that for a long period of time, then you could even end up damaging your organs temporarily or permanently.

The amount of dopamine in your body also has a huge impact on your physical activities. It alters results when you work out in the gym, perform yoga asanas, and participate in athletics.

Of course, mental functioning such as learning, memory, focus, and motivation has a significant effect on our physical performance naturally, but dopamine does more than that.

Laboratory studies on rats have confirmed that running boosts the activity of brain cells that produce dopamine. And the effect is even more pronounced in trained rats (that have been trained for at least 8 weeks) vs. untrained rats. (Eight weeks in a rat’s life is approximately two years in human life.)

It was found that rats that were nurtured for high-intensity running reacted better to dopamine than untrained rats. They had a higher percentage of dopamine and they were more active. Again, this study proved that having more dopamine in the brain results in better physical performance. So, if you wish to go from 100% to 110% (or maybe more) with your physical activities, then adequate quantities of dopamine is what you need.
Okay, what impact does dopamine have in humans?

Unfortunately, there is no strong evidence like the rat case to determine the effect of dopamine in humans. The results have varied from one study to another, mainly because, unlike the case with rats, there is no control over human environment. However, the men in lab coats believe that dopamine can boost an individual’s physical performance in certain conditions.

Much like the case with rats, genetic differences determine the capacity of physical activity in humans. In one study, it was concluded that high levels of dopamine didn’t have a major impact in cyclists in mild weather but it boosted their performance and scores in hot weather. So, it worked in their favor under stressful conditions. This experiment reveals that dopamine activity may help increase the exercise capacity of humans under challenging conditions. Scientists claim that this increase in physical capacity stems from the fact that dopamine slows down the process of fatigue in the CNS during intense physical activity.

The above studies suggest that even in average people, physical activities like exercise boost dopamine activity in the brain naturally, which is why we all feel fresher and more focused after exercising. However, over time, dopamine levels go down gradually and result in tiredness. That is exactly the reason why we feel tired after intense workouts.

In the case of best performing athletes, the process of dopamine depletion is slow, hence they have more endurance and stamina and go on for a longer duration than their counterparts. Increased dopamine activity in the brain also results in better focus and concentration in individuals.

The Worst Symptom Of Dopamine Deficiency

More evidence about the effect of dopamine on the physical and mental performance of humans comes from people with Parkinson’s disease.

Few people are aware that Parkinson’s disease is caused by the loss of cells that are responsible for producing dopamine in the brain. Because of low levels of dopamine, patients experience slow movements, muscle rigidity, stiffness of limbs, tremors, and poor cognitive functioning such as poor focus, planning, and memory.

Fortunately for people suffering from Parkinson’s disease, an increase in dopamine levels with medical treatment can improve their motor abilities and cognitive functioning and result in better movement, planning, focus, and memory.

Parkinson’s disease is the worst known symptom of dopamine deficiency. But there are other mild symptoms, too.

Other symptoms of dopamine deficiency:

- Chronic Depression
- Fatigue
- Forgetfulness
- Depression
- Mood swings
- Restless Leg Syndrome
- Sudden weight gain
- Low sex drive
- Inability to concentrate
- ADHD
- Gastrointestinal disturbances

None of the above symptoms are caused just because of dopamine deficiency. But having a healthy amount of dopamine in the brain helps improve the condition. This is important because low levels of dopamine
are caused by simple dietary and lifestyle factors such as stress, insufficient sleep, overtraining, drugs, and excessive intake of caffeine, alcohol, and sugar.

“Dopamine imbalance is influenced by lifestyle and eating and drinking habits ranging from overtraining to alcohol abuse.”

It’s not so difficult to stay away from the common factors that cause dopamine deficiency, but there are others that are difficult to avoid.

Activities that alter dopamine levels

When it comes to dealing with dopamine imbalance, there is always a right way and a wrong way of doing it. Some of us try to improve our dopamine activity by meditating, exercising, and eating nutritious food. These are the right methods.

On the other hand, there are people who take several cups of coffee a day to fight sleep deprivation, eat junk food to tackle late-night hunger, and even work out until extreme exhaustion (overtraining), hoping to build muscle faster. These are the wrong methods of boosting dopamine activity.

People in the second category will see an immediate increase in their dopamine levels, but they will find themselves extremely tired and exhausted in the long term. In turn, they will start experiencing more stress, poor focus, and low productivity. That’s what dopamine can do to your physical and mental activities.

Numerous experiments have revealed that dopamine affects the major aspects of human ability such as memory, focus, and stamina. The more the dopamine activity in your brain is, the better will be your physical and mental performance. Whether you’re looking to gain an edge over your colleagues at the office and produce an impressive performance or if you’re training for your next marathon, having adequate quantities of dopamine will help bring the best out of you and ultimately get the work done in the best way possible.

You may be interested to check out Dopamine brain foods.

These supplements contain a range of ingredients that help neutralize dopamine deficiency and improve its activity in the brain so that you can be your best at every challenge that you take on.