

What Happens To Your Brain When You Use Methamphetamine?

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Crystal meth receives its name from its shape. Methamphetamine comes in clear crystal chunks. However, for short-term users, crystal also refers to the sense of focus they experience after taking it. Students seeking academic performance are prone to fall for the promises of this stimulant drug: meth gives you the sensation of thinking clearer and being more alert.

Yet, the effects are short-lived. It is a harmful substance that can lead to severe damage to the body and the brain. Indeed, this highly addictive drug can affect your central nervous system, causing irreversible brain damage. What happens to your brain when you use methamphetamine? Below we explain why your brain gets addicted to it and what long-term consequences are.

The Fake Sense of Euphoria

Meth increased the production of dopamine in the brain. Dopamine is a chemical messenger that sends messages between the nerve cells. Dopamine plays a double function. It affects how we feel pleasure, which is where the feel-good sensation comes from with meth. But it is also integral to your ability to plan concepts and thoughts, increasing your mental focus.

Yet, don't be fooled by the increase in dopamine. Too much dopamine is bad for you because it deprives your body of the ability to produce it naturally without a chemical trigger. Consequently, periods of sobriety will be marked with dangerously low moods.

Brain Cell Death Caused by Meth

Heavy meth use can affect your brain function and structure significantly. Unlike the rest of the body, brain cells do not regenerate in adult years. Once a brain cell dies, there is no regrowing it. Brain cell death caused by meth use occurs in the specific regions of the brain that are linked with self-control, such as the hippocampus, the caudate nucleus, and the frontal lobe.

Brain cell death happens continuously during our lifetime. However, when the cells are in an area where other cells can compensate, we don't experience any issue with it. But meth targets the brain cells in areas where there are no redundant cells for replacement. As no other area of the brain can fulfill the same functions, this kind of damage leads to permanent change.

Your Brain Builds an Unhealthy Reward System

The brain has a reward center that responds to a stimulus by increasing the release of dopamine. The regions of the brain that assess the stimulus and create the response are rewired through meth use. Meth consumption trains the brain to react to more significant stimuli for the dopamine release. Consequently, individuals who become sober report extremely low moods without the influence of the drug. These changes are also at the core of cravings when you quit.

The changes in the reward system are long-lasting. Former users are more likely to continue exhibiting depressive or aggressive moods. Some symptoms associated with dopamine processes, such as mood swings, tend to normalize within 12 months. Unfortunately, cravings persist as this damage to the reward system is not reversible.

Your Brain Can't Regulate the Mood Anymore

Chemical messengers, such as dopamine, are neurotransmitters. They are chemical substances produced by the neuron that is sent to a neurotransmitter receptor, where they start a reaction. Meth use alters the brain's transmitters and receptors at a cellular level. As a result, neurotransmitters can't maintain messaging to regulate mood. So, addicted individuals tend to experience mood swings and "negative emotions" such as depression, anxiety, and rage.

Over time, the cellular changes can reverse. Users can expect to struggle less with irritability and depression within 6 to 12 months of quitting.

Your Brain Loses Glial Cells

Glial cells are part of your central nervous system. They carry responsibilities such as infection protection, helping neurons communicate, and sending functional signals. Unfortunately, heavy use of meth can considerably decrease the volume of glial cells. In extreme cases, damage can affect cognitive and motor functions.

Thankfully, glial cells have enough redundancies in most targeted areas to gradually replace the damaged cells. It is a long process that can take over a year for heavy users. Long-term sobriety, however, can help former users recover their cognitive and motor functions. Recovery will depend on the level of addiction and use.

Seeking Help For Meth Addiction?

The Findlay Recovery Center offers specialist residential inpatient programs to support you on your path to sobriety. Our caring team is always happy to answer your questions and guide you to the most suitable treatment. Feel free to [contact us](#) at any time to learn more about our services and how we can help you.



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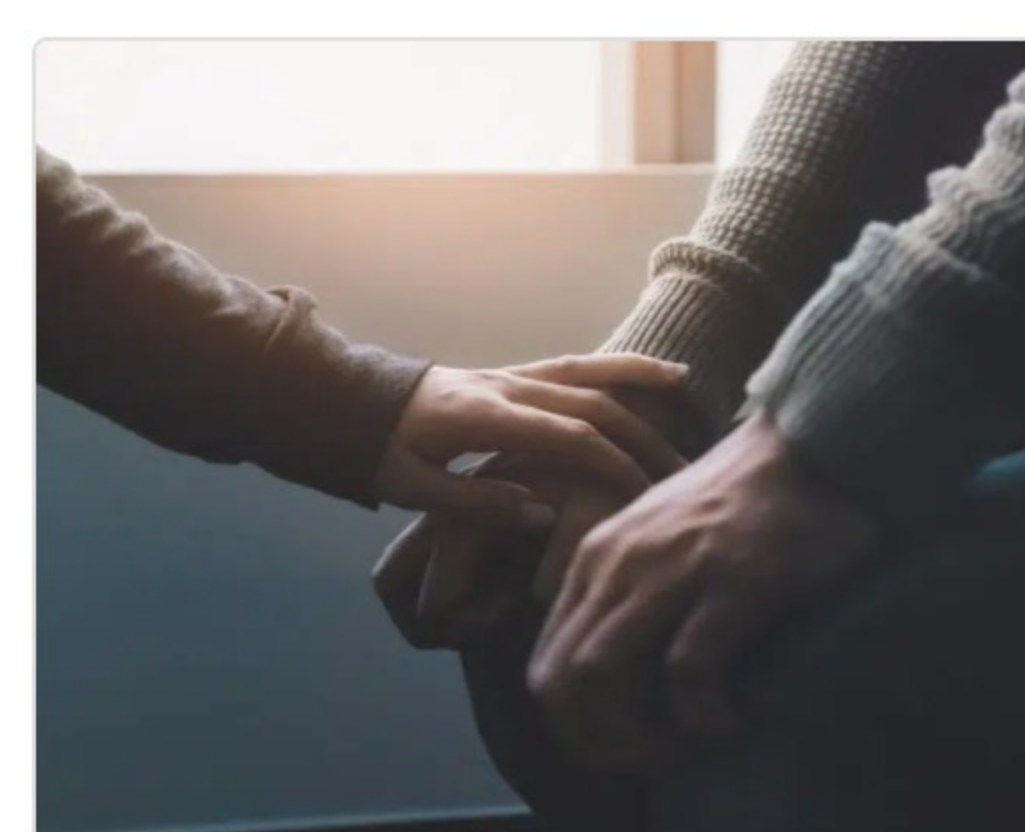
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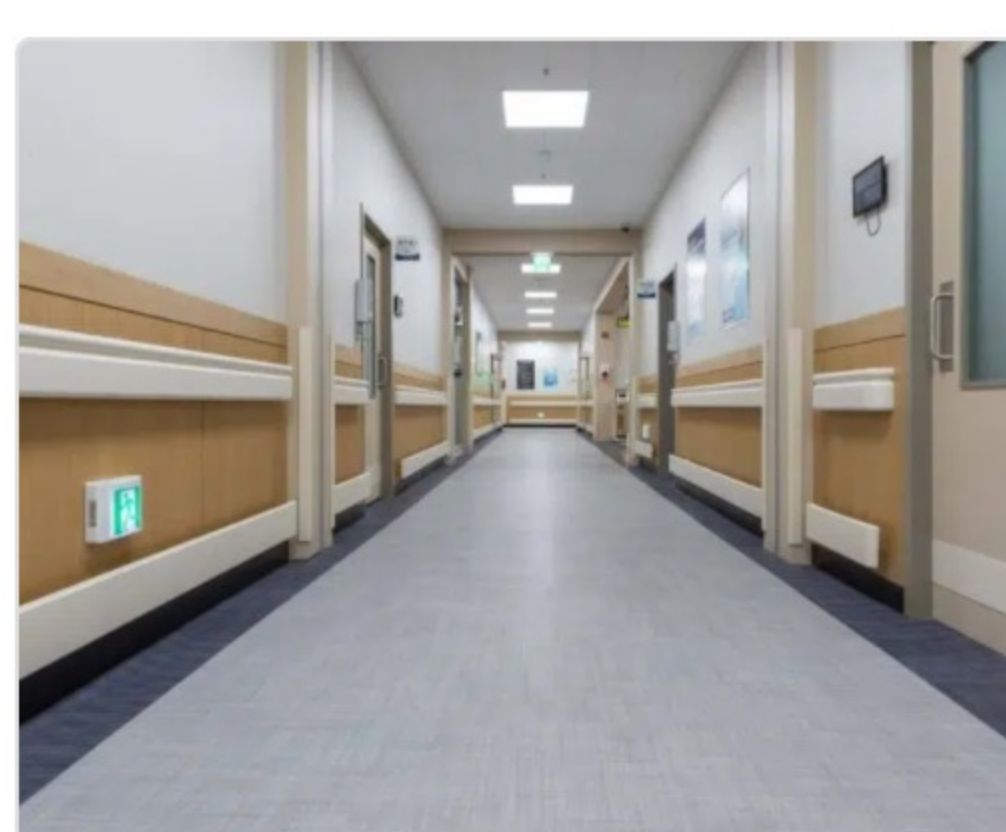
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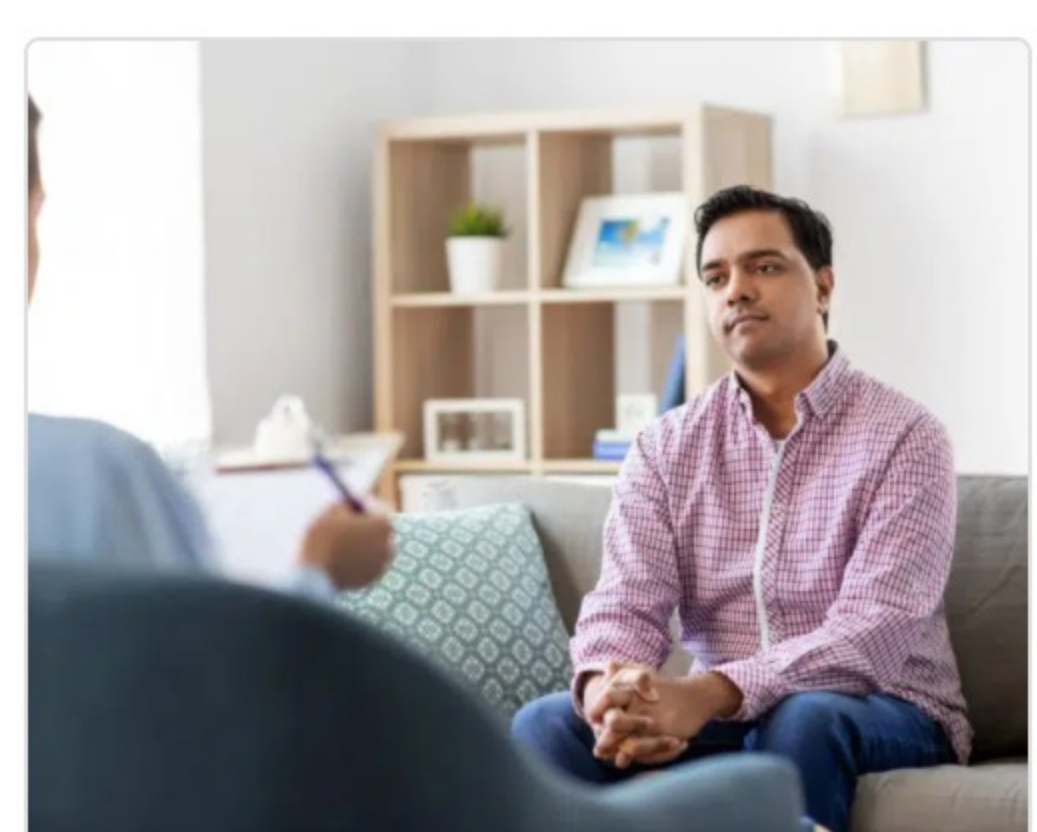
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About Our Company

Findlay Recovery Center is a drug & alcohol treatment center in Findlay, Ohio that offers evidence-based, detoxification and residential inpatient treatment at an affordable rate.

