A Clinical Guide for
Primary Care Health
Professionals

Methamphetamine

Commonly known as 'Ice'

NCCRED

National Centre for Clinical
Research on Emerging Drugs

Who are we?

We are an innovative centre bringing together clinicians and researchers to detect and respond to trends in emerging drug health.

NCCRED strives to forge world-leading excellence in the treatment of methamphetamine and other emerging drugs of concern. We never lose sight of the fact that people who use drugs, as well as their families, carers and communities are at the core of what we do.

NCCRED aims to collaborate and build the capacity and scope for new clinical research into emerging drugs; and rapidly translate these findings into best clinical practice.

Funded by the Australian Government Department of Health, NCCRED is made up of a consortium: The National Centre for Education and Training on Addiction (NCETA, Flinders University); The National Drug Research Institute (NDRI, Curtin University); The National Drug and Alcohol Research Centre (NDARC, The University of New South Wales); and St Vincent's Health Australia.

About Methamphetamine

Methamphetamine is a psycho-stimulant drug available in powder, paste or crystalline form and is typically snorted, smoked or injected.

In 2019, of Australians aged 14 or over who reported using methamphetamine in the previous 12 months, 50% reported using the more potent 'crystalline' form ("Ice") of the drug, of whom 30% were using at least once a week or more[1].

Methamphetamine is a powerful central nervous system (CNS) stimulant that can induce feelings of euphoria, alertness, increased confidence and wakefulness. Acute effects can last for 8-24 hours.

Repeated use of methamphetamine may cause significant depletion of CNS neurotransmitters, accompanied by depression, excessive tiredness and fatigue.

Did you know?

Methamphetamine is typically measured in 'points' (1 point is 0.1 of a gram), 'grams', or money (1 point is approximately $50, 1 gram is approximately $300[2]).

Start the conversation

People who use methamphetamine may present initially with sleep problems, anxiety or low mood/depression.

Consider asking about stimulant use when assessing sexually transmitted infection and blood borne virus risk, or working up hypertension and cardiac disease, particularly in a young person.

You could ask...

As your GP/Healthcare worker, I am concerned about all aspects of your health, such as nutrition, physical activity, weight, smoking, alcohol and drug use.

Is it OK if I ask you about these things?

Assessment of Drug Use

Methamphetamine is often used in conjunction with other drugs. A substance use history is vital to identify the most appropriate management.

Did you know?

Meth, Ice, Crystal, Shabu, Tina and Glass refer to the crystalline form, which is of the highest purity.

Other forms of methamphetamine include Base (a waxy substance, known as Pure, Point or Wax, which is of medium to high potency) and Speed (a powder, which is now almost always methamphetamine, and is of lowest purity)[3,4].

Start by asking the patient:

- If they currently take, or have ever taken pharmaceutical drugs such as opioids or benzodiazepines?
- Do they smoke tobacco? Do they vape? Do they smoke anything else?
- Do they have any concern/have they had any problems as a result of their alcohol, smoking, medication or drug use?
- Have they ever used stimulants?
- What type of stimulant they are using e.g pills, powder, base or ice; and how they are administering it - oral, nasal, smoked, injected?
- How much are they using? How regularly? When did they last use?
- At what age did they start using methamphetamine, when did they start using it regularly and when did they start this route of administration?
- Have they had any periods of abstinence? If so, were there any precipitating factors that caused a relapse? What interventions or previous treatments did they use during these attempts?
- Are there any other drugs that you want to talk about e.g. GHB, sleeping tablets, benzodiazepines...?

Consider using the eASSIST-Lite ultra-rapid screening tool (Age 18+)[5,6]

Ask the following

1. In the last 3 months did you use an amphetamine-type stimulant, or a stimulant medication not as prescribed?

   0 No 1 Yes

2. In the last 3 months did you use a stimulant at least once each week or more often?

   0 No 1 Yes

3. In the last 3 months has anyone ever expressed concerns about your use of a stimulant?

   0 No 1 Yes

A score of 2 or more strongly suggests stimulant use disorder.

Effects of Methamphetamine Use

Desired Effects

The reasons a patient uses methamphetamine may impact where, when, how much and how often they use it.

Desired effects include:

- Euphoria
- Increased confidence
- Increased concentration
- Increased focus
- Ability to stay awake for longer periods

Adverse Effects

Asking your patient to reflect on the negative effects of methamphetamine use can lead into a discussion about risk and readiness to change.

Adverse effects include but are not limited to:

- Anxiety
- Low Mood
- Weight loss
- Poor appetite
- Hallucinations
- Agitation
- Sleep problems
- Teeth grinding
- Paranoia

1 Stimulant-Specific Health Assessment

- ☐ Pulse
- ☐ Blood Pressure
- ☐ ECG/Stress Echocardiogram
- ☐ Pregnancy Test
- ☐ Weight
- ☐ Temperature
- ☐ Oral health examination
- ☐ Discuss PrEP/PEP
- ☐ Mini Mental State Examination
- ☐ HIV/Hep C/ Hep B/HPV/ Chlamydia/ Gonorrhea
- ☐ Discuss Contraception
- ☐ Examine skin for localised infections & signs of tissue damage

Neurological
Acute Toxicity can present with tremor, sweating, dilated pupils, agitation, confusion, anxiety, seizures, hallucinations and serotonin syndrome[7].
Chronic CNS hyperstimulation can lead to frequent headaches, tremors, choreoathetoid movements and seizures, irritability, apathy, depression, anxiety, insomnia, increased impulsivity and impaired judgement[7,8].

Dermatological
Injecting can be associated with skin abscesses. Very heavy daily use can be associated with delusion of parisitosis or formication, causing compulsive scratching and risking skin lesions and bacterial cellulitis[8].

Cardiovascular
Acute Toxicity is associated with narrow-complex tachycardia, palpitation, systemic hypotension or hypertension, acute myocardial infarction and dyspnoea as well as strokes including haemorrhagic strokes in young people[9,10].
Chronic use is associated with chronic hypertension, aortic dissection, acute coronary syndromes, pulmonary arterial hypertension and methamphetamine-associated cardiomyopathy and strokes[9,10].

Respiratory
Smoking methamphetamine can lead to respiratory problems, lung damage and disorders such as pulmonary oedema, bronchitis, pulmonary hypertension and granuloma[7].

Hepatic
Acute kidney injury, rhabdomyolisis and acute liver injury including hepatic necrosis has been reported, even in the absence of hepatitis[11].

Dental/Oral Health
Severe tooth decay, oral soft tissue inflammation and breakdown is reported. Although evidence suggests this is largely due to lifestyle factors associated with use of methamphetamine such as malnourishment[12,13].

Sexual and Reproductive Health
Methamphetamine use has been associated with increased transmission of sexually transmitted infections[14]. In women of reproductive age, long-term use of methamphetamine can cause irregular menstruation[15] which may result in unplanned pregnancy. Psychostimulants can cross the placental barrier to affect the foetus during gestation, and may also be present in breast milk. Women who use methamphetamine regularly are advised not to breastfeed.

2 Assessment of Social Situation

Understanding your patients family and social situation is important when working with your patient to make changes in relation to their methamphetamine use, and can help with identifying factors which would benefit from a referral to external agencies (such as housing and other social services etc.)

Ask Questions

Have you ever experienced any type of abusive behaviour (eg. physical violence, sexual assault, emotional abuse, social or financial control) from a current or previous partner family or friend? If so, have you ever received treatment or engaged with services about these issues?

What is your main social support. Are they aware of your drug use? Do you usually use drugs alone or with others?

If a carer for children, do you feel your drug use is having any impact on your parenting? Where are you living? Do you feel safe?

Are you currently involved with any other services? (e.g counsellor, social services, case management)

Are you working or studying? If so is your drug use having an adverse effect on these commitments?

3 Assessment of Mental Health

Mood and anxiety disorders often coexist with methamphetamine use disorder, and may be pre-existing, exacerbated by or induced by methamphetamine use.

Methamphetamine-induced depressive disorders or anxiety are characterized by prominent disturbance in mood and panic attacks, causing significant distress and impaired functioning.

Mood disorders that are pre-existing will require different treatment planning to prevent potential interactions and relapse. There is the potential for drug interactions, and symptoms can be exacerbated by lack of sleep or the drug.

