

Methamphetamine-associated psychosis: Information for health workers

Page Summary



- Methamphetamine-associated **psychosis** (MAP) is an acute, transient state of psychosis that can occur with (often heavy and regular) use of **methamphetamine**.
- Symptoms of MAP can include **paranoia, hallucinations**, muddled thinking, hostility, aggression, **depression**, and **anxiety**.
- The duration of MAP symptoms can vary, lasting from a few hours to a few days, and in a small number of cases, may persist even after stopping methamphetamine use.
- Risk factors for MAP include methamphetamine **dependence**, high dosage and frequency of use, polydrug use, genetic predisposition, and other factors associated with heavy use.
- Treatment for MAP involves managing the underlying methamphetamine use and may include the use of sedatives or antipsychotic medications to minimise acute symptoms.
- Health workers can provide ongoing support by educating individuals about MAP, assisting with treatment and rehabilitation, offering psychosocial support, and addressing co-occurring disorders and physical health issues.

[Page Summary](#)

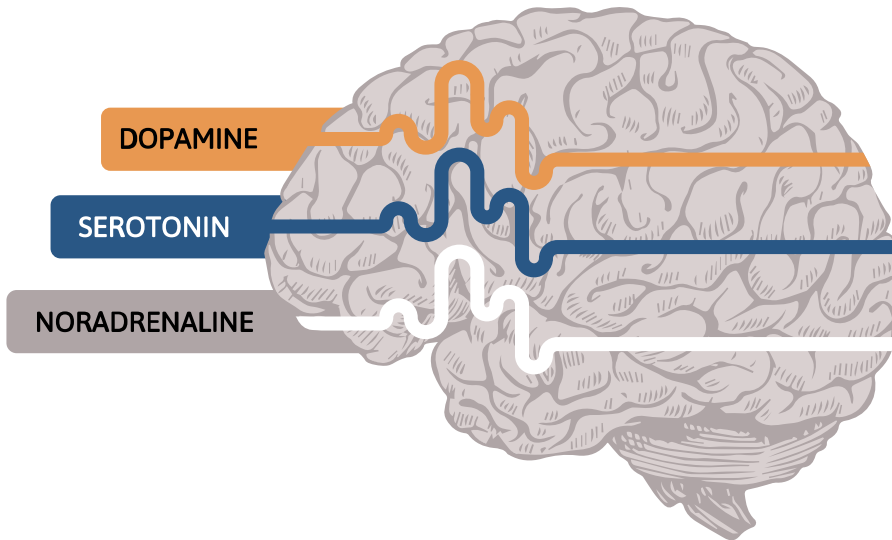
What is methamphetamine-associated psychosis?

Methamphetamine-associated psychosis (MAP) is an acute state of transient psychosis which typically lasts less than 24 hours but can extend over a few days. MAP is common with heavy and regular use of methamphetamine (including crystal methamphetamine).

People who use methamphetamine are more likely to experience psychosis than the general population. One meta-analysis found that any use of amphetamines doubled the risk of psychosis, and an amphetamine use disorder tripled the risk. People who use methamphetamine more frequently, or who have a diagnosis of methamphetamine-use disorder are most likely to experience psychotic symptoms. For example, a report by the National Drug and Alcohol Research Centre (NDARC) found that 23% of hospitalisations between 2020-21 were due to the use of amphetamine-type **stimulants** (including methamphetamine). Of that, drug-induced psychosis was the primary reason for hospitalisation (49%, or 6,452 hospitalisations). This factsheet will discuss the causes and symptoms of MAP, as well as considerations for health workers.

What are the causes and features of methamphetamine-associated psychosis (MAP)?

Methamphetamine acts on the brain's monoamine pathways, affecting neurotransmitters dopamine, serotonin, and noradrenaline (Refer to ['How does ice work'](#) page).



Intoxication with methamphetamine can lead to sustained high dopamine levels, and can damage dopamine **receptors** after long-term use. Dopamine also travels widely through the central nervous system and is known to influence many behaviours and functions. This may help to explain the onset of psychotic symptoms following heavy and regular methamphetamine use.

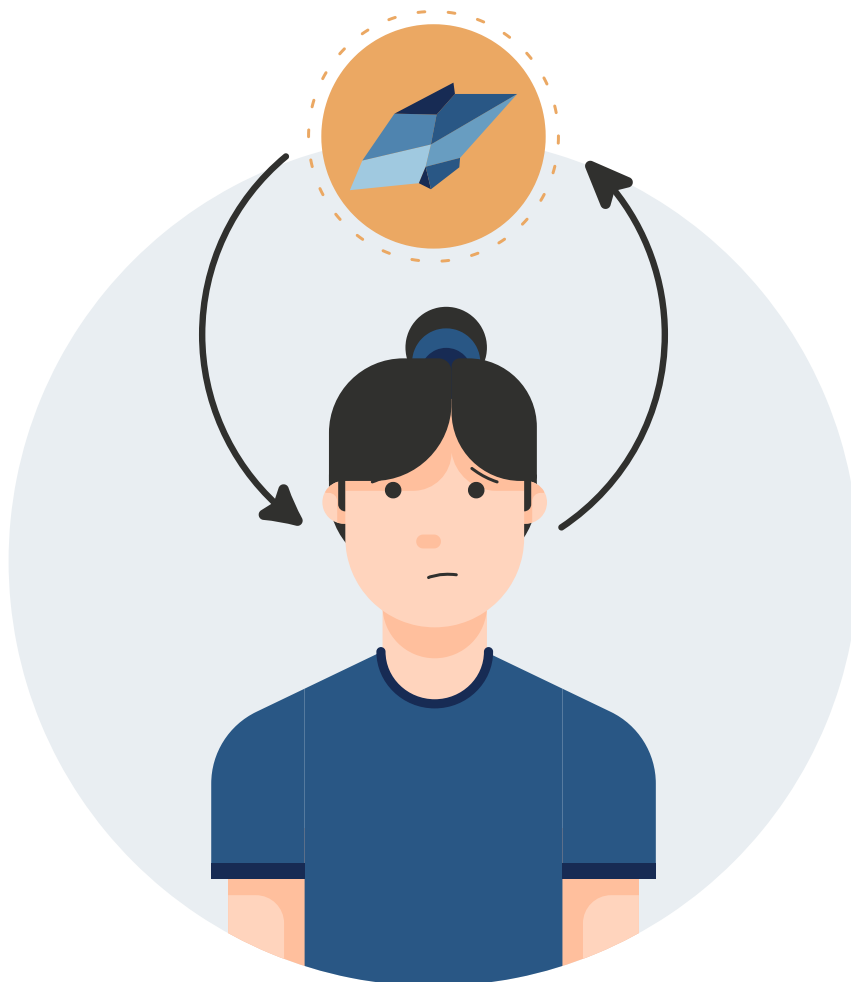
However, the relationship between methamphetamine and psychosis still requires further research. The stress-vulnerability model may be a good explanation for MAP. This model suggests that some people will have a genetic predisposition to developing psychosis which is triggered by methamphetamine use. Individuals with familial risk for substance abuse, and familial risk for psychosis are more likely to experience substance induced psychosis.

Regular methamphetamine use or **dependence** are frequently cited risk factors for developing psychosis, however individual responses can vary, thus supporting the stress-vulnerability model for MAP. Findings in some studies indicate that certain individuals do not experience psychotic symptoms despite using high doses of methamphetamine, while others may develop psychosis after relatively limited exposure.

