



# METHAMPHETAMINE

## DON'T LET **METH** TAKE HOLD

Methamphetamine is an addictive drug that comes in liquid, powder, paste, pill, or crystal forms.

### How does methamphetamine affect the body?

Methamphetamine produces desired and undesired effects. The initial effects last for 2 – 12 hours (depending on how much is consumed) but it can take days for the drug to leave the body.

The short-term undesired or harmful effects include:

- dry mouth and reduced appetite
- increased heart rate, blood pressure, and breathing
- increased pupil size and blurred vision
- irritability and restlessness.

### OVERDOSE – what to look out for

Someone who is experiencing an overdose may also experience one or more of the following symptoms:

- increased body temperature and dehydration
- irregular heartbeat
- chest pain
- headache and dizziness
- seizures
- nausea and vomiting
- stomach cramps
- extreme anxiety
- paranoid thoughts and hallucinations (seeing, hearing, or feeling things that don't exist)
- aggressive and unpredictable behaviour
- repetitive movements and loss of coordination.

Symptoms of overdose can vary depending on regularity of use, tolerance, and the individual. If you are concerned about someone's behaviour, stay with them to monitor any escalation or change.

**If someone is experiencing any of these overdose symptoms, phone 000 immediately for medical assistance.**

The longer-term undesired or harmful effects include:

- changes to brain function, which may be permanent
- dependence
- depression and mood swings that can affect daily life
- poorer concentration and memory
- sleep disorders
- psychosis – hearing voices, imagining things, hallucinations, and delusions (false beliefs)
- increased risk of stroke
- movement problems and increased risk of Parkinson's disease.

Some people who use methamphetamine on a regular basis may also experience heart, lung, and kidney problems, malnutrition, dental problems, skin problems, and/or increased risk of infection. Many people who are using alcohol and other drugs may be experiencing other issues which may include social, legal, financial, and/or emotional problems.

### Why does methamphetamine affect movement?

Methamphetamine causes abnormally high levels of a chemical in the brain called dopamine. Abnormally high levels of this brain chemical may damage neurons in the brain that are important for movement. A brain region called the substantia nigra has a high density of these neurons and brain imaging shows visible changes in this brain region in individuals with a history of methamphetamine use.<sup>a,b</sup>

These movement-related neurons are also damaged by Parkinson's disease and there is overlap in how the damage occurs. Hence, use of methamphetamine can produce movement problems that resemble Parkinson's disease and increases the risk of developing Parkinson's disease later in life.<sup>a,b</sup> Using methamphetamine, or other stimulant drugs such as ecstasy, can lead to a noticeable tremor or shaking in the hands, and problems using the hands to complete tasks. Long-lasting changes in movement and movement-related brain regions have been observed in individuals who have used methamphetamine as few as five times.<sup>a</sup>

# METHAMPHETAMINE

## DON'T LET METH TAKE HOLD

### 'Don't let meth take hold' campaign

The Drug and Alcohol Services South Australia (DASSA) campaign 'Don't let meth take hold' raises awareness about the effects of methamphetamine on movement. The campaign is based on research conducted by the University of South Australia. Information about the campaign development is available at [unisa.edu.au/research/dont-let-meth-take-hold](http://unisa.edu.au/research/dont-let-meth-take-hold)

It is important to note that the specific cause of Parkinson's disease is not known, but probably involves an interaction between genetic and environmental factors. History of methamphetamine use is one of several risk factors for Parkinson's disease. Other well established risk factors are exposure to certain pesticides (eg. rotenone) and herbicides (eg. paraquat). Conversations with individuals around the link between methamphetamine use and Parkinson's disease should include this broader context, particularly if a person living with Parkinson's disease expresses remorse about their past methamphetamine use.

The campaign may also lead to questions about use of amphetamine medications in the treatment of Attention-Deficit/Hyperactivity Disorder (ADHD). The dose of therapeutic amphetamine medications is lower than the dose of recreationally used illicit amphetamines such as methamphetamine. Movement problems are evident in some individuals with ADHD and it is unclear if the movement problems relate to the disease process, use of therapeutic psychostimulant medications, or both. Any individual with questions about their ADHD medications should speak to their doctor.

### What can I do to assist clients?

- If someone is concerned about the effect of methamphetamine on their movement, advise the individual to speak to their doctor or GP clinic about their concerns.
- Confidential telephone counselling and information is also available, please suggest that they contact the Drug and Alcohol Information Service on 1300 13 1340 (local call free) between 8:30am and 10pm any day.
- For more information about methamphetamine, and finding help for alcohol and drug problems, visit [knowyouroptions.sa.gov.au](http://knowyouroptions.sa.gov.au)

### Useful messaging that healthcare workers can provide to clients includes:

It is always safer not to use illicit drugs.

The risks of using methamphetamine can be reduced by:

- not injecting the drug (to reduce injecting-related harms, including blood-borne virus infection and transmission). Those who choose to continue injecting should try to use safe injection practices ([thefirststop.org.au/app/uploads/2016/11/AIVL-guide-to-safer-injecting.pdf](http://thefirststop.org.au/app/uploads/2016/11/AIVL-guide-to-safer-injecting.pdf)).
- use smaller amounts less often
- avoid regular use
- avoid using methamphetamine with other drugs, particularly other stimulant drugs
- not using methamphetamine while they are alone, reducing overdose-related risk
- maintain adequate hydration.

### For more information

**Alcohol and Drug Information Service (ADIS)**  
**Phone: 1300 13 1340**

Confidential telephone counselling and information available between 8:30am and 10pm every day.

[sahealth.sa.gov.au/dassa](http://sahealth.sa.gov.au/dassa)



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#### References

- Todd G et al., (2016) Adults with a history of illicit amphetamine use exhibit abnormal substantia nigra morphology and parkinsonism. *Parkinsonism & Related Disorders* 25:27-32. doi: 10.1016/j.parkreldis.2016.02.019
- Rumpf JJ et al., (2017) Structural abnormality of substantia nigra induced by methamphetamine abuse. *Movement Disorders* 32(12):1784-1788. doi: 10.1002/mds.27205