Substances in the Unregulated Drug Supply

Harm Reduction Manual

Updated: July 13, 2026

First Nations Health Authority
Health through wellness

BC Centre for Disease Control
Provincial Health Services Authority

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How to cite this document

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Introduction

This section provides information on common substances in the unregulated drug supply and how these substances work in the body. This section also explains how these substances can affect health, including poisoning, withdrawal, and substance use disorder.

This section also includes links to infographics that explain new, or novel, substances in the unregulated drug supply.

Background

In Canada, the Controlled Drugs and Substances Act (CDSA) regulates the production, possession, distribution, and use of controlled substances.[1]

The unregulated drug supply refers to the many unregulated substances that are made, sold, and used outside of the legal and regulatory system. Unregulated substances are highly variable and unpredictable because no one checks their quality and safety. They often contain harmful, toxic, and potent substances that greatly increase the risks of drug poisoning and other health harms.[2,3]

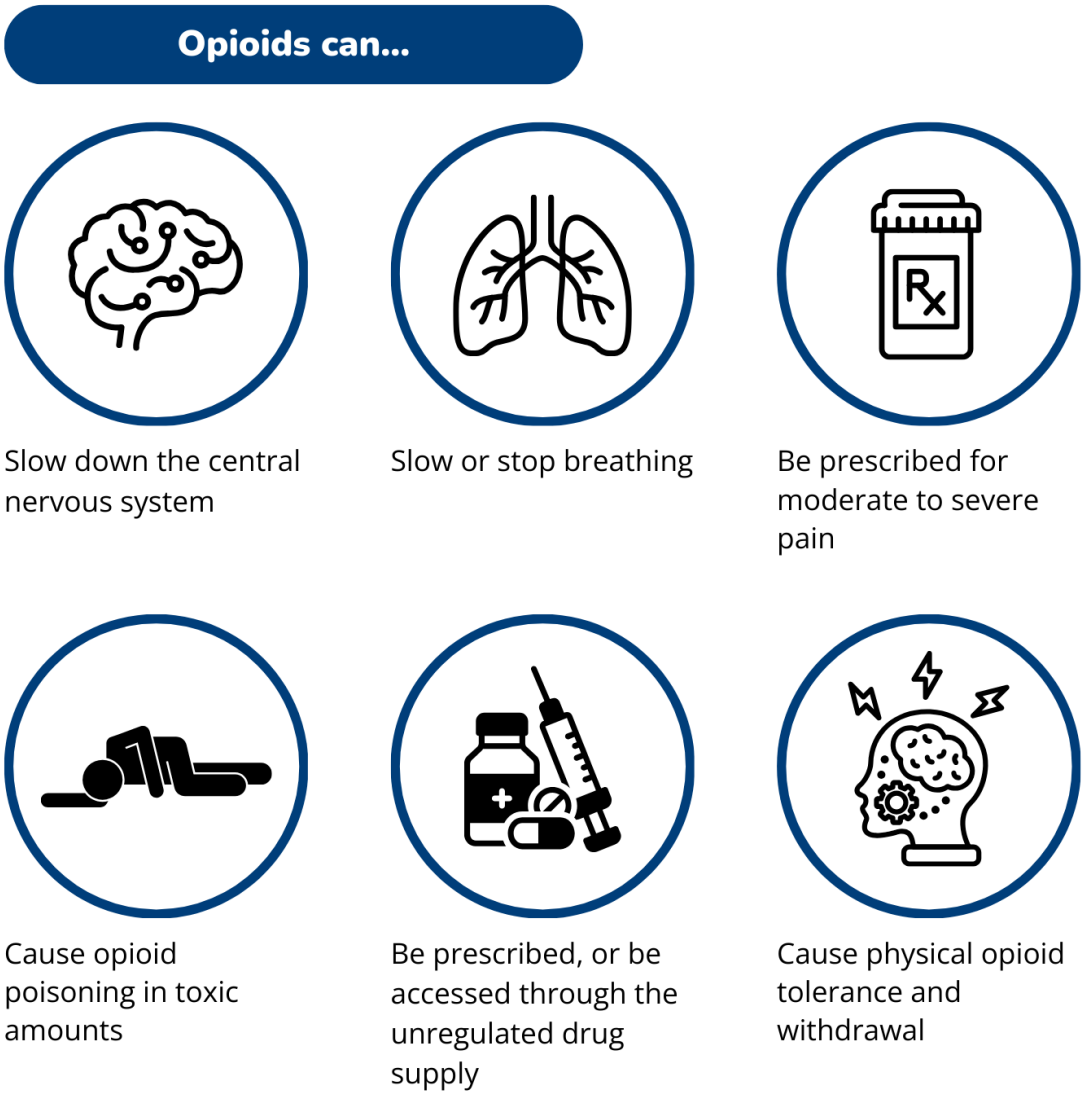
Resources

- Visit the BC Centre on Substance Use (BCCSU) Drug Checking in BC Dashboard for information on substances in the unregulated drug supply and drug checking results in BC.
- Find drug checking locations on the BCCSU Find Drug Checking website.
- Sign up for Toxic Drug and Health Alerts in your region by texting JOIN to 253787 (ALERTS).

Opioids

Opioids are a type of psychoactive substance that slow down the brain and body through the central nervous system.[4] Because of this, opioids are often called "down". Opioids work by attaching to receptors throughout the body and slowing things down, like thinking, movement, and breathing.

Opioids can be prescribed as medication to manage moderate to severe pain or to ease the symptoms of opioid withdrawal. Common prescribed opioids include morphine, hydromorphone, and methadone. People may also use opioids to create feelings of euphoria or relaxation, to cope with emotional or physical pain, or to cause drowsiness.[5]



Opioids in the Unregulated Drug Supply

Some opioids are usually or only made in regulated facilities. Some types of opioids are only produced in the unregulated drug supply. Others (like fentanyl) are available from the unregulated and regulated drug supply. Regulated fentanyl is prescribed by doctors in clinics and hospitals. Unregulated fentanyl is made illegally without quality and safety controls. The high rates of drug poisoning deaths are largely because of unregulated fentanyl in the drug supply.

Drug checking shows that unregulated opioids can often be a mix of unknown or harmful substances.[6] For example, some opioid samples contain sedatives that make people drowsy and less alert.[6] Other opioid samples contain different types of fentanyl that are chemically similar but can be much more potent, like carfentanil.[7]

Health Impacts of Opioid Use

Using opioids can have several serious and unexpected side effects and adverse health effects, including opioid poisoning. Using opioids over a long period of time can lead to a person developing a tolerance to opioids, meaning the body needs stronger doses more often to feel the same effects. Using higher doses more often can lead people to develop physical opioid dependence. This means that when a person with opioid dependence does not get a regular amount of opioids, their body experiences painful symptoms of opioid withdrawal.

Some people who use opioids develop opioid use disorder. [4] This is when a person's opioid use becomes a problem and interferes with daily life. Some people use more than one substance (such as opioids, stimulants, and alcohol) in ways that cause problems for the person. This is called a polysubstance use disorder. Like other substance use disorders, this is a medical condition that can be treated with medications and other therapies.

Opioid Poisoning

An opioid poisoning happens when a toxic amount of opioids overwhelms the body's ability to function, causing breathing to slow, stop, or become abnormal. Brain injury and death can occur when the brain and body do not get enough oxygen.

Opioid poisoning can look different from person to person and from one situation to the next. Most people will present with the 3 key signs of opioid poisoning: slow, stopped, or abnormal breathing (like gurgling, snoring, or choking), decreased level of consciousness, and pinpoint pupils. Other signs include blue or grey/ashen lips and nails, cold and clammy skin, and a stiff neck, chest, or body.

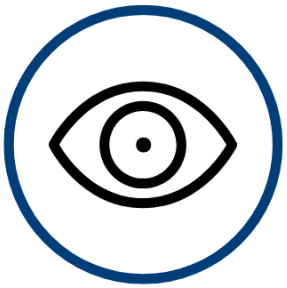
Key Signs of Opioid Poisoning

1. Having Trouble Breathing

- Taking less than 12 breaths per minute, or
- Taking slow, irregular, or shallow breaths, or
- Making unusual sounds such as choking, gurgling, snoring, wheezing, or gasping, or
- Not breathing at all.

2. Not responding

- Being very drowsy, sedated, low energy, or confused, or
- Not responding to voices or painful touch



3. Very small (pinpoint) or constricted pupils

Opioid poisoning is a medical emergency that needs immediate response with rescue breaths and naloxone. An unmanaged opioid poisoning can cause serious injury and death.

See Section 10 - Opioid Poisoning Response for more information on how to recognize and respond to opioid poisoning.

Opioid Withdrawal

When someone with a physical opioid dependence cuts back or stops using opioids, they can experience opioid withdrawal. Opioid withdrawal involves intense and painful physical symptoms, including nausea, vomiting, diarrhea, stomach cramps, sweating, anxiety, and restlessness. These symptoms can start within hours after a person last used opioids, depending on the person and their substance use history and patterns.

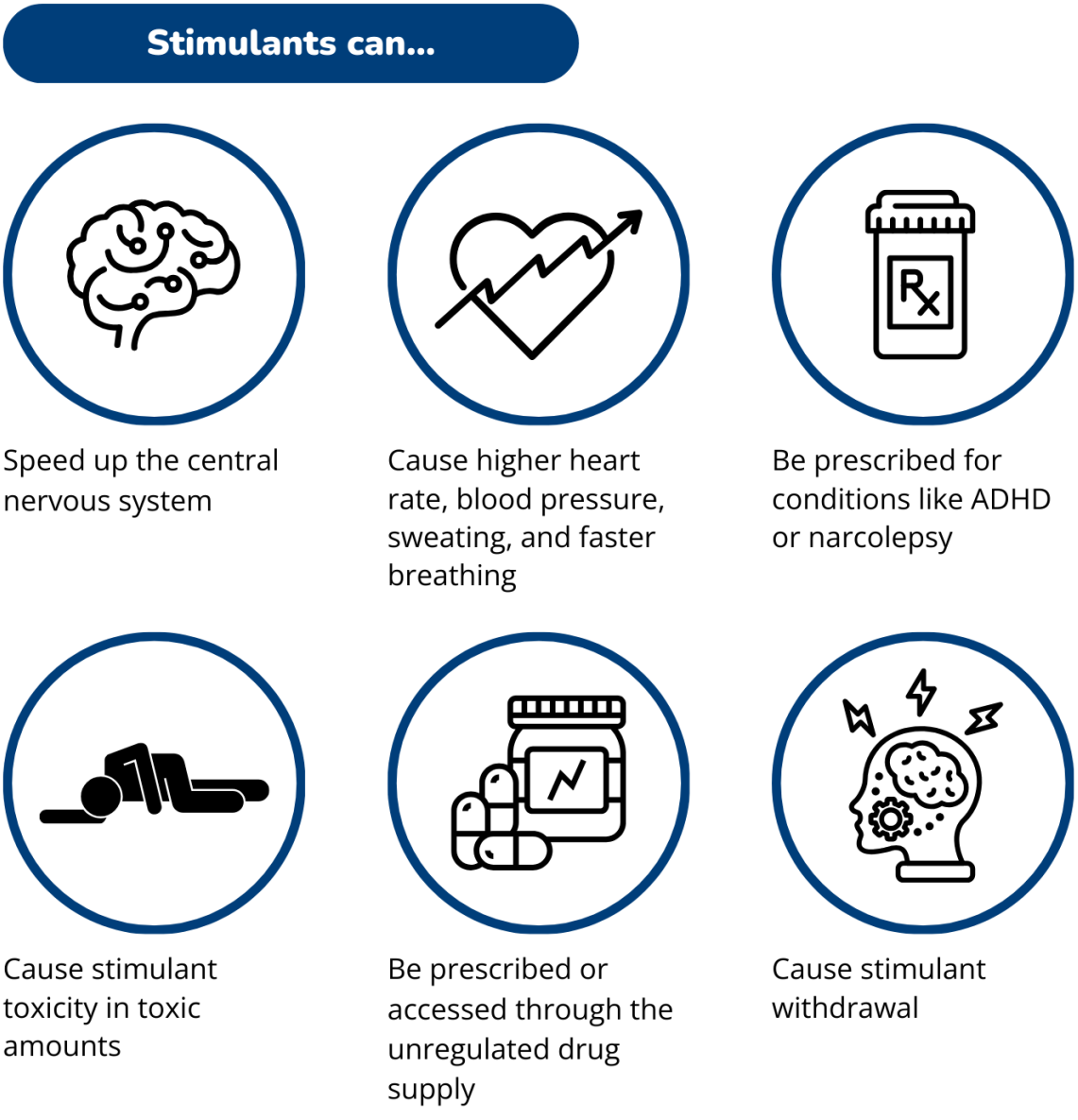
Opioid Use Disorder

Opioid use disorder (OUD) happens when a person develops a problematic pattern of opioid use that significantly interferes with functioning. Not everyone who uses opioids will develop OUD. Research demonstrates that people with opioid use disorder benefit when offered screening, assessment, and treatment, including withdrawal management, social supports, and treatment with opioid agonist treatment (OAT).[23]

Stimulants

Stimulants are a type of psychoactive substance that increase the activity of the central nervous system. They increase blood pressure, heart rate, energy, and focus. Stimulants work by increasing the activity of some chemicals in the brain, called neurotransmitters. This increases many physical and mental functions, including feeling more alert. Some people say this feels like the body is speeding up its "fight or flight" response.[10]

Stimulants can be prescribed as medication to treat several conditions, including attention deficit hyperactivity disorder (ADHD) and narcolepsy. Common prescribed stimulants include methylphenidate (e.g. Ritalin) and amphetamines (e.g. Adderall).



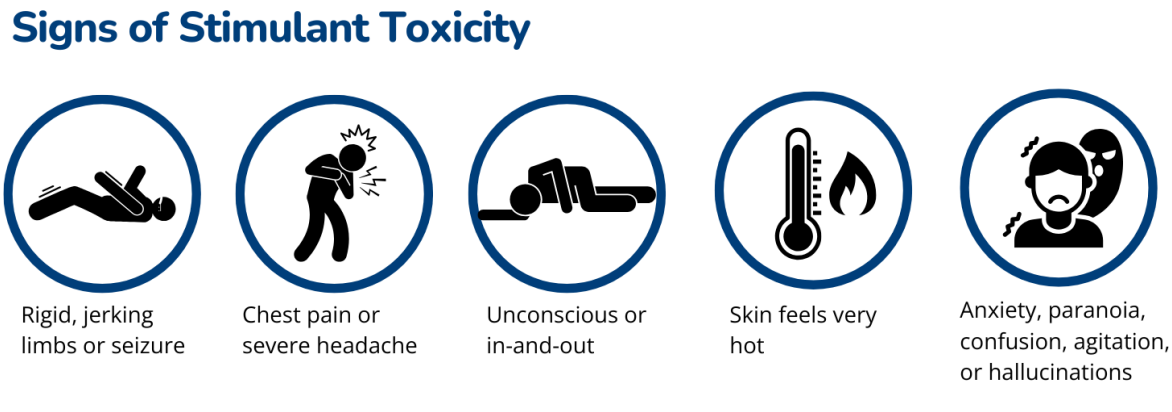
Stimulants in the Unregulated Drug Supply

Some stimulants come from the unregulated drug supply. Common unregulated stimulants include cocaine, crack cocaine, and crystal methamphetamine. People use unregulated stimulants for many reasons, such as to feel euphoria or more confident, to curb hunger, or to stay alert. This is especially common for people who are unhoused who need to protect themselves and their belongings.[11,12]

Drug checking results show that unregulated stimulants often contain unknown or dangerous substances. In some cases, substances that people think are stimulants contain other substances, like opioids or benzodiazepines.[6] When a person takes a depressant and a stimulant at the same time, their effects can clash, like trying to speed up and slow down the heart rate at the same time. These mixed signals can be dangerous for the body. One substance can also mask or cover the effects of the other, leading people to use more and increase the risk of a drug poisoning.[13] If opioids are unknowingly mixed with stimulants, someone who does not typically use opioids and has no tolerance for them can experience an opioid poisoning.

Health Impacts from Stimulant Use

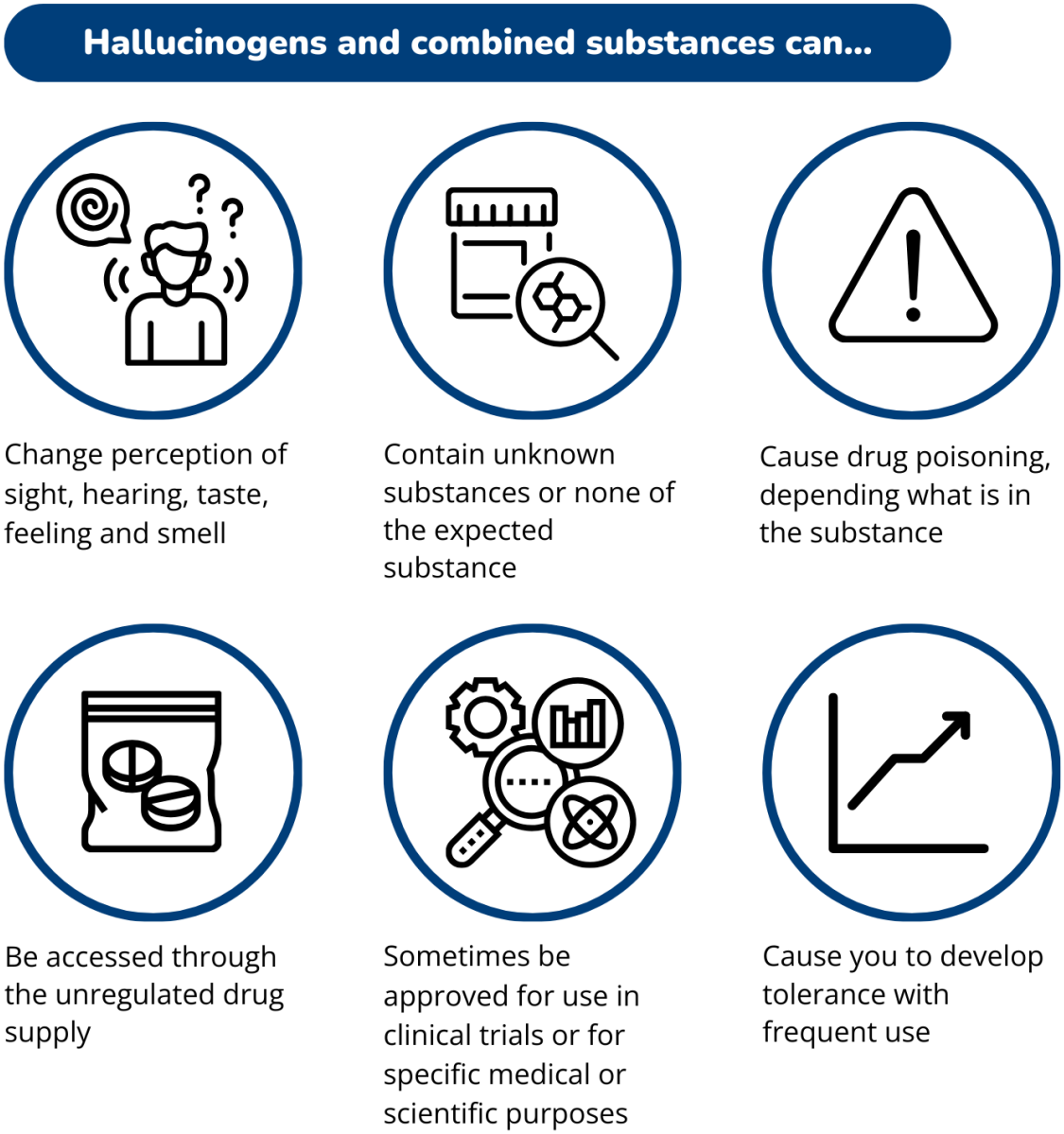
Stimulants can have many effects on the body, which depend on the person and factors like their body weight, the type of stimulant they use, how much they use, their tolerance, if they used other substances, and if they had an empty stomach.[9] These include serious and unexpected effects like experiencing stimulant toxicity (also known as overamping), stimulant withdrawal, stimulant-induced psychosis, stimulant-related seizure and/or developing a stimulant use disorder.[14] Stimulant toxicity happens when a toxic amount of stimulants overwhelms the body's functioning. See Section 11 - Stimulant Toxicity for more information on how to respond.



Like an opioid use disorder, stimulant use disorder develops when stimulant use becomes a problem and interferes with daily living.

Hallucinogens & Combined Substances

Hallucinogens are psychedelic substances that can change how people experience the world. They can affect sight, hearing, taste, smell, thinking, and feeling. They can affect mood and may cause a person to hallucinate (see or hear things that are not there) especially when taken in high doses. People use hallucinogens in different ways. Some people take a full dose at one time, while others may take small amounts regularly (called microdosing).[22]



Common hallucinogens include:

- Lysergic acid diethylamide (LSD, acid),
- Psilocybin (magic mushrooms),
- Mescaline,
- Dimethyltryptamine (DMT),
- Ayahuasca,
- Phencyclidine (PCP),
- 3,4-methylenedioxymethamphetamine (MDMA, ecstasy), and
- Salvia.

Combined Substances

Some substances, like MDMA, can have the effects of both a stimulant and a hallucinogen. These substances are referred to as a combined substance.[15]

In Canada, many hallucinogens are controlled substances.[1] This means they are not legal. In some situations, hallucinogens can be used in clinical trials and for specific medical or research purposes.[16,17]

Health Effects of Hallucinogen Use

It is difficult to understand all the risks of using hallucinogens because there are many types and different ways people use them.[20] Hallucinogen use can cause several serious and unexpected effects, including experiencing toxicity (depending on the type and amount of substance taken), developing a hallucinogen use disorder, and developing mental health issues, including self harm, anxiety, agitation, confusion, and psychosis.[18,19,20] Since hallucinogens are part of the unregulated drug supply, they can contain harmful or unknown substances. For example, substances sold as MDMA may contain methamphetamine.

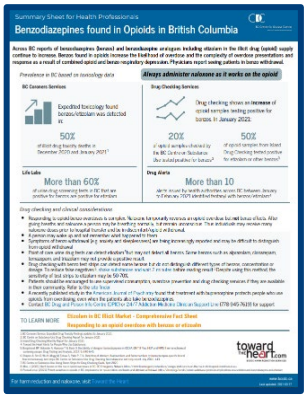
Using hallucinogens often can lead to developing a tolerance. Like other substances, taking a break from using hallucinogens can lower a person's tolerance. Stopping use of hallucinogens does not typically cause physical withdrawal symptoms. However, people can develop psychological dependence on hallucinogens, where they experience cravings and difficulty functioning without the substance.[15]

Novel Substances

Novel substances are new or unknown chemicals or drugs found in the unregulated drug supply. They may not have specific laws that control their use. They may be added to unregulated substances to help organized crime groups make more money by enhancing the effects of the substance, reducing withdrawal symptoms, or making the substance cheaper.[21]

The next pages include links to infographics and information sheets on novel substances found in BC's unregulated drug supply. Click on the title or photo to access the resource.

Etizolam


Summary Sheet for Health Professionals

Benzodiazepines found in Opioids in British Columbia

Across BC reports of benzodiazepines (benzos) and benzodiazepine analogues including etizolam in the illicit drug (opioid) supply continue to increase. Benzos found in opioids increase the likelihood of overdose and the complexity of overdose presentations and response as a result of combined opioid and benzo respiratory depression. Physicians report seeking patients in benzo withdrawal.

Prevalence in BC based on toxicology data

Always administer naloxone as it works on the opioid

BC Coroners Services

Expedited toxicology found benzos/etizolam was detected in

50%

of illicit drug toxicity deaths in December 2020 and January 2021[1]

Drug Checking Services

Drug checking shows an increase of opioid samples testing positive for benzos. In January 2022:

20%

of opioid samples checked by the BC Centre on Substance Use tested positive for benzos[2]

50%

of opioid samples from Island Drug Checking tested positive for etizolam or other benzos[3]

Life Labs

More than 60%

of urine drug screening tests in BC that are positive for benzos are positive for etizolam

Drug Alerts

More than 10

Alerts issued by health authorities across BC between January 1st & May 31st, 2021 identified fentanyl with benzos/etizolam[4]

Drug checking and clinical considerations:

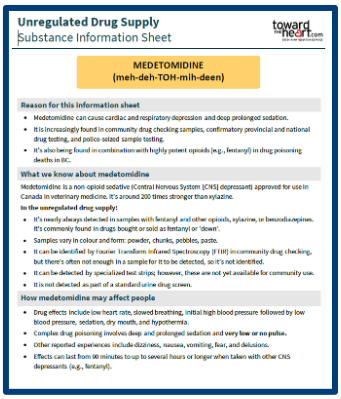
- Responding to opioid/benzo overdoses is not safe. The same but naturally reversible opioid overdose but not benzo effects. After giving naloxone a person may be breathing normally, but remains unresponsive. The individual may remain many naloxone doses prior to hospital transfer and be re-intoxicated/requiring re-dosing.
- Benzos can cause agitation, aggression, and violence in the person who has used.
- Symptoms of benzo withdrawal (e.g. anxiety, act disobedience) can be long (some ugly, wounded and may be difficult to distinguish from opioid withdrawal.
- Point of care urine drug tests are limited in what they can detect (false) but may not detect all benzos. Some benzos such as alprazolam, clonazepam, lorazepam, and bromazepam may not provide a positive result.
- Point of care fentanyl test strips (FTS) are limited in that they do not distinguish different types of fentanyl, concentration or dosage. To reduce false negatives[5], make a fentanyl test strip? It's safer before making a result. Execute using this method the sensitivity of test strips to etizolam may be 50-70%.
- Patients should be encouraged to use supervised consumption, overdose prevention and drug checking services if they are available in their community. Refer to the site finder.
- A recently published study in the American Journal of Psychiatry found that treatment with buprenorphine protects people who use opioids from overdosing, even when the patients also take benzodiazepines.
- Contact BC Drug and Poison Info Centre (DPIC) or 24/7 Addiction Medicine Clinician Support Line (778) 945-7610 for support.

TO LEARN MORE: Etizolam in BC Illicit Market - Comprehensive Fact Sheet; Responding to an opioid overdose with benzos or etizolam

toward the heart.com

For harm reduction and naloxone, visit: towardtheheart.com

Medetomidine


Unregulated Drug Supply

Substance Information Sheet

toward the heart.com

MEDETOMIDINE
(meh-deh-TOH-mih-deen)

Reason for this information sheet

- Medetomidine can cause cardiac and respiratory depression and deep prolonged sedation.
- It is increasingly found in community drug checking samples, confirmatory provincial and national drug testing, and police-seized sample testing.
- It's also being found in combination with highly potent opioids (e.g., fentanyl) in drug poisoning deaths in BC.

What we know about medetomidine

Medetomidine is a non-opioid sedative (Central Nervous System [CNS] depressant) approved for use in Canada in veterinary medicine. It's around 200 times stronger than xylazine.

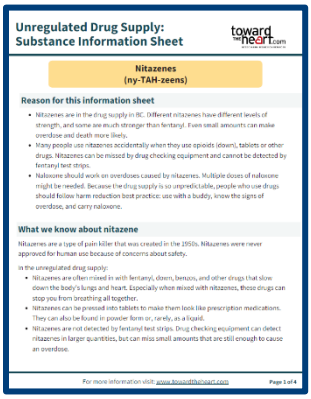
In the unregulated drug supply:

- It's nearly always detected in samples with fentanyl and other opioids, xylazine, or benzodiazepines. It's commonly found in drugs bought or sold as fentanyl or 'down'.
- Samples vary in colour and form: powder, chunks, pebbles, paste.
- It can be identified by Fourier Transform Infrared Spectroscopy (FTIR) in community drug checking, but there's often not enough in a sample for it to be detected, so it's not identified.
- It can be detected by specialized test strips; however, these are not yet available for community use.
- It is not detected as part of a standard urine drug screen.

How medetomidine may affect people

- Drug effects include low heart rate, slowed breathing, initial high blood pressure followed by low blood pressure, sedation, dry mouth, and hypothermia.
- Complex drug poisoning involves deep and prolonged sedation and very low or no pulse.
- Other reported experiences include dizziness, nausea, vomiting, fear, and delusions.
- Effects can last from 90 minutes to up to several hours or longer when taken with other CNS depressants (e.g., fentanyl).

Nitazenes


Unregulated Drug Supply:
Substance Information Sheet

toward the heart.com

Nitazenes
(ny-TAH-zeens)

Reason for this information sheet

- Nitazenes are in the drug supply in BC. Different nitazenes have different levels of strength, and some are much stronger than fentanyl. Even small amounts can make overdose and death more likely.
- Many people use nitazenes accidentally when they use opioids (down), tablets or other drugs. Nitazenes can be missed by drug checking equipment and cannot be detected by fentanyl test strips.
- Naloxone should work on overdoses caused by nitazenes. Multiple doses of naloxone might be needed. Because the drug supply is so unpredictable, people who use drugs should follow harm reduction best practice: use with a buddy, know the signs of overdose, and carry naloxone.

What we know about nitazene

Nitazenes are a type of pain killer that was created in the 1950s. Nitazenes were never approved for human use because of concerns about safety.

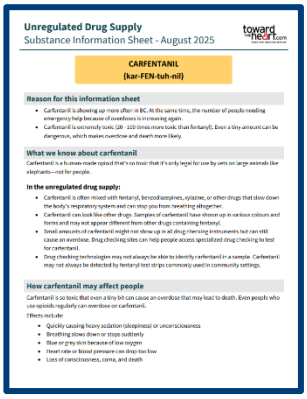
In the unregulated drug supply:

- Nitazenes are often mixed in with fentanyl, dizem, benzos, and other drugs that slow down the body's lungs and heart. Especially when mixed with nitazenes, these drugs can stop you from breathing all together.
- Nitazenes can be pressed into tablets to make them look like prescription medications. They can also be found in powder form or, rarely, as a liquid.
- Nitazenes are not detected by fentanyl test strips. Drug checking equipment can detect nitazenes in larger quantities, but can miss small amounts that are still enough to cause an overdose.

For more information visit www.towardtheheart.com

Page 1 of 4

Carfentanil Information Sheet


Unregulated Drug Supply

Substance Information Sheet - August 2025

toward the heart.com

CARFENTANIL
(kar-FEN-tuh-nil)

Reason for this information sheet

- Carfentanil is showing up more often in BC. At the same time, the number of people needing emergency help because of overdoses is increasing again.
- Carfentanil is extremely toxic (10 - 100 times more toxic than fentanyl). Even a tiny amount can be dangerous, which makes overdose and death more likely.

What we know about carfentanil

Carfentanil is a human-made opioid that's so toxic that it's only legal for use by vets on large animals like elephants—not for people.