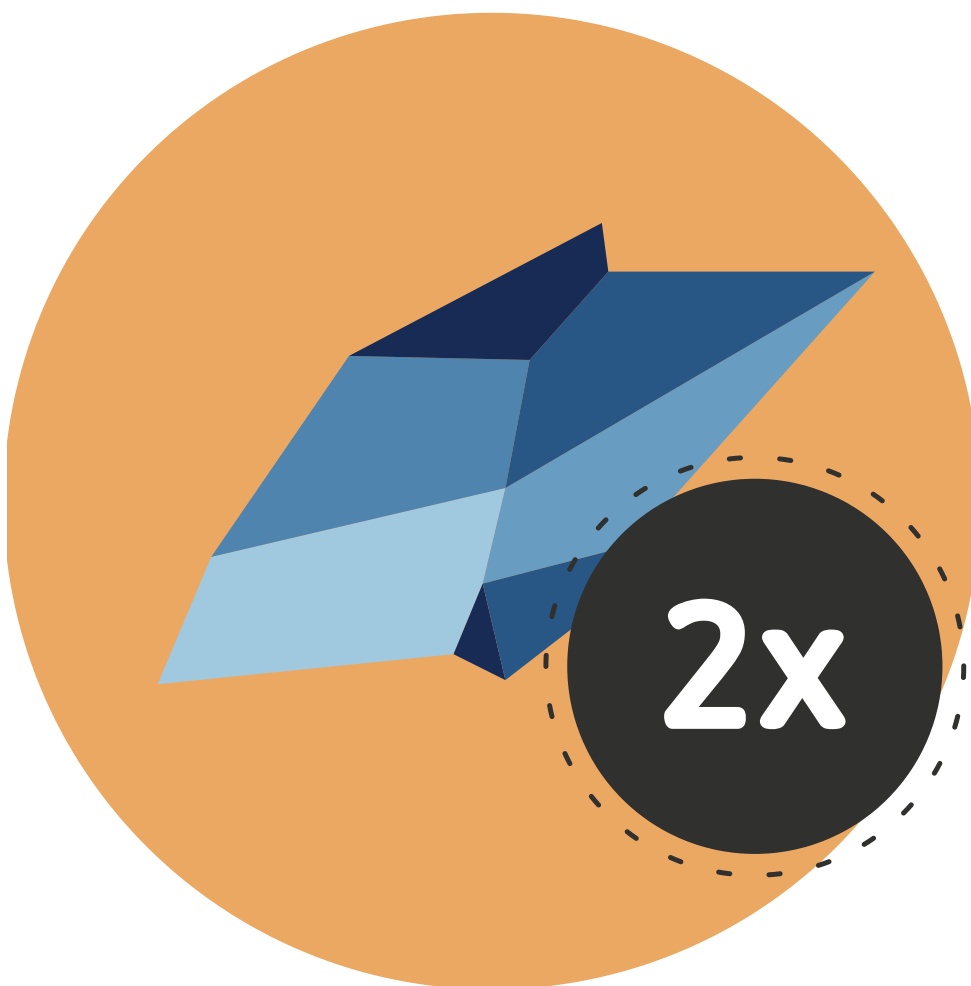
What are the risk factors?

Some factors are associated with an increased risk of methamphetamine-associated psychosis (MAP), such as:

*From Arunogiri et al., 2018, Arunogiri et al., 2020, & McKetin, 2013a.



Methamphetamine dependence (primary risk factor of MAP)



High dosage (e.g., high blood concentration of methamphetamine) and high frequency of use





Polydrug use (e.g., use of alcohol or cannabis at the same time)



Younger onset of methamphetamine use has been associated with higher risk



Genetic predisposition or a family history of psychosis, bipolar disorder, or **schizophrenia**





Other factors associated with heavy use (e.g., sleep deprivation, history of trauma)

What are the symptoms of methamphetamine-associated psychosis?