Methamphetamine-associated psychosis is typically transient, but can present as misperceptions, hallucinations, extreme agitation, delusions, suspiciousness, and paranoia.

Consider using the following

- The Kessler Psychological Distress Scale (K10)[16] as a brief screening tool for measures of mental health symptoms in the past 30 days.
- The Psychosis Screen[17] if you suspect psychotic symptoms.
- General psychiatric history to assess if your client requires referral to a mental health service.

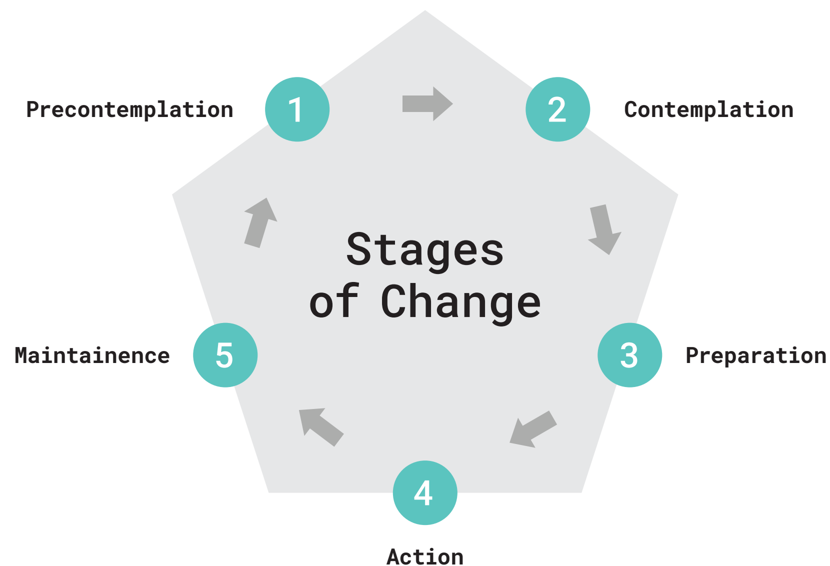
Both screening tools are available online and on our website. **nccred.org.au/guidance-notes-methamphetamine**

Did you know?

In Australia, among people who report recent methamphetamine use, 74% use cannabis and 73% engage in risky drinking[1].

Management

Many patients may not define their methamphetamine use as problematic. Consider assessing the person's readiness and motivation to change.



(Prochaska and DiClemente, 1992)

Harm Reduction

- Encourage engagement with health services
- Discuss safer sex, e.g. condoms, lubricant and PrEP/PEP
- Discuss safer injecting techniques and provide advice on local Needle & Syringe Programs (NSPs)
- Encourage eating at least one meal per day
- Encourage adequate hydration
- Advise clients to plan how much they will use and tell a friend they trust what their plans are
- Advise clients to try and get some sleep daily, and if not possible, to rest in a darkened room for a few hours each day
- Warn about the danger of overdose if taking alcohol, opioids and benzodiazepines to help with sleep
- Encourage clients not to drive when using methamphetamine

Ask Questions

Ask the following

On a scale of 1-10, how worried are you about your methamphetamine use?

How important is it for you to make changes to your use?

Why did you give these scores?

What would it take for your score to go up or down?

Studies show that 1/4 to 1/2 of Methamphetamine users would like to reduce their use, rather than abstain. Motivational interviewing techniques and tools such as 'The stages of change'[18] can be used as a guide to monitor engagement.

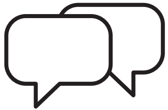
Harm reduction education and interventions can be provided at any stage.

Overdose Advice

Signs of methamphetamine overdose include severe headache, psychotic symptoms, chest pain, vomiting, overheating and extreme agitation.

Clients should be advised to call triple zero (000) and ask for 'AMBULANCE".

The police will not be called unless they are at risk of danger. Demonstrate the recovery position and give advice on when it is appropriate to perform CPR.



Discussing Treatment Options

Stimulant Use Disorder[19] (which includes amphetamine-type substances such as methamphetamine) is defined as a pattern of amphetamine-type substance, cocaine or other stimulant use leading to clinically significant impairment or distress, as manifested by at least 2 of the following in the past year:

- Using larger amounts or over a longer period than intended
- Persistent desire to cut down
- A great deal of time spent obtaining the drug, or recovering from its use
- Strong desire or craving to use
- Failure to fulfil major work, home, educational roles
- Continued use despite persistent or recurrent physical or psychological problems caused or exacerbated by use
- Important social, occupational, or recreational activities are given up or reduced because of stimulant use
- Recurrent stimulant use in situations in which it is physically hazardous
- Continued use despite knowledge of physical or psychological problems known to likely be caused or exacerbated by the stimulant
- Tolerance as defined by either needing markedly increased amounts of methamphetamine for the desired effect, or a diminished effect with use of the same amount of methamphetamine
- Withdrawal, as manifested by the characteristic withdrawal syndrome (as outlined below) or the stimulant is taken to relieve or avoid withdrawal symptoms

Set realistic treatment goals with your patient. Some individuals may feel that a goal to control their use is more achievable than abstaining. In this instance harm reduction advice and brief motivational interviewing may be appropriate.

Methamphetamine withdrawal occurs upon cessation, or reduction in dependent, prolonged and/or heavy use. Withdrawal is generally more protracted than for other drugs and is characterised by three distinct phases: Crash; Acute; Sub-Acute[20]

Crash	Acute	Sub-acute
• Can occur after cessation of use even in those without methamphetamine dependence/severe methamphetamine use disorder • Usually 12-24 hours post last use • Characterised by: exhaustion and fatigue, dysphoric mood, anxiety, agitation, cravings and non-specific aches and pains • Symptoms typically persist for 2-3 days[20,21].	• Peak withdrawal symptoms will likely occur within the first 7 days • Characterised by: mood fluctuations, restlessness, irritability, anxiety, agitation, poor concentration, increase appetite, muscle tension and fatigue. • Disturbance of thought (e.g. psychosis, paranoia, delusions) and perception (e.g. auditory hallucinations, misperceptions) may emerge throughout this phase[22].	• Can last for weeks to months • Characterised by episodic fluctuations of mood, levels of craving and quality of sleep[22].

Consider using the Severity of (Methamphetamine) Dependence Scale (SDS)[23]

Question	0	1	2	3
1. Did you think your methamphetamine use was out of control in the past week?	Never or almost never	Sometimes	Often	Always or nearly always
2. During the past week, did the prospect of missing a hit/dose of methamphetamine make you anxious or worried?	Never or almost never	Sometimes	Often	Always or nearly always
3. Did you worry about your use of methamphetamine in the past week?	Not at all	A little	Quite a lot	A great deal
4. Did you wish you could stop using methamphetamine in the past week?	Never or almost never	Sometimes	Often	Always or nearly always
5. How difficult did you find it to stop, or to go without methamphetamine in the past week?	Not difficult	Quite difficult	Very difficult	Impossible

A score of 4 and above is indicative of clinically significant dependence[24].

Treatment Planning and Withdrawal Care

Treatment planning

People who are dependent on methamphetamine (score of 4 or greater on the SDS) and/or people who use regularly may experience a typical withdrawal syndrome on cessation or reduction of use, and will benefit from support and symptomatic treatment of the withdrawal period. Withdrawal itself is not a treatment and does not change substance use outcomes. Attempts at reducing or ceasing methamphetamine use are marked by profound cravings and high rates of lapse and relapse. Post-withdrawal treatment planning should begin at commencement of a supported withdrawal episode to entrench lasting change and recovery.

This includes:

- Assessment and treatment of co-existing conditions
- Addiction counselling
- Support groups
- Residential rehabilitation

Withdrawal care

Withdrawal can usually be managed as an outpatient, however if there are significant medical or psychiatric co-existing conditions (and/or pregnancy), inpatient management may be indicated.

Withdrawal care involves:

- Education and coping techniques for withdrawal symptoms (eg relaxation techniques, sleep hygiene, advice regarding diet).
- Education regarding the nature of cravings and strategies for coping with them during withdrawal.
- Specific strategies for addressing agitation, anger and sleep disturbances.
- Frequent orientation, reassurance and explanation of procedures to clients with thought or perceptual disturbances.
- Crisis intervention, addressing accommodation, personal safety or other urgent welfare issues.

Consider the following

There is currently no evidence-based pharmacotherapy for withdrawal management and medicines should be used in conjunction with supportive care strategies to manage withdrawal. Benzodiazepines should not be prescribed for more than 3 to 7 days due to risk of dependence.

Antidepressants may be indicated for symptoms of depression that persist after stimulant withdrawal (although this may take several weeks or months to determine). Psychiatric assessment and a treatment plan that includes counselling should be considered.

- **Mild psychosis** can be managed with short-term (up to 7 days) prescription of antipsychotics e.g., Olanzapine 2.5-5mg PO prn TDS.
- **Anxiety** can be treated with short-term (up to 7 days) prescription of benzodiazepines e.g., Diazepam 5-10mg QID prn.

Assess carefully for risk of withdrawal from other substances as methamphetamine use disorder may coexist with other substance use disorder (including benzodiazepines, GHB, alcohol, z-drugs).

If managing withdrawal in the community setting, provide ongoing support and consultation in your practice.

Summary

- Withdrawal from methamphetamine is not usually medically dangerous. Treatment consists largely of psychosocial interventions and supportive care
- Methamphetamine withdrawal can last from 2 to 4 days, up to 2 to 4 weeks
- There is currently no evidence-based pharmacotherapy for withdrawal management. Short term benzodiazepines and atypical antipsychotics have been used to treat symptoms of withdrawal or complications of chronic methamphetamine use, such as agitation or psychosis.

Further Information & Resources

For Health Professionals

- **Meth Check: Ultra Brief Intervention Tool (v2.0).** Insight 2018: insight.qld.edu.au/shop/meth-check-ultra-brief-intervention-tool-insight-vers-20-2018
- **Harm Reduction for Methamphetamine – Prompt Cards.** Insight 2018: insight.qld.edu.au/shop/harm-reduction-for-methamphetamine-prompt-cards
- **Methamphetamine Treatment Guidelines - Practice guidelines for health professionals (2nd Ed.)** Turning Point 2018: turningpoint.org.au/sites/default/files/2019-05/Turning-Point-Methamphetamine-Treatment-Guidelines.pdf
- **Cracks in the ICE** (Online toolkit): cracksintheice.org.au/
- **Methamphetamine Fact Sheet.** National Drug and Alcohol Research Centre 2016: ndarc.med.unsw.edu.au/sites/default/files/ndarc/resources/NDA073%20Fact%20Sheet%20Methamphetamine.pdf
- **Ice in General Practice.** RACGP Good Practice 2016: racgp.org.au/download/Documents/Good%20Practice/2016/April/GP2016Apr-ice.pdf
- **Alcohol and Drug Foundation - Breaking the Ice** (videos and fact sheets in multiple languages): adf.org.au/programs/breaking-ice/
- **Australian Drug Information Network** (searchable drug and alcohol directory): adin.com.au

For Patients

- **Meth Check: 'Ways to Stay Safe' Harm Reduction Booklet.** Insight 2016: insight.qld.edu.au/shop/meth-check-booklet
- **Meth Check: Factsheet For Families.** Insight 2018: insight.qld.edu.au/shop/meth-check-factsheet-for-families
- **Withdrawal from Crystalline Methamphetamine (Ice).** Alcohol and Drug Foundation 2016: cdn.adf.org.au/media/documents/withdrawal_from_ice.pdf
- **Australian Drug Information Network** (searchable drug and alcohol directory): adin.com.au
- **Family Drug Support Australia**: fds.org.au/
- **Counselling Online - Methamphetamines.** Turning Point 2019: counsellingonline.org.au/how-we-can-help/methamphetamines
- **Youth Drugs and Alcohol Advice (YoDAA)**: yodaa.org.au/
- **Australian Injecting and Illicit Drug Users League (AIVL)**: aivl.org.au
- **SMART Recovery Australia**: smartrecoveryaustralia.com.au

Specialist Alcohol & Other Drug Intake Teams

If your client needs specialist drug and alcohol assessment and treatment either as an inpatient or outpatient; Call or Fax a referral to your local AOD intake team.

www.nccred.org.au/aod-intake

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Advice & Treatment

Getting into drug treatment can reduce the risk of dying from an overdose. Call the National Alcohol and other Drug Information Service (ADIS) on:

1800 250 015

You will be automatically directed to the ADIS State or Territory you are calling from.

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