In the unregulated drug supply:

- Carfentanil is often mixed with fentanyl, benzodiazepines, xylazine, or other drugs that slow down the body's respiratory system and can stop you from breathing altogether.
- Carfentanil can look like other drugs. Samples of carfentanil have shown up in various colours and forms and may not appear different from other drugs containing fentanyl.
- Small amounts of carfentanil might not show up in all drug checking instruments but can still cause an overdose. Drug checking sites can help people access specialized drug checking to test for carfentanil.
- Drug checking technologies may not always be able to identify carfentanil in a sample. Carfentanil may not always be detected by fentanyl test strips commonly used in community settings.

How carfentanil may affect people

Carfentanil is so toxic that even a tiny bit can cause an overdose that may lead to death. Even people who use opioids regularly can overdose on carfentanil.

Effects include:

- Quickly causing heavy sedation (sleepiness) or unconsciousness
- Breathing slows down or stops suddenly
- Blue or grey skin because of low oxygen
- Heart rate or blood pressure can drop too low
- Loss of consciousness, coma, and death

Levamisole Information Sheet for the Public

Information Sheet for the Public

Levamisole (Pig de-wormer)

toward the heart .com

What is levamisole?

Crack cocaine can be cut with a **levamisole** a substance used as a pig de-wormer. This can be toxic for humans and seriously affect the immune system, causing rare, fungi, and other infections. Levamisole is the same colour as crack cocaine, has no taste, and has a lower melting point (it looks, and if then cracks) worse. This makes it hard to tell if it is in your drugs.

Now also in cocaine in Canada!

BC's drug checking services found: * 50 of cocaine/crack samples tested in 2019 contained levamisole. A BC harm reduction client survey found 24.4% of same samples in 2018, and 10.7% in 2019 tested positive for cocaine and levamisole.[1]

Contaminated crack and cocaine can cause severe infections and skin colour changes in some people

How can I tell if I may have used crack/cocaine that has been cut with levamisole?

Most people who use crack/cocaine cut with levamisole do not experience symptoms or infections. It is unclear how much levamisole can cause symptoms, but is more likely after long term use.

Symptoms are more commonly seen when people smoke crack/cocaine cut with levamisole, but there have also been reports of severe reactions after snorting or injecting.

1. You notice the skin on your ears, face, arms, legs or anywhere else, has purple or black patches, like a bad bruise.
2. It feels like you have an infection.

Some people may notice:
- A rash (e.g., cheeks, arches, swelling fingers)
- A fever
- A cough that is getting worse
- Difficulties breathing

If you recently used crack/cocaine and notice any signs and symptoms, tell a trusted healthcare provider right away or go to an emergency department. These infections can get worse very quickly.

It is important to let healthcare providers know you have used crack/cocaine that may have been cut with levamisole, so that unnecessary, invasive testing can be avoided.

Will the infection(s) go away?

Yes, but some people will need to go to hospital to treat an infection. Once you stop using the crack/cocaine cut with levamisole, symptoms usually go away.

Can I still use crack/cocaine again or will I get another infection?

If people experience toxic reactions, it can happen again if cocaine/crack cut with levamisole is used again.

Test a different supply with drug checking services. Talk with your healthcare provider about long-term to leave care, such as prescription alternatives.

For drug checking services in BC:
- For current information and locations, see towardtheheart.com/for-you.
- For testing by mail or in person: Getyourchipstested.com

BC Centre for Disease Control

Levamisole Information Sheet for Healthcare Providers

Levamisole

toward the heart .com

What is Levamisole?

What is the link with cocaine?

How often is levamisole detected in cocaine?

Levamisole Toxicity: Typical presentation and findings

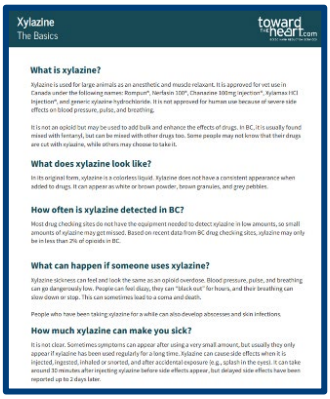
Pathognomonic cues: Also the cheeks, arms and legs

Bottom purpura

Leukopenia

Key cue evidence of autoantibodies

Xylazine – The Basics


Xylazine

The Basics

toward the heart .com

What is xylazine?

Xylazine is used for large animals as an anesthetic and muscle relaxant. It is approved for vet use in Canada under the following names: Rompun®, Narcazin 100®, (Chanazine 100mg injection®, Xylamax HCl Injection®, and generic xylazine hydrochloride. It is not approved for human use because of severe side effects on blood pressure, pulse, and breathing.

It is not an opioid but may be used to add bulk and enhance the effects of drugs. In BC, it is usually found mixed with fentanyl, but can be mixed with other drugs too. Some people may not know that their drugs are cut with xylazine, while others may choose to take it.

What does xylazine look like?

In its original form, xylazine is a colorless liquid. Xylazine does not have a consistent appearance when added to drugs. It can appear as white or brown powder, brown granules, and grey pebbles.

How often is xylazine detected in BC?

Most drug checking sites do not have the equipment needed to detect xylazine in low amounts, so small amounts of xylazine may get missed. Based on recent data from BC drug checking sites, xylazine may only be in less than 2% of opioids in BC.

What can happen if someone uses xylazine?