Symptoms can vary in intensity and duration. Not all symptoms need to be present for MAP to occur. **Symptoms include:**

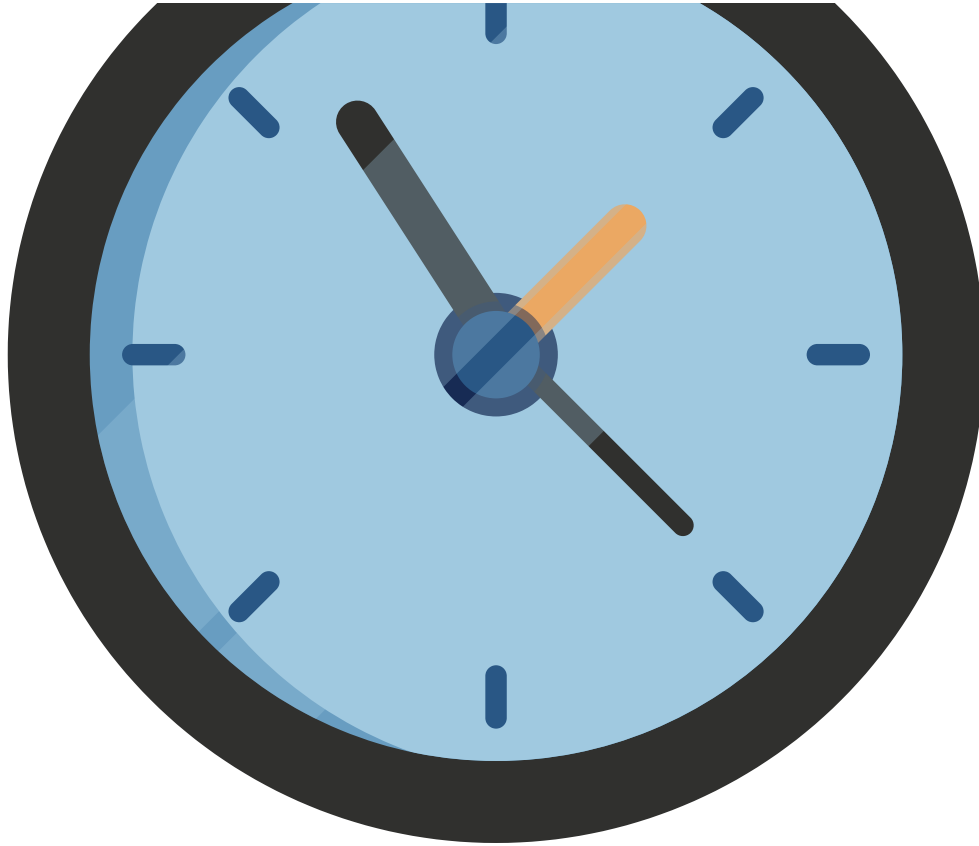
- **Paranoia, feeling suspicious or persecutory ideation** – Thinking people are out to get them, or (less commonly) thinking other people are reading their mind or stealing their thoughts, despite evidence to the contrary.
- **Hallucinations** - Hearing, seeing, or smelling things that don't exist. For example, someone might feel like they have bugs under their skin, are hearing someone calling their name when no-one is around, or are imagining things are changing shape or moving when they are not. Hallucinations may range from minor (e.g. mild visual distortions) to more severe hallucinations (e.g. fully formed conversations).
- **Muddled thoughts or incoherent speech.**
- **Being hostile or increased aggression** towards others.
- **Depression or anxiety**

*From Voce et al., 2019

How long does methamphetamine-associated psychosis last?

Symptoms can last a few hours or up to a few days and will often cease after stopping use or following **withdrawal** from methamphetamine. A small number of people may find these symptoms last much longer (e.g. more than a few weeks) or continue even when a person is not using. This might mean that an underlying psychotic disorder, such as **schizophrenia**, is present. It has been estimated that between 19-33% of people may develop primary psychotic disorder over the longer term (i.e. 6-20 years after the initial event). Recent research suggests that most cases of MAP that present to hospital are able to be treated and were largely resolved within 24 hours without any need for further treatment.





For more information, get the factsheet [here](#)

Treatment and support

What should you do if someone is experiencing MAP?

MAP causing distress and functional disturbance needs to be addressed by medical services to minimise harm to the person experiencing MAP and others. Someone experiencing MAP may feel very unsafe and believe that they are in danger.

As such, it is important to keep calm and avoid intimidating confrontation. Persons **intoxicated** with methamphetamine are in a highly aroused state. When coupled with **paranoia**, they can feel easily threatened. This can be associated with an increased risk of aggressive behaviour. Depending on the level of psychosis someone is experiencing, they may or may not know that they need help. Seeking clinical support (e.g. [mental health crisis team](#)) can help manage the situation. In the meantime, maintaining good body language and communication are important (see [Language](#)).

Screening

MAP symptoms are often mild and transient, and not every symptom will always be present or observable. If an individual is experiencing distress, opening the discussion around what they are going through can be useful for both the individual and the health worker. Ask the individual if they are comfortable talking about or explaining what they are feeling.

When communicating with someone experiencing MAP, consider:

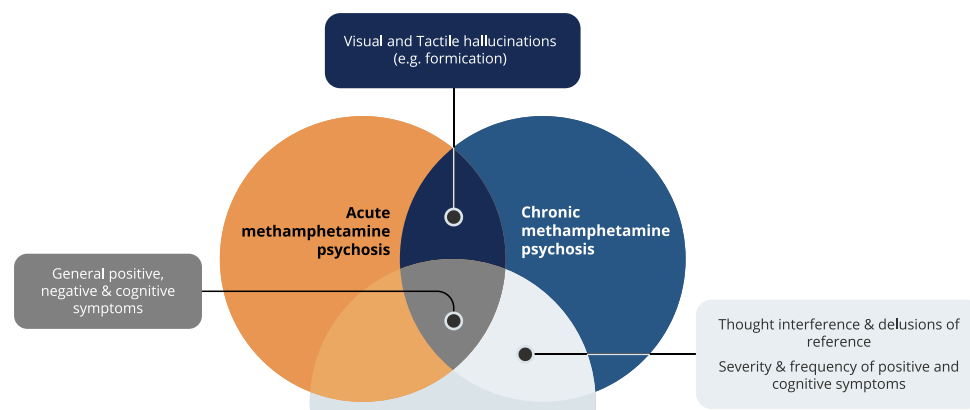
- That they may not be aware of what is happening to them
- Start with finding common ground – build up to more specific questions
- Let them guide the pace and style of interaction (when reasonable)
- Avoid the term ‘psychosis’ and instead ask about changes in their thoughts, feelings or behaviour. How long have these changes been present? Are they finding them distressing?
- Acknowledge that this experience would be stressful, and that seeking help takes a lot of courage

**Adapted from Mental Health First Aid, 2022*

If an individual is experiencing active psychosis, symptoms such as disorganised thought or speech patterns may mean that observation is more helpful in identifying symptoms. For example:

- Are they having conversations with someone who isn’t in the room?
- Are they responding abnormally to things in the environment?

As it can be difficult to formally identify MAP, and to differentiate between MAP and other psychotic symptoms, it might be helpful to use a psychosis screening tool. The National Drug and Alcohol Research Centre (NDARC) have developed a [Psychosis Screener](#) which may be useful for health workers in confirming symptoms of psychosis in an individual. Information about interpreting the test is available on the [NDARC website](#). Turning Point have also developed a detailed [Methamphetamine Treatment Guideline](#) to assist health professionals in managing methamphetamine use disorder and associated clinical presentations (such as methamphetamine-associated psychosis).



Schizophrenia

Treatment

Guidelines for managing acute episodes of psychotic symptoms typically include the use of sedatives or antipsychotic medications. These have been shown to help minimise acute symptoms of psychosis, while still allowing for monitoring and further assessment. Turning Point have also developed a detailed [Methamphetamine Treatment Guideline](#) (2018) to assist health professionals in managing methamphetamine use disorder and associated clinical presentations (such as methamphetamine-associated psychosis). The guideline also provides comprehensive information on the pharmacological and behavioural management of acute psychosis.

