

March 2019

# Safer Substance Use

An Overview of Psychoactive Substances  
and Methods of Consumption

## Harm Reduction Services Team

Jennifer McLaren, RN, Edmonton Zone Lead

Sara Gill, RN, Educator

# Overview

## Psychoactive Substances

- Definition
- Common Drug Classes

## Routes of Use

- Methods of Consumption
- Safer Use Tips

## References

## What is a psychoactive substance?

“[A] substance that once ingested affects mental processes (e.g., cognition or affect). This term and its equivalent, psychotropic drug, are the most neutral and descriptive terms for the whole class of substances, legal or illegal (including controlled drugs such as alcohol, tobacco and prescription drugs). The term does not necessarily imply abuse or dependence.”

- AHS *Harm Reduction for Psychoactive Substances* Policy (2019)

## Classification of Substances

Psychoactive substances can be classified several different ways



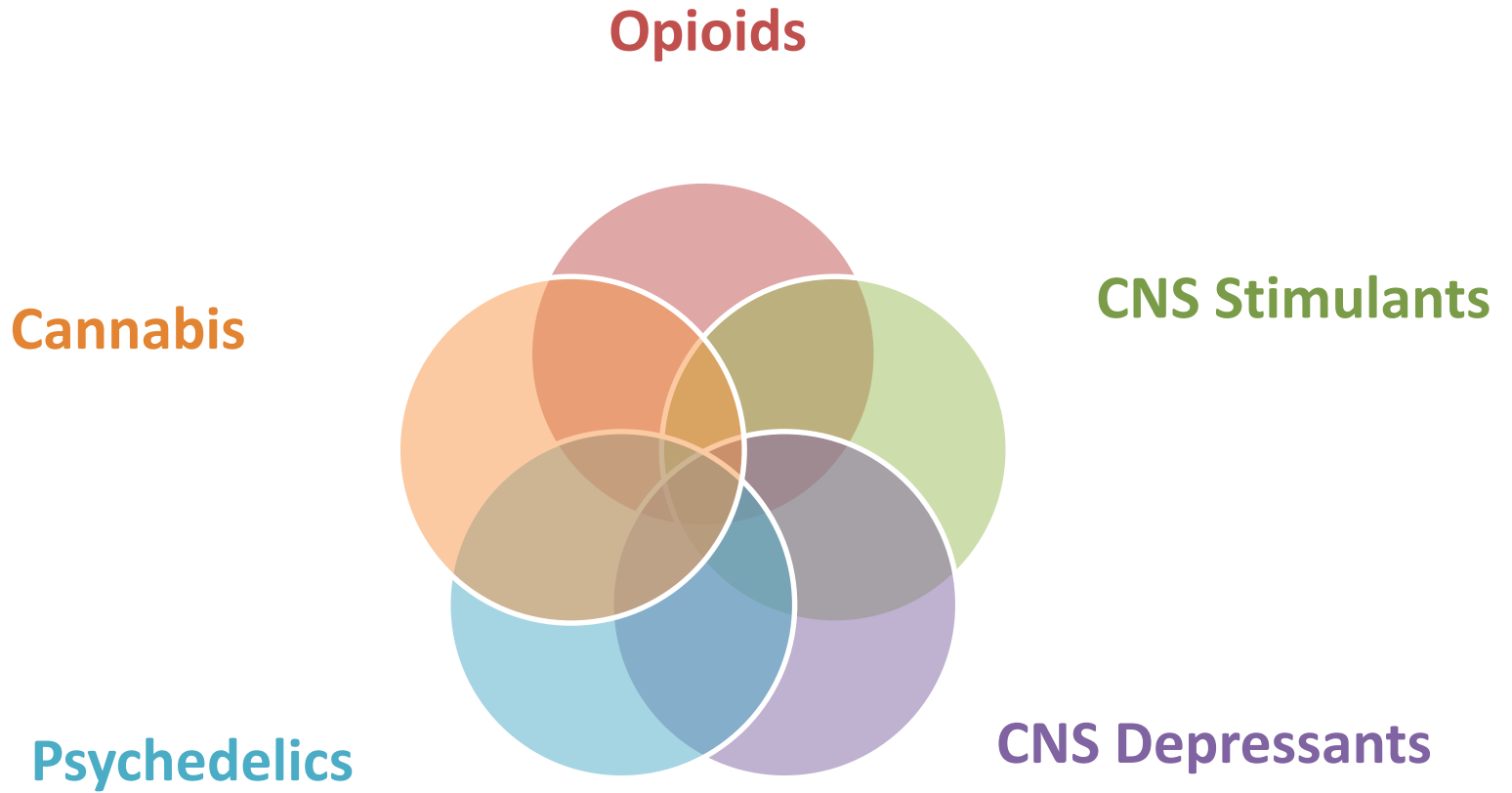
Common effects

Chemical structure

Drug schedule

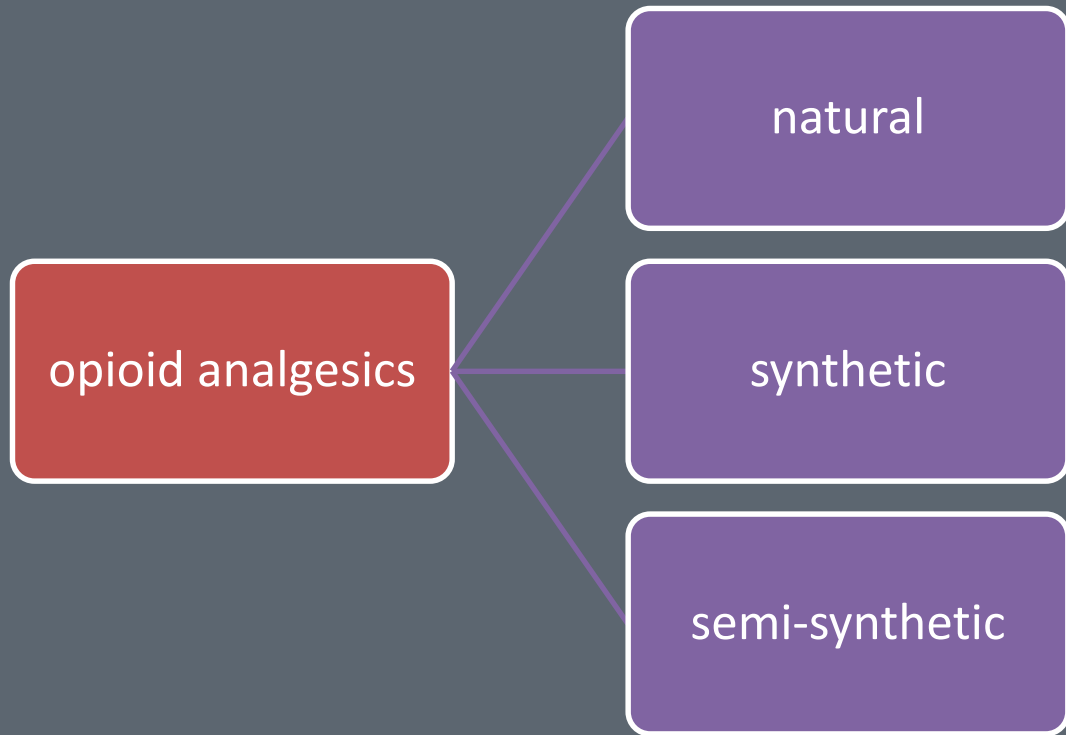
Indications for use

# Drug Classes



CNS = Central Nervous System

# Opioids



# Common Opioids

## Pharmaceuticals

- Morphine (e.g., Kadian)
- Hydromorphone (e.g., Dilaudid aka *Dilly*)
- Diacetylmorphine (e.g., pharmaceutical grade heroin)
- Oxycodone
- Codeine
- Methadone
- Combinations (e.g., Percocet, Tylenol 3, Suboxone)

