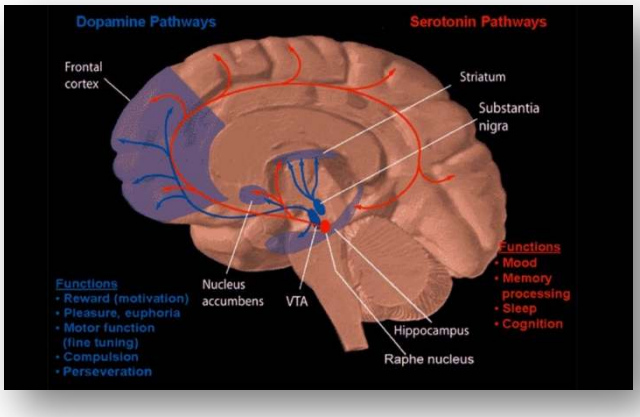
Addiction, Your Brain and Dopamine



What is it about our brains that make some of us more vulnerable to addiction than others? We now understand addiction as a brain-based disease. It is a brain circuitry and mitochondrial disorder. Thanks to all the research thus far on addiction, we are learning just how drugs affect the way the brain works. From a neuroscience perspective, we know that this disease called addiction just doesn't manifest from character weakness or a lack of will power. It is more about neurobiology than was once thought.

Addiction can alter the brain's ability to think rationally, control our impulses and make sound decisions. Hence, it can develop in people despite their best intentions or strength of character. We have also learned that we cannot achieve success by treating only one aspect of addiction. One of the treatment modalities has been to utilize various medications.

The thrust of the pharmacological treatments utilized thus far has been to suppress dopamine which, in fact, might not be a good treatment approach after all. The function of most of the available addiction medications is to extinguish dopamine in hopes of controlling addiction. Medications like campral, naltrexone, and suboxone all suppress dopamine. But we need dopamine! So, just what is dopamine? It has been called the happiness molecule in the brain. Dopamine is a neurotransmitter. It is the primary neurotransmitter in the reward pathway. Neurotransmitters are chemicals released by brain cells to send signals to other brain cells. Low dopamine levels in the brain can cause aberrant cravings that can be directed at drugs, other substances or activities, or food.

Most people entering the addiction treatment arena have in common low levels of dopamine. It can be genetic in origin and it can even be secondary to a diet heavy in junk food. Research data from brain imaging like PET Scans and MRIs have shown there is a strong similarity between the ways that drugs and food affect the brain. Dr. Kenneth Blum developed the concept of the Reward Deficiency Syndrome and the brain reward cascade to explain dopamine's role and function in the brain. The brain reward pathway is made of neurons that release chemicals when they are stimulated. Repeated use of drugs of abuse targets this brain reward pathway and hijacks it by driving the compulsory drug use to achieve the "high" again and again.

We now know that things like food, sex, gambling, and internet gaming produce changes in the brain's reward system that are similar, if not identical, to those caused by substances like drugs and alcohol. There are also psychological similarities between cravings for food and cravings for drugs. Dr. Mark Gold, an expert in addiction from the University of Florida sums it up by stating, "…Highly palatable and so-called fast food can produce effects similar to drugs of abuse." These effects are linked to dopamine in the brain.

We now see on the horizon the marriage of genomic medicine with addiction medicine yielding robust discussions about how we can bring about dopamine homeostasis (balance). Researchers in this field of study are looking at the brain reward cascade in an effort to understand ways to affect gene expression and increase dopamine release. Why is this important to you? Because, biology equals behavior. The genesis of all behavior derives from your genetic makeup. Addiction changes brain circuits both structurally and functionally that lasts for years, if not a lifetime, after exposure to the drug. These changes account for the tolerance and cravings characteristics of addiction. Now we can begin to understand why the "just say no" adage doesn't work.

In the early 1990s, Dr. Kenneth Blum was one of the first researchers to discuss the link between the inability to stop using and low dopamine levels in carriers of the A1 variant of the dopamine D2 receptor. Carriers of this A1 variant have reduced brain-reward responsivity, a blunted response to drugs of abuse including cocaine. Carriers of this A1 variant also have 30-40 percent fewer dopamine D2 receptors. It is the low dopamine function in the pleasure centers in the brain that leads to aberrant cravings of processed foods, drugs or something else. Research data from PET scans and MRIs show the similarity between the ways that drugs and certain foods affect the brain. If dopamine resistance is the culprit, what can be done to improve dopamine sensitivity?

A first step would be to improve the diet. Diets high in protein are known to increase the number of dopamine D2 receptors in the brain. Also, supplementation with the proper nutraceuticals would prove to be beneficial. Published works have shown, for instance, a connection between the Omega 3 in fish oil and improved dopamine levels and functionality of dopamine D2 receptors. Other nutraceutical support in general proves to be beneficial as well.

But the most groundbreaking agent has been released. They are products designed by Dr. Kenneth Blum, himself. These agents will activate dopamine levels in both the brain reward site (the nucleus accumbens) to reduce cravings and the relapse site (the cingulate gyrus). This is science at its very best and it's vastly different from current addiction treatment pharmaceuticals that are offered.

It is vitally important to speak with a qualified, trained clinician to explore these and other options.

For further information, please contact the office by email at totalhealthsolutions@protonmail.com, or by phone at 954-577-0008 to request an appointment.

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