Treatment should involve a focus on managing the underlying methamphetamine use. Any reduction in methamphetamine use will be a reduction in risk for experiencing further psychotic episodes. Behavioural treatment for methamphetamine dependence is arguably the most optimal approach for reducing psychosis in persons who use methamphetamine.

Other considerations should be around **language and environment**:

Language

The words and tone you use are important in managing an episode of methamphetamine-induced psychosis. Remember that this event is likely frightening for the person experiencing it, so being direct but reassuring can alleviate the stress of the situation.

- Use clear, non-judgemental, and supportive language
- Avoid overly clinical terminology, and offer explanations on what is happening
- A confident and calm tone can ensure that they feel more secure and at ease
- Listen attentively and engage with the individual, treating them with kindness and respect
- Neutral body language such as keeping your hands visible, and arms by your sides can also signal that you are not a threat
- Avoid arguing or agreeing with any unusual beliefs - stay neutral and offer assistance

Environment

Adapting the setting in which you provide treatment can minimise any risks of escalation and allow the best-possible outcomes for someone experiencing MAP and others. Considerations include:

- A space that is private, quiet, safe, and free from distractions
- Staying in well-lit areas, as this may help reduce visual disturbances
- Provide the individual with as much personal space as possible
- Avoid sudden movements
- Consider the available exits and access to support in the space. If there is only one exit, position yourself closest to it
- Have an exit plan in mind in case the situation escalates and you need to leave for safety reasons
- Remove any items that could be a danger to the individual or others

Ongoing support

As MAP is highly related to current and ongoing methamphetamine usage, assisting in the reduction or cessation of methamphetamine use is key to reducing chances of **psychosis**. For most people, once they stop using methamphetamine, any psychosis related symptoms stop. However, for a small number of people psychotic symptoms will continue and some will go on to develop a disorder. There are several reasons why some people may develop psychotic disorders including those previously admitted to hospital for substance-induced psychotic disorder. This research suggests follow-up periods of 2 years to monitor any changes or recurrence in psychotic symptoms. For individuals who have a familial risk for psychosis, there is an increased risk of progression to schizophrenia following an episode of substance-induced psychosis. Health workers can also provide early intervention for individuals whose psychotic symptoms persist even in periods of abstinence, especially if a family history for schizophrenia or other primary psychotic disorder is present.

Regardless of risk level, addressing the underlying methamphetamine use (i.e. through referrals to treatment or harm reduction programs) will be the most important component for health workers to address. Any reduction in methamphetamine use will reduce further risk of psychotic episodes.

Health workers can use this opportunity to inform the patient of ongoing risks and support them in biopsychosocial treatment for methamphetamine use and dependence.

Health workers can assist with educating the individual in:

- **Recognising the warning signs of psychotic symptoms** (such as feeling more anxious or paranoid than usual or seeing/hearing strange things).
- **Treatment or rehabilitation support** – providing advice about structured programs, or cessation advice
- **Psychosocial support** such as peer support groups or counselling
- **Management of co-occurring disorders** such as **depression** and **anxiety**, as these may increase chance of relapse to methamphetamine use
- **Monitoring and managing physical health** issues related to methamphetamine use
- **Minimising social stressors** (such as housing, finances, legal problems, or social support) and **accessing services** that may be able to assist in these areas

The Comorbidity Guidelines has a [useful guide for AOD and health workers on coordinating care](#) for individuals

Further resources

[NDARC's Ice Psychosis Factsheet](#)

[Cracks in the Ice: Managing a client with symptoms of psychosis](#)

[Comorbidity Guidelines: Managing symptoms of psychosis](#)

[SA Health: Management of acute presentations related to methamphetamine use \(clinical guidelines\)](#)

[Turning Point: Methamphetamine Treatment Guidelines](#)

[Mental Health First Aid: Psychosis Guidelines](#)

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