

Amphetamine, methamphetamine and other stimulants

Published 20 December 2005. Updated 1 September 2009.

Amphetamine

Amphetamine and its derivatives, methamphetamine and dextroamphetamine, have a stimulating effect on the central nervous system. Amphetamine was introduced in the 1930's as a new medicine for blocked nose. During the Second World War it was given to soldiers to make them more alert. In the 1950's and the 1960's it was used as a stimulant and to treat depression and obesity. In Finland it was classified as a drug in 1968. On the street amphetamine is available as tablets, capsules, powder, liquid and crystals. The colour varies from yellowish white to yellow. Amphetamine can be snuffed, smoked or taken intravenously, or orally in the form of tablets or capsules.

The effects of amphetamine, like those of other intoxicants, depend on the user's state of mind and the company the user is in. Whether amphetamine is used on its own or together with other intoxicants and whether the user is a novice or an experienced user also have an influence on the effects of the drug. As an immediate psychological effect, the user of amphetamine will feel happy and energetic. When the dose is increased the user will become talkative and restless. He may feel powerful and omnipotent. Many behave in an aggressive or hostile manner. In addition to its effect on the central nervous system, amphetamine also affects the heart, the lungs and other organs. Even relatively small doses reduce the appetite, speed up breathing and heart rate, elevate blood pressure and widen pupils. Higher doses cause fever, sweating, headaches, blurred vision and dizziness. Very high doses may result in arrhythmia, convulsions and loss of co-ordination. This state is referred to as amphetamine poisoning. Causes of death due to amphetamine use include cerebral haemorrhage, heart failure and high fever.

Because amphetamine reduces the appetite, continuous use may lead to malnutrition and consequently to decreased resistance to diseases. A person who uses amphetamine continuously may be unpredictable and violent. This is because the drug causes delusions: the user feels threatened or persecuted. Long-term use of amphetamine can also cause a so-called amphetamine psychosis, which has symptoms very similar to those of paranoid schizophrenia. The symptoms of the psychosis usually disappear in a few days or weeks after the user has stopped taking the drug. When amphetamine is taken intravenously, dirty needles and unhygienic conditions may damage the body and cause infections. A person using shared needles is at risk of catching viral infections, like AIDS and hepatitis B or C. In addition, amphetamine products often contain substances that are not easily dissolved in water, and may consequently cause blocking of the capillaries and deterioration of the walls of the blood vessels. This will increase the risk of e.g. damage to the kidneys or a heart attack.

The continuous use of amphetamine will increase a person's tolerance to it, and the user needs to take increased doses in order to achieve the desired effect. However, tolerance is not developed to all of the effects of amphetamine in the same way: some effects may develop with smaller doses than before. Regular, long-term use of amphetamine may lead to psychological dependence. The withdrawal symptoms include fatigue, long but disturbed sleep, intense hunger, irritability, depression and fits of aggressiveness.

Methamphetamine

Methamphetamine is a chemical substance similar to amphetamine. It is often synthesised in secret laboratories near its users, or in larger quantities in places like the Far East. Its use has increased in recent years particularly in the USA and Australia. The methamphetamine used in the EU originates largely from the Czech Republic, where its consumption has also increased significantly. In Finland, methamphetamine does not appear to be in widespread use, but the amounts smuggled into Finland or produced here could increase in the future.

Methamphetamine is sold illegally as a white, water-soluble powder, as crystals ('ice') or tables (like ecstasy). Methamphetamine may be eaten, snorted, smoked or injected. The latter methods rapidly lead to dependence, because they lead to powerful sudden neurochemical (in the synaptic gaps releasing dopamine and noradrenalin) and intoxicating effects. Similarly to amphetamine, methamphetamine causes increased blood pressure, heart palpitations, restlessness, and feelings of energy and sleeplessness, but its effect is greater. Methamphetamine also easily causes confusion, impulsive behaviour, violence, delusions and false perceptions. Psychotic symptoms may be similar to those of paranoid schizophrenia. It has a half-life of around 9 hours in blood plasma, and part of the compound breaks down into

amphetamine.

Regular use of methamphetamine leads to dependence. Often, users will consume it for several days in a row, like amphetamine, after which time they are forced to stop due to over-activity, sleeplessness or other symptoms. This is followed by withdrawal symptoms which are similar to those from amphetamine (anxiety, depression, the need for more sleep, etc.). After long-term usage, researchers have found neurochemical and neuro-anatomical changes, and dependence is associated with memory problems, difficulty in problem-solving tasks and language problems. Intravenous use of methamphetamine is linked to the same risks (hepatitis, HIV/AIDS) as other intravenous drug use. Impaired judgement and impulsive behaviour caused by methamphetamine may increase the risk of accidents and sexually transmitted infections.

Sanna Sairanen

M. Pol. Sc.

Ulrich Tacke

M.D., lecturer in pharmacology, University of Kuopio

[For more information ►](#)

[Drugs and the Brain animation](#) explains how different substances affect users' thoughts and actions through the transmitters in the brain.

link

Source URL: <https://paihdelinkki.fi/en/info-bank/articles/drugs-and-other-intoxicants/amphetamine-methamphetamine-and-other-stimulants>