## Street

- Heroin (aka *down, H, pants, brown sugar, dope, tar*)
- Fentanyl (aka *fake oxy, Shady 80s, green beans, beans*)

# Opioids

## Therapeutic Effects

- Suppress pain, suppress cough, relieve diarrhea

## Other Effects

- Euphoria (feelings of intense pleasure)
- Relaxed muscles
- Reduce anxiety and tension

## Physiological Responses

- Pupil constriction
- Slower respirations and heart rate
- Drowsiness, slowed or slurred speech
- Constipation, nausea, vomiting

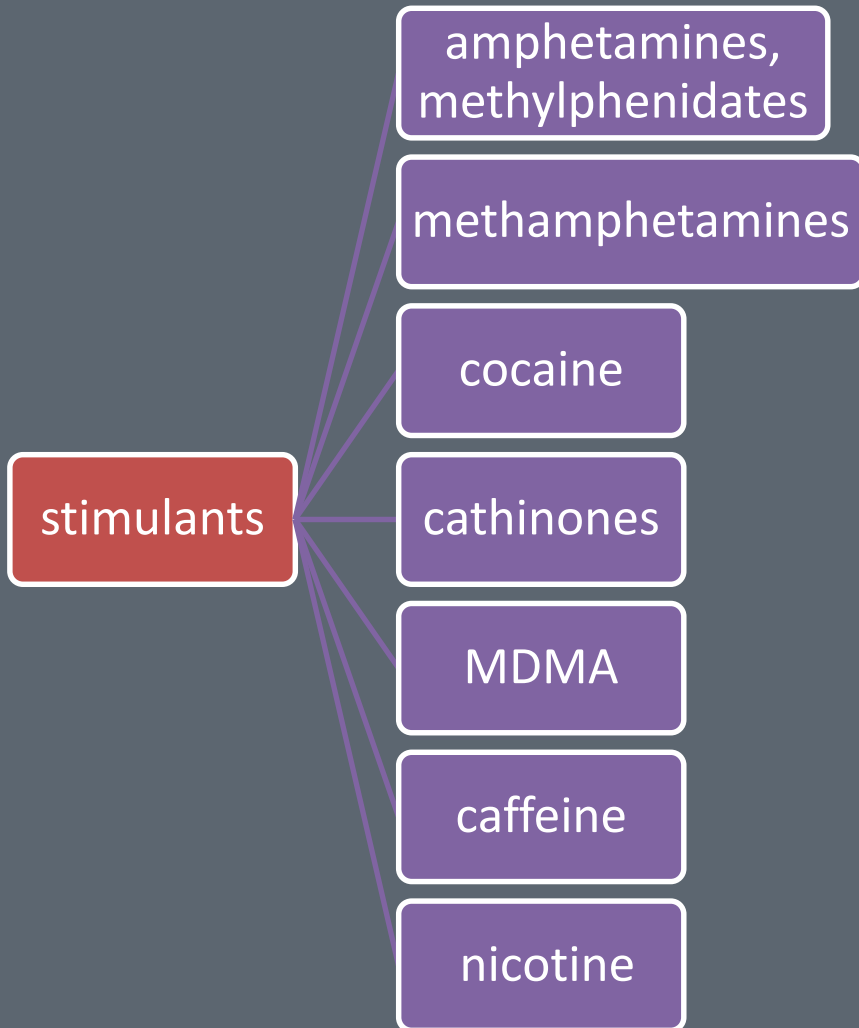


# Naloxone

- Opioid antagonist; antidote for opioid poisoning
- Onset of effects: 2-5 minutes
- Duration of effects: 30-60+ minutes
- Available in injectable and intranasal spray formulations



# Central Nervous System Stimulