Stimulant Toxicity

Harm Reduction Manual

Updated: April 29, 2026

First Nations Health Authority
Health through wellness

BC Centre for Disease Control
Provincial Health Services Authority

Table of Contents

How to cite this document

British Columbia Centre for Disease Control & First Nations Health Authority. *Stimulant Toxicity – Harm Reduction Manual.* 2026. <https://www.bccdc.ca/Health-Info-Site/Documents/Section%2011%20-%20Stimulant%20Toxicity.pdf>.

Stimulant Use

Stimulant use is relatively common amongst people who use substances in BC. In 2023, clients of harm reduction distribution sites reported that stimulants (specifically crystal methamphetamine) were the most frequent type of substance they had used in the past three days.[1]

Many people who use stimulants have reported experiencing stigma and discrimination from service providers when they access health and social services.[2, 3] There are common negative stereotypes that people who use stimulants are violent and dangerous.[4] People who use stimulants are often turned away from medical, social, or housing services because service providers are afraid of the way people can act when they are using stimulants. Due to the unpredictable and unregulated drug supply in BC, people may not always be aware that they have consumed stimulants.

People use stimulants for many reasons. For example, they may use stimulants to create feelings of euphoria and confidence, to reduce hunger, to improve wakefulness, or to protect themselves against assault or theft (particularly for people who are unhoused), amongst other reasons.[5]

Stimulant Toxicity

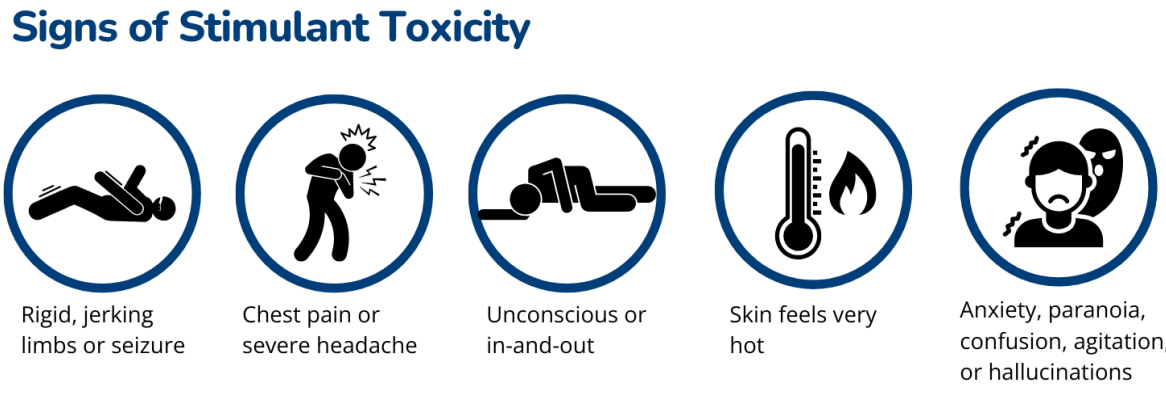
Stimulant use can cause negative health effects, including stimulant toxicity. Stimulant toxicity—also called **overamping** or stimulant overdose—occurs when a toxic amount of a substance overwhelms a person's body. This causes significant and urgent behavioural, physiological, or psychological effects.

A person's response to stimulant toxicity can be different depending on the type, amount, and potency of the stimulant, as well as individual factors such as a person's tolerance, pharmacokinetics (the way a body processes a drug over time), health status, and previous trauma or negative experiences. Although the way that people respond to stimulant toxicity varies, some people may feel extremely agitated or experience psychosis.[6]

The severity of stimulant toxicity symptoms vary. Signs and symptoms of stimulant toxicity include:[6]

- Agitation (irritability, restlessness, racing thoughts, inability to remain still),
- Chest pain,
- Sweating,
- Confusion,
- A fast or irregular pulse,
- High blood pressure,
- Hot damp skin,
- Feeling very hot and removing clothing,
- High body temperature (hyperthermia),
- Mania (excessive enthusiasm, overactivity),
- Paranoia (fearful, mistrustful),
- Rigid, jerking limbs or abnormal movements, and
- Skin-picking.