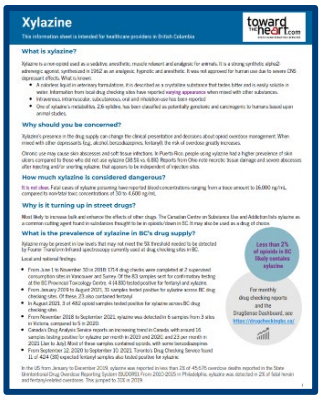
Xylazine sickness can feel and look the same as an opioid overdose. Blood pressure, pulse, and breathing can go dangerously low. People can feel dizzy, they can "black out" for hours, and their breathing can slow down or stop. This can sometimes lead to a coma and death.

People who have been taking xylazine for a while can also develop abscesses and skin infections.

How much xylazine can make you sick?

It is not clear. Sometimes symptoms can appear after using a very small amount, but usually they only appear if xylazine has been used regularly for a long time. Xylazine can cause side effects when it is injected, ingested, inhaled or snorted, and after accidental exposure (e.g., splash in the eyes). It can take around 30 minutes after injecting xylazine before side effects appear, but delayed side effects have been reported up to 2 days later.

Xylazine – For Healthcare Providers


Xylazine

This information sheet is intended for healthcare providers in British Columbia

toward the heart .com

What is xylazine?

Why should you be concerned?

How much xylazine is considered dangerous?

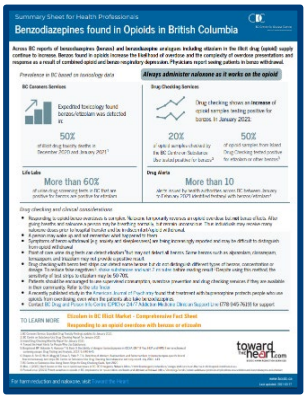
Why is it turning up in street drugs?

What is the prevalence of xylazine in BC's drug supply?

Less than 2% of opioids in BC likely contains xylazine

For monthly drug checking reports and the DrugSense Dashboard, see https://drugchecking.bc.ca/

Benzodiazepines found in Opioids in British Columbia


Summary Sheet for Health Professionals

Benzodiazepines found in Opioids in British Columbia

Always administer naloxone as it works on the opioid

BC Coroners Services

Drug Checking Services

50X

20X

50X

Life Labs

More than 60X

Drug Alerts

More than 10

Drug checking and clinical considerations

TO LEARN MORE

Etizolam in BC Illicit Market – Comprehensive Fact Sheet

Responding to an opioid overdose with benzos or etizolam

toward the heart .com

Glossary

Central nervous system refers to the body system made up of the brain and spinal cord that controls most of the body's functions, including breathing, movement, thinking, and speech.

Controlled substance refers to substances that are controlled under the federal Controlled Drugs and Substances Act (CDSA).

Euphoria refers to a feeling of intense happiness and excitement.

Hallucinate means to experience a sensory perception (like seeing, hearing, or feeling) something that is not there.

Hallucinogen use disorder refers to a problematic pattern of hallucinogen use that significantly interferes with a person's functioning.

Level of consciousness refers to describe a person's level of wakefulness, alertness, and awareness.

Neurotransmitter refers to a chemical messenger in the body that carries signals from one nerve cell to another cell.

Novel substances refers to new chemicals or compounds that may not have specific laws that govern their use.

Opioid dependence refers to a process where the body adapts and becomes reliant on opioids. The person will experience withdrawal if opioids are reduced or stopped.

Opioid poisoning refers to harms that happen to a person because of a toxic amount of opioids that overwhelm that body's normal functioning and cause breathing to slow or stop.

Opioid tolerance refers to a process where the body becomes less responsive to the effects of opioids over time. Tolerance means the person needs higher opioid doses to achieve the same effects.

Opioid use disorder refers to a problematic pattern of opioid use that significantly interferes with a person's functioning.

Opioid withdrawal refers to symptoms that happen when a person with an opioid dependence abruptly stops or reduces use of opioids.

Polysubstance use refers to the use of more than one substance at a time.

Potent or potency refers to how strong a substance is. If a substance is potent, it means a small amount has a large effect.

Psychoactive refers to substances that affect mental processes including thinking, perception, mood, consciousness, cognition, or behaviour.

Stimulant-induced psychosis refers to a mental state caused by the use of stimulants where a person experiences disconnection from reality (psychosis) and symptoms such as hallucinations, delusions, and paranoia.

Stimulant-related seizure refers to a type of seizure that happens because of the overstimulating effect of stimulants on the brain.

Stimulant toxicity (overamping) refers to harms that happen to a person because of a toxic amount of stimulants that overwhelm that body's normal functioning.

Stimulant use disorder refers to a problematic pattern of stimulant use that significantly interferes with a person's functioning.

Stimulant withdrawal refers to the physical and psychological symptoms that can occur after stopping or reducing use of stimulants.

Toxic or toxicity refers to the degree to which a substance can cause harm.

Unregulated drug supply refers to substances (drugs) that come from sources that are not regulated for quality or consistency by an oversight body (such as Health Canada). These substances are produced, distributed, bought, and sold outside of regulated systems.

Unregulated substances refer to substances that are not monitored for consistency or quality. This means the potency and contents of substances can be variable and unpredictable.

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With review from:
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Office of the Provincial Health Officer

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