

Methamphetamines and their side effects ^[1]

(1)

Alice,

Although I really dig your web site and will recommend it to others, I noticed that you present no 411 on methamphetamine. Could you tell me some about this type of drug (crystal, glass/ice, etc.)?

Thanks,
new fan

(2)

Dear Alice,

I've smoked crystal meth about five times in two months and have stopped for about a week. Even now I have side effects like dry mouth, dehydration, and sweaty hands. The side effects are gradually slowing down except for the sweaty hands. I am wondering if this side effect will go away or if it is permanent. I also think that my CNS has taken some damage. Is that also permanent?

Thanks,
Frozen

Answer

Dear Frozen and new fan,

Methamphetamine is a stimulant drug that goes by many names, such as meth, crystal, chalk, ice, shabu, tik, yaba, pure, base, crank, tweak, and go-fast. It's not a new one either. Japanese chemist Nagai Nagayoshi first isolated methamphetamine from ephedrine in 1893. It has been used in wartime to amp up soldiers, and made a brief foray as a diet pill in the 1950s. Eventually, it was taken off the general market in the United States, once its addictiveness was better understood. Methods of use can vary just as much as it's names, including smoking it, dissolving it into alcohol or water and injecting it, taking it orally, or snorting it. It's also referred to as speed and it can increase feelings of euphoria, energy, and confidence. Much like other drugs, the high

experienced by meth use is also commonly associated with some short-term, long-term, and permanent side effects.

Meth directly targets the brain, which accounts for most of its effects. When meth is absorbed by the body, it causes a huge rush of the neurotransmitter dopamine to flood the brain. Dopamine, at the right levels, is a critical signal that your brain cells use to communicate. Releasing dopamine stores at the right time help you recognize pleasure, rewards, feel motivated, and it even participates in motor functioning. This is why the immediate effects of euphoria, or feeling “up” or “on” are common. Many meth users report feelings of elation while high; however, others also report increased agitation, irritability, mood swings, aggression, and paranoia.

About that dry mouth, dehydration, and sweaty hands: Neurotransmitters like noradrenaline and dopamine are released when you use meth. This is a functional part of your body’s “fight or flight” response. When they get released (e.g., when you use meth), your blood vessels constrict, your sweat glands open up, your heart rate increases, your pupils dilate, your GI tract slows down, your mouth can get dry, and your blood pressure rises. So, the side effects you’ve experienced are characteristic of stimulant drugs. Other short-term effects of meth use include decreased appetite, irregular heartbeat, nausea, tremors, dizziness, and hyperthermia (a dangerous increase in body temperature, like a fever).

When you flood your brain repeatedly with dopamine, long-term effects can also occur: research has shown that chronic meth use can lead to verbal learning impairment, difficulty with emotions or memory, and impaired motor functioning. Meth can affect mood and impact mental health for short periods or permanently, and it also has a major effect on your vascular and central nervous system. Long-term use of meth can lead to the muscle cells of the heart becoming strained and increasing in size (called hypertrophy) and becoming fibrotic (which means they lose elasticity and decrease the ability to pump blood as well). This, in turn, could increase the chance for heart attack. Additionally, chronic increases in blood pressure can lead to a brain hemorrhage or stroke. Some side effects can be reversed pretty soon after you stop using the drug, as you describe, Frozen. Others, like the death of heart muscles during a heart attack, or changes to brain cells can be long-term or permanent.

Other long-term effects of meth stem from its addictiveness, which means that chronic meth users also report the negative experiences of withdrawal, which can include depression, anxiety, fatigue or inability to sleep, craving for the drug, and an inability to experience joy or satisfaction from activities other than getting high. If you’re concerned about meth addiction, read [Reaching out for help with a drug addiction](#) [2] for more information.

Because methamphetamine is not legal to make in the United States, another concern for those buying it is knowing whether or not the drug has been mixed or cut with other substances. This makes identifying short- and long-term effects even more challenging, as other chemicals, carcinogens, and toxins could be mixed in with it. Some of the toxicity, therefore, could be due to other chemicals like ammonia that may be used in the processing. If sweaty hands or any other side effect impact you in a negative way, it’s best to make an appointment with a health care provider. S/he may also be able to help uncover any other lingering effects on the drug that might not be so immediately visible.

Hope this answers your questions!

Alice!

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