Figure 1. Signs of Stimulant Toxicity. The most common signs of stimulant toxicity are rigid, jerking limbs or seizure, chest pain, loss of consciousness, feeling very hot, and anxiety, paranoia, confusion, agitation, or hallucinations.



It is important to note that a person experiencing one or more signs does not necessarily mean the person is experiencing stimulant toxicity. For example, a person who picks their skin or is experiencing agitation is not necessarily experiencing stimulant toxicity. **These signs should be considered together.** It is important for service providers to be able to recognize signs of moderate to severe stimulant toxicity.[7]

Always **call 911 if the person shows 1 or more of the following signs and symptoms of moderate to severe stimulant toxicity:**[7]

- Chest pain or feeling pressure, tightness, crushing, burning, or stabbing feeling in the chest, jaw, back, or arm,
- Seizure,
- High or abnormal pulse (heart rate): Normal is 60-100 beats per minute,
- Very high body temperature (40C or higher),
- Very high blood pressure (180/110 or higher),
- Shortness of breath,
- Loss of consciousness (unresponsive),
- Severe sweating or feeling hot but not sweating,
- Severe headache,
- Sudden vision changes, or
- Extreme anxiety, panic, agitation, or psychosis.

> Sometimes people don't realize overamping is such an **intense experience** that you don't always notice right away. It is **very different for everyone.** There are different variations of it, and it can be hard to tell when someone is overamping.
>
> If you think someone is in distress, **it's better to go check on them** and make sure they are ok instead of assuming they are fine. It can be easy to dismiss it and think it's normal.
>
> *-Kali, Member of PEEP*

Stimulant Toxicity Response

There is no antidote to reverse stimulant toxicity. Unlike opioids, naloxone cannot reverse a stimulant toxicity. However, a person can experience stimulant toxicity at the same time as opioid poisoning. If a person is experiencing signs of an opioid poisoning (slow, stopped, or abnormal breathing, unresponsive, and small pupils), give naloxone and call 911.

Service providers responding to stimulant toxicity should be aware of how their own biases influence how they care for people who use stimulants. Service providers should offer non-judgmental, culturally safe care and acknowledge the distress people feel when experiencing stimulant toxicity.

When responding to stimulant toxicity, service providers should:[8-11]

- Call 911 for emergency health services if someone has signs or symptoms of moderate to severe stimulant toxicity. Tell the emergency call-taker that you suspect stimulant toxicity.
- If at any time the person does not have a pulse, start CPR with chest compressions and (if trained or as directed by the 911 call-taker) give rescue breaths. Use an AED (Automated External Defibrillator if available.

Service providers should use a trauma- and violence-informed care approach:

- Use a low, calm, and steady tone of voice.
- Ask permission before touching the person.
- Let the person speak at their own pace and don't interrupt them.
- Provide reassurance and try to help meet the person's immediate needs. For example:
    - "I am here to help you."
    - "What can I do that would be helpful for you?"
- Calmly explain to the person about what you are doing before you do it. For example:
    - "I am going to give you a cup of water and then I am going to sit with you."
- Move slowly and deliberately.
- Keep your hands down and visible at all times.
- Provide the person with 1 to 3 feet of personal space. Do not crowd them.
- Gently assist the person to move into a quiet environment away from activity and noise. Some people may not want to move away. Follow the person's lead.
- Encourage the person to stay hydrated by offering them water. Encourage them to take sips of water instead of drinking it too quickly.
- Provide space for the person to do self-soothing behaviours (e.g., rocking or repeating words to themselves).

- Ask permission to place cool, damp cloths on the person's forehead, back of neck, and armpits. Explain that this can help calm their nervous system.
- Do not restrain the person and do not put anything in their mouth.
- Avoiding asking a lot of questions.

How to Recognize Stimulant Toxicity

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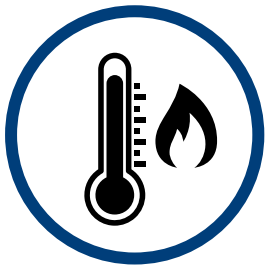
Signs of Stimulant Toxicity

Rigid, jerking limbs or seizure

Chest pain or severe headache

Unconscious or in-and-out



Skin feels very hot

Anxiety, paranoia, confusion, agitation, or hallucinations

Call 9-1-1 if someone shows 1 or more signs of moderate to severe stimulant toxicity:

- Chest pain or feeling pressure, tightness, crushing, burning, or stabbing feeling in the chest, jaw, back, or arm
- High or abnormal pulse (heart rate): Normal is 60-100 beats per minute
- Very high body temperature (40C+)
- Very high blood pressure (180/110+)
- Seizure
- Shortness of breath
- Loss of consciousness (unresponsive)
- Severe sweating or hot and no sweating
- Severe headache
- Acute vision changes
- Extreme anxiety, panic, agitation, or psychosis

Stimulant Toxicity & Opioid Poisoning

Unlike an opioid overdose, there is no antidote to stimulant toxicity.

However, a person can experience stimulant toxicity at the same time as opioid poisoning. If a person shows signs of an opioid overdose (slow, stopped, or abnormal breathing, unresponsive, and small pupils), give naloxone and call 911.

How to Respond to Stimulant Toxicity

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1 **Call 9-1-1** if someone shows 1 or more signs of a moderate to severe stimulant toxicity

2 Tell the emergency call-taker that you suspect stimulant toxicity.

3 If you are trained in CPR, check for a pulse for less than 10 seconds. If there is no pulse, begin CPR with chest compressions and rescue breathing. Use an AED if available.

Use a Supportive Approach

- Speak and move slowly and calmly
- Ask permission before touching the person, and explain what you are going to do before you do it
- Provide space and always keep your hands visible
- Move to a quiet and calm area
- Offer sips of water
- Place cool, damp cloths on their forehead, back of the neck, or armpits

Aftercare

- People commonly experience withdrawal when recovering from stimulant use or stimulant toxicity
- Promote hydration, nutrition, and sleep
- Support identifying goals and offer connections to health and social services
- Reassure people that symptoms get less intense over time, and help them develop a safety plan for if they experience thoughts of self-harm or suicide

Seizure First Aid

Stimulant toxicity can cause the person to experience a seizure. Both opioid use and stimulant use can cause seizures. Sometimes, an opioid poisoning can look like a seizure because of body stiffness or twitching muscles, so it is important to also monitor for signs of an opioid poisoning.

Seizure first aid should be provided if the person displays seizure-like movements (such as sustained rhythmic jerking movements, muscle tensing or stiffness, muscle twitching, or whole-body flexing and extending). Service providers should:[12]

- Check the person's breathing. Sometimes, an opioid poisoning can look like a seizure because of body stiffness or twitching muscles. If the person's breathing is slow, stopped, or abnormal (e.g. snoring, gasping, or choking), give rescue breaths and naloxone when it is safe to do so.
- Stay with the person.
- Time the seizure.
- Remove nearby objects that may cause harm.
- Turn the person on their side into the recovery position, loosen clothes around their neck, and support their head using a soft pillow or a piece of clothing when it is safe to do so.
- Do not restrain the person and do not put anything in their mouth.
- Tell the 911 call-taker if the seizure-like activity lasts longer than 5 minutes.

Seizure Recovery

Recovery after a seizure (called the post-ictal phase) usually lasts between 5 to 30 minutes. Symptoms vary but can include fatigue, confusion, anxiety, headache, and muscle pain.

