

Daily Life with Christ-76: Understanding brain addictions (15). Psychoactive drugs: how amphetamines change the brain.

Stimulants

► Amphetamines:

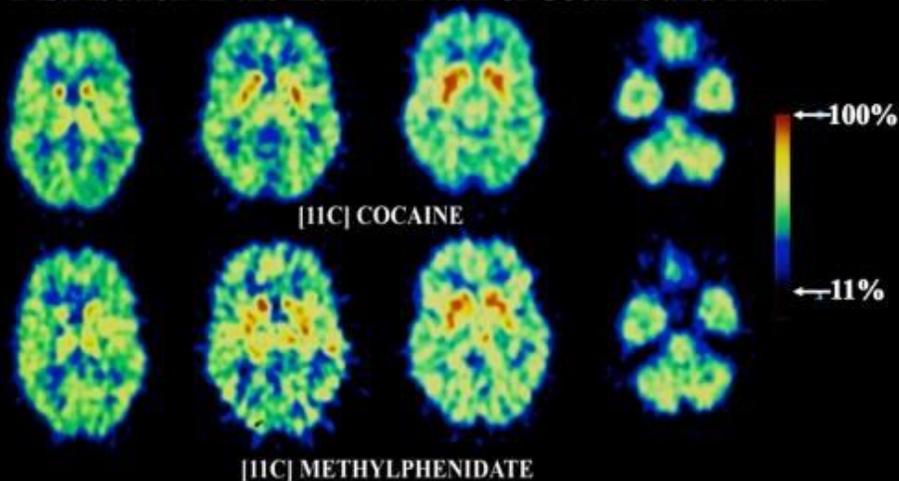
- Side effects: restlessness, rapid speech, blurred vision, dizziness
- Long term effects: hyperactivity, irritability, irregular heart rates, liver damage, paranoia

► Methamphetamines:

- Side effects: increased respiration, elevated body temp, convulsions, stroke
- Long term effects: psychotic behavior, memory loss, aggression, brain damage, heart damage, severe tooth and gum decay, stroke

Stimulants (Ritalin, Adderall) Act like Cocaine Directly in the Dopamine Cells

Distribution in the Human Brain of Cocaine and Ritalin



In our study of psychostimulant types of psychoactive drugs, we now consider amphetamines. Although there is a similarity between the names of amphetamines and methamphetamines, and although they have the same chemical base, they are radically different in their effects on the brain. Amphetamine has a variety of medical uses and has been prescribed by physicians for a variety of conditions. Methamphetamine is never prescribed medically.

The histories of amphetamine and methamphetamine are similar to the history of cocaine. Like cocaine, amphetamines are also derived from a plant—in this case, the Ephedra sinica plant, which grows mainly in Mongolia, Russia, and Northeast China. And like the coca plant, the ephedra plant has been used for thousands of years by people who recognized its effects. Specifically, it has played an important part in traditional Chinese medicine as a treatment for colds and asthma.

In the late 1800s, chemists synthesized amphetamine from the ephedra plant. About 30 years later, they synthesized methamphetamine. Both are potent and addictive psychostimulants, but methamphetamine tends to have stronger effects because of a slight change in chemical structure, which I will discuss in the next article.

For a long time, amphetamine was used to treat nasal congestion and head colds, under the trade name Benzedrine. In 1937, the American Medical Association sanctioned the use of amphetamine for the treatment of mild depression and sleep disorders. Amphetamine was even a common diet pill in the 1940s.

Amphetamine as a psychoactive stimulant also played an important role during World War II, when many soldiers took them in order to stay awake and alert. After World War II, the use of amphetamines in the general population really grew. For example, in 1970, over 10 billion amphetamine tablets were legally made in the United States.

Because amphetamines are powerful psychostimulants and increase metabolism, they have often been incorporated into prescription weight loss aids—like diet pills. However, one of the most widespread legal use of amphetamines in the United States has been in the treatment of attention deficit disorder (ADD). The two most common drugs used in the treatment of these disorders are Adderall and Ritalin, both of which are psychostimulants. By 2014, roughly 3 million children in the United States were taking one of these medications to treat ADD or ADHD.

The fact that 3 million children are regularly given amphetamines is a rather frightening fact—given that, from a scientific point of view, amphetamine is a psychoactive/psychostimulant drug that changes brain chemistry just like cocaine does. The chief difference would only be one of degree. I am not a physician so I am not qualified to weigh in on its use in medicine. However, one cannot deny the science that clearly shows that there is a similarity between the way cocaine and amphetamines change brain chemistry. Nonetheless, the consensus among physicians is that it does not generally lead to addiction when given in small doses. However, some of the more serious side effects from psychostimulants like Adderall are well-known and have included psychosis, kidney disease, seizures, muscle weakness, panic attacks, hypertension, insomnia, appetite suppression, heart attack, stroke, headache, constipation, mood swings, abdominal pain, depression, and sexual dysfunction.

I am fully aware that we live in a broken world with broken minds, hearts, brains, and bodies. Given that man is body/soul, what affects one affects the other. A damaged/broken brain does affect the ability of the mind to focus, as per ADD. However, for an otherwise healthy person to ingest psychoactive drugs is to run all kinds of risks of brain damage. Why would anyone run the risk of damaging his brain just for a buzz or to lose weight or to have more energy? This cannot be anything but irrational—an irrational act that can lead to a life of irrational acts due to damaging his own brain.

The LORD intends for us to live robust lives in freedom. The one thing that we lose with any brain addiction is freedom—for in every brain addiction irrational desires (from VTA) inhibit and overcome the rational (prefrontal cortex) life. The result is that the will is hijacked and efficiently blocks the proper use of the intellect by causing it to focus, to obsesses, on a substance rather than living in the delight of the things of God. Our nucleus accumbens can be stimulated by high thoughts of God, the things of God, and the beauty of life as we ponder them in our prefrontal cortex, or our nucleus accumbens can be physically excited by dopamine, a dopamine that is caused by drugs as well as aberrant/illicit behaviors (compulsions).

We have the option of living in the joy of being captivated by the True/Good/Beauty of the LORD or we can be captured by a drug-induced or behavior-induced brain addiction.

2 Corinthians 10:4 For the weapons of our warfare are not carnal but mighty in God for pulling down strongholds, 5 casting down arguments and every high thing that exalts itself against the knowledge of God, bringing every thought into captivity to the obedience of Christ,

For more regarding amphetamines and treatment, see <https://drugabuse.com/library/amphetamine-addiction/#how-to-get-help-for-amphetamine-addiction>. Like other treatments for addictions, the key is always behavior change, which takes us back to what God's Word and reality as such teaches us: what we actualize is what we become.

In Christ,

Pastor Don