Before emergency medical services arrive, responders can:

- Check breathing. If they are not breathing normally (taking less than 12 breaths per minute or making unusual sounds), it may be an opioid poisoning. Start the SAVE ME steps to respond to an opioid poisoning.
- When the person is awake and breathing normally:
    - Talk calmly. Explain what happened and where they are.
    - Dim the lights and reduce the amount of people and noise around them.
    - Offer privacy, discretion, and support if they lost bladder or bowel control.
    - Acknowledge they may feel confused, exhausted, embarrassed, or sore.
    - Discuss the possibility of a seizure happening again, which may be more likely if they go into withdrawal.[88-96,111]

How to Respond to Substance Use-Related Seizures

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CALL 9-1-1 if someone is having a seizure OR is having seizure-like movements

Signs a person may be having a substance use-related seizure:

1. Muscles suddenly tense up and the body becomes stiff
2. Body then begins to make quick, jerking movements (like tremors or shaking).

Substance use related seizures can be caused by several reasons, including withdrawal, drug poisoning, mixing substances, or having a medical condition like epilepsy.

WAIT

Check that it's not an opioid poisoning first!
Check if they're breathing normally (12+ breaths per minute and no unusual sounds). If they are NOT breathing normally, follow SAVE ME steps.

DURING A SEIZURE:

1

Clear area and remove hazards to prevent injury.

2

Time the seizure (should last ~3 min).

3

Stay with them until the seizure ends.

Do not touch them or put anything in their mouth

AFTER A SEIZURE:

4 Place them in the recovery position on their side.

5

- Keep the area quiet and calm.
- Explain they may feel confused, exhausted.
- Encourage them to go with paramedics.

For more harm reduction information visit: www.towardtheheart.com
For BC mental health and substance use supports visit: helpstartshere.gov.bc.ca

April 2025

Stimulant Toxicity Aftercare

It is common for people to experience withdrawal when they are recovering or "coming down" from stimulant use or stimulant toxicity.

Signs and symptoms of stimulant withdrawal can include:[6]

- Depression,
- Irritability,
- Cravings,
- Confusion,
- Hallucinations,
- Increased appetite,
- Tremors (shaking or trembling, often in the hands),
- Paranoia,
- Short-term memory loss, or
- Suicidal thoughts.

Service providers should let people know that these symptoms are possible, and that they may appear hours or days after they last used stimulants.[6] Service providers should reassure people that withdrawal symptoms will become less intense over time and help people to develop a safety plan for how they will take care of themselves if they experience thoughts of self-harm or suicide.[13] A safety plan includes:[14]

- Making a list of warning signs to recognize when their mental health is getting worse (e.g. spending more time alone, feeling more irritable, depressed, or hopeless),
- Identifying personal coping strategies (e.g. making art, listening to music, spending time in nature, doing a hobby),
- Listing sources of support in their life (e.g. family, friends, Elders, mental health professionals, health and social service providers, connection to culture, social settings, community groups, etc.),
- Identifying how they will use coping strategies and when they will use their supports,
- Making plans to remove items that could be potentially dangerous if they have thoughts of self-harm or suicide (e.g. removing weapons and medications), and
- Making plans to get emergency healthcare if they feel at risk of harming themselves.

Supportive care for stimulant withdrawal includes ensuring proper hydration and nutrition, along with promoting healthy sleep habits, such as creating supportive sleep environments and practicing behaviours that promote wellness.[6] Service providers should invite people to identify any goals they

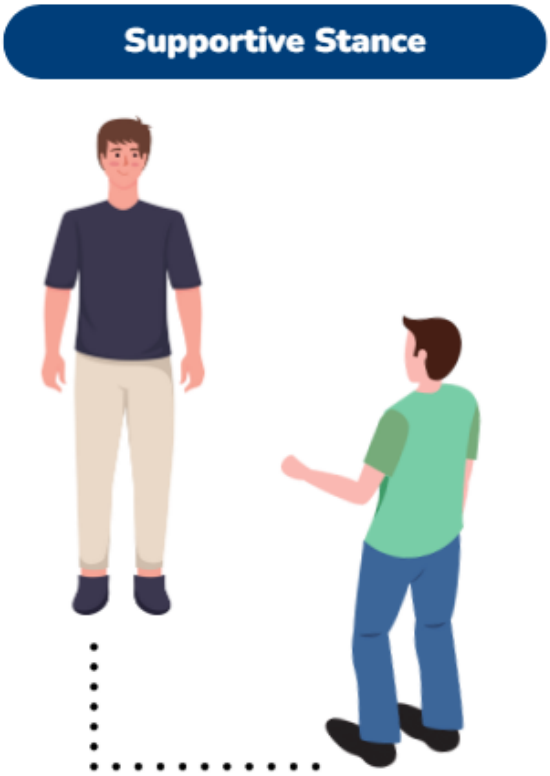
may have, such as those related to housing, healthcare, treatment and recovery, and connection to cultural resources. Service providers should also offer connections to social service resources, as well as harm reduction information and safer use strategies.

Mental Health Crisis or Stimulant Toxicity?

Sometimes it is difficult to tell the difference between a mental health crisis and stimulant toxicity. If a person appears to be experiencing primarily mental health symptoms (e.g., having difficulties thinking, regulating emotions, or using judgement) without the physical symptoms of toxicity (listed above), this could be a mental health crisis. Stimulant toxicity can include mental health symptoms, such as extreme anxiety, panic, agitation, or psychosis. However, stimulant toxicity frequently includes physical symptoms as well.

If a person is experiencing mental health symptoms (such as seeing or hearing things, feeling very suspicious, having an exaggerated sense of power, etc.), service providers may:

- **Establish trust**: Explain what you are doing, listen to the person, validate the person's concerns, move slowly and deliberately, give the person enough physical space (e.g. do not crowd them), and avoid whispering to other people.
- **Promote safety for yourself and the person**: Position your body off to the side of the person with clear access to an exit, keep doors open, keep call bells within reach, and tell your coworkers where you will be. [16]
- **Use the supportive stance**: Provide the person with at least one leg length of personal space (about 1-3 feet), position your body off to the side of the person, and stand at an angle to the person forming an L shape with your body.
- **Redirect**: If the person is experiencing hallucinations, gently redirect the person to what you can see and hear ("I don't see the person you are talking about. I just see you and me in this room"). Avoid arguing with the person.
- **De-escalate:** If the person is very anxious, offer to do deep breathing exercises together.
- **Support basic needs:** Support the person in getting sleep and accessing food and water.



Stand slightly off to the side from the person, at least a leg length away. Position your body in an L shape with one foot forward.

- **Seek help**: Service providers should call 911 for emergency health services if their mental health symptoms are creating an immediate danger to the person or others.
- **Connect:** If the person has mental health symptoms but does not need immediate emergency help, support them in accessing mental health services.

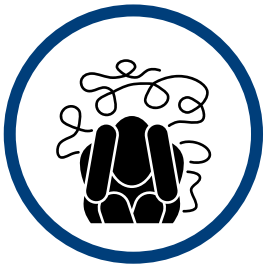
Mental Health Crisis or Stimulant Toxicity?

Stimulants can contribute to mental health issues, including stimulant-induced psychosis, particularly when stimulants are used over a long period of time.

Sometimes it is difficult to tell the difference between a mental health crisis and stimulant toxicity.

Stimulant toxicity can include mental health symptoms, such as extreme anxiety, panic, agitation, or psychosis. However, stimulant toxicity frequently includes physical symptoms as well.

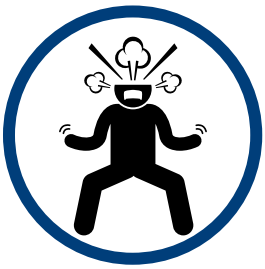
Mental Symptoms



Anxiety or paranoia

Difficulty thinking or using judgement

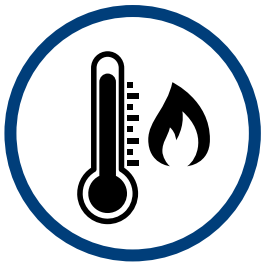
Hallucinations



Difficulty regulating emotions

Physical Symptoms

Unconscious or in-and-out



Skin feels very hot

Rigid, jerking limbs or seizures

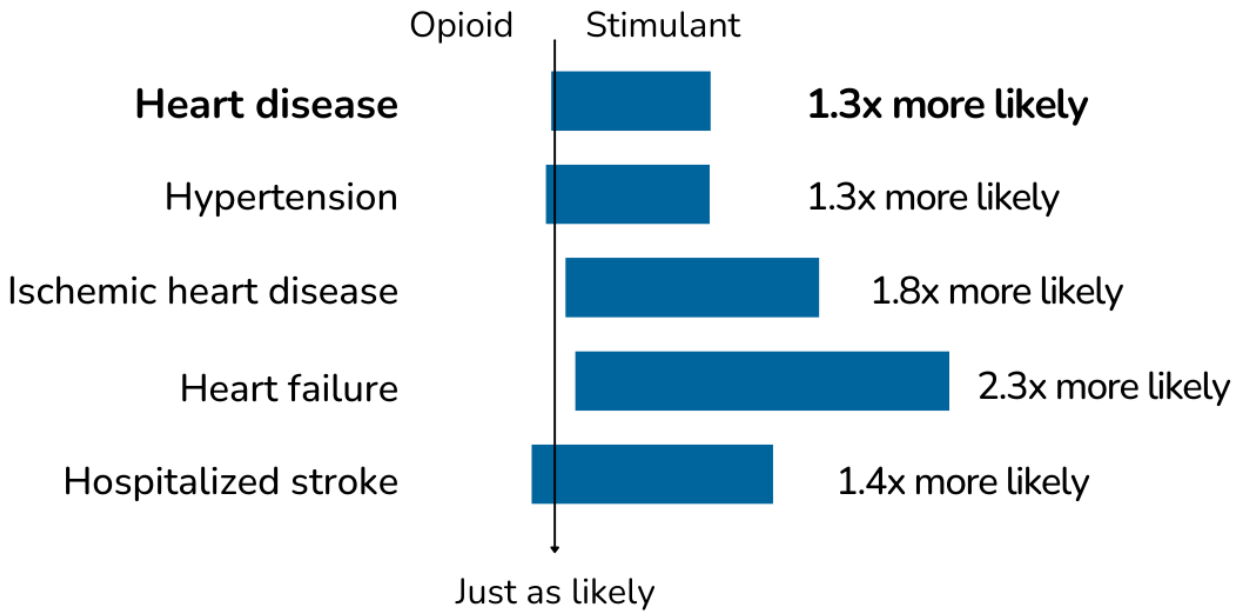
Chest pain or severe headache

If a person appears to be experiencing primarily mental health symptoms without the physical symptoms of toxicity, this could be a mental health crisis.

Chronic Disease and Stimulant Toxicity

Many people who use stimulants also have chronic diseases or health conditions such as heart disease and diabetes. Research has found a possible link between heart disease, stimulant use, and the risk of death from stimulant toxicity. Figure 1 shows how much more likely people with different heart diseases were to die from stimulant toxicity than an opioid poisoning. While further research is needed, this suggests that chronic disease could increase the risk of stimulant toxicity or increase the severity of symptoms.[19]

Figure 1. Associations showing increased risk of dying of stimulant toxicity for people with heart diseases



Service providers can start a supportive conversation with people who have chronic disease and use stimulants. Together, explore how the person understands their illness and identify ways substance use can impact their health. Share non-judgemental information on how hypertension (high blood pressure) or heart disease can increase the risks for stimulant toxicity. Share information on how to lower these risks with safer substance use practices, using less or stopping use, how to recognize stimulant toxicity, and when to seek help. Offer connections to other health and social services.

Extreme Heat and Stimulant Use

Climate change means it is likely there will be ongoing or increasing extreme heat events in BC. People who use stimulants are at greater risk of experiencing severe heat-related health complications, including heat exhaustion and heat stroke. Increasing temperatures have been associated with increased risk of death from stimulant toxicity, particularly for people who use cocaine (alone or in combination with other substances).[20,21] This heightened risk happens because stimulants:[20-22]

- Increase heat produced by the body,
- Slow down the body's ability to get rid of too much heat, and
- Change the body's ability to maintain a regular core temperature (around 37° C)

The increase in body temperature is made worse by hot environments.[21] The use of certain stimulants (such as cocaine, crack, and amphetamine) in hot conditions can increase the risk of experiencing heat-related harms and developing hyperthermia.

Heat-Related Harms

Heat exhaustion happens from prolonged heat exposure, where the body has difficulty effectively cooling itself. If heat exhaustion is not treated, it may rapidly progress to heat stroke.[26] People who use substances are at increased risk for experiencing heat exhaustion and heat stroke because of the effects of stimulants on the body.

Heat stroke occurs when the body reaches a critical temperature (higher than 40°C) due to overheating.[26] **Heat stroke is a medical emergency that requires immediate intervention.**

Heat Exhaustion

Heat exhaustion is characterized by:[27-29]

- Cool, moist skin,
- Heavy sweating,
- Dizziness,
- Fatigue,
- A fast pulse (over 100 beats per minute when resting),
- Muscle cramps, particularly in the arms, legs, and stomach,
- Nausea, and
- Headache.

Signs and symptoms of heat exhaustion require quick intervention to prevent it from progressing to heat stroke. If heat exhaustion is suspected, service providers should:[26-30]

- Help the person move away from the heat (e.g., move into the shade).
- If indoors, open windows for fresh air.
- Encourage the person to drink water.
- Encourage the person to remove any tight or extra clothing layers.
- Ask permission to cool the person down by placing a wet cloth or ice pack (wrapped in a cloth) under their armpits, groin, and neck or by spraying gently them with water (e.g., from a tap or hose).

Heat Stroke

Signs and symptoms of heat stroke may appear suddenly, and include:[29-31]

- Altered mental state and behaviour (e.g., confusion, agitation, delirium, slurred speech, hallucinations),
- Muscle cramps,
- Nausea and vomiting,
- Headache that can often be throbbing,
- Flushed (red) skin that may be hot and dry or sweaty (note that redness in darker skin tones may be more subtle),
- Rapid, shallow breathing,
- Increased heart rate, or
- Seizure.

Call 911 if a person displays signs of heat stroke. Heat stroke is a medical emergency that requires immediate response. While waiting for emergency services, service providers should try to cool the person down.

There tends to be higher rates of stimulant-associated deaths during hot weather.[23-26] It is important for service providers to discuss the risks and ways to reduce them during hot weather, including:

- Avoiding using outside in direct sun or indoors in poorly ventilated or hot spaces.
- Staying hydrated.
- How older age and other chronic diseases can increase risks.
- Dressing for hot weather (e.g., wearing light-coloured, loose-fitting clothing).

- Going to misting stations, putting cool cloths on their body, putting clothes in the freezer before wearing them, or getting into a tub filled with cool water.
- The importance of checking in on neighbours and friends who use stimulants or who are at increased risk.
- Avoiding doing a lot of physical activity in the sun or heat.
- Avoiding drinks that can dehydrate you, such as caffeine and alcohol.

Service organizations can support people who use stimulants to stay safer during hot weather by:

- Giving out water in places easily accessible to people who use substances and displaying signs for it.
- Giving out cold water while doing outreach.
- Providing information about where to find cooling centres nearby.
- Providing outreach to people who might be at increased risk for stimulant toxicity

Extreme Heat and Stimulant Use Resources

For more information on extreme heat and stimulant use see:

- Prepare for Extreme Heat Events- Service Providers
- Prepare for Extreme Heat- A Guide for People Who Use Substances
- Guide for Service Providers During Extreme Heat
- Prepare an Extreme Heat Kit
- Stay Safe During Extreme Heat Events
- Using Substances During Extreme Heat

Glossary

Amphetamine refers to a type of stimulant. Regulated amphetamines are often prescribed to treat attention deficit hyperactivity disorder and narcolepsy. Crystal methamphetamine is a common unregulated amphetamine.

Antidote refers to a medicine that reverses the effects of a substance or poison.

Chronic disease refers to a long-lasting health condition that requires ongoing medical attention and may impair daily activities.

Cocaine refers to a type of stimulant made from the coca plant.

Crack (also called crack cocaine) refers to a type of unregulated stimulant that is made of cocaine and baking soda (and may include other fillers).

Euphoria refers to a state of intense happiness or excitement**.**

Hyperthermia refers to a condition where a person's body temperature is elevated above the usual core temperature of 37° C.

Hallucinations refers to a mental state where the person perceives things that are not there. Hallucinations can involve different senses, such as seeing things or hearing things that are not there.

Paranoia refers to a mental state where a person feels unwarranted suspicion or mistrust of others.

Pharmacokinetics refers to how the body processes a drug over time. It includes how the drug is absorbed, distributed, metabolized, and excreted by the body.

Psychosis refers to severe symptoms that affect a person's thoughts and emotions, where they have trouble identifying what is real and what is not real. During psychosis, the person may see or hear things that are not there.

Seizure refers to abnormal brain activity that temporarily affects consciousness, muscle control and movements, behaviours, and awareness.

Stimulant refers to a type of substance that speeds up the brain and body. Common unregulated stimulants include cocaine, crack, and crystal methamphetamine.

Stimulant toxicity means the body becomes overwhelmed by a toxic amount of stimulants causing negative physical effects. Also called overamping or stimulant overdose.

Trauma- and violence- informed care refers to services and care delivered in a way that acknowledges the effects of interpersonal and systems-level trauma and violence on a person's behaviour and health. Trauma and violence informed care aims to promote safety and trust through connection, collaboration and using strengths-based approaches.

Acknowledgements

BC Centre for Disease Control:

Harm Reduction & Substance Use Services

Sammy Iammarino
Emily Ogborne-Hill
Paul Bangah
Keira St. George
Megan Bobetsis
Brittany Graham
Christie Wall
Heather Palis

Knowledge Translation

Carly Welham
Julienne Jagdeo

PEEP

Coalition of Peers Dismantling the Drug War (CPDDW)

Kali-olt Sedgemore

First Nations Health Authority:

Cowichan Tribes First Nation

Elder Doreen Peter

Office of the Chief Medical Officer

Dr. Nolan Hop Wo
Kathy Riyazi
Corrina Chase
Dr. Jae Ford
Jessica Xavier

Public Health Response

Keshia Cleaver
Natalia Dos Santos
Terri Gillis
Marina Bochar
Natasha Green

Northern Regional Team

Jolene Pagurut

Island Regional Team

Jenny Peters

Indigenous Harm Reduction Research

Ashley Simpson

With review from:
Dr. Alexis Crabtree (BCCDC Harm Reduction & Substance Use Services)
Dr. Nel Wieman (FNHA Office of the Chief Medical Office)
Harm Reduction Strategies and Services Committee
Office of the Provincial Health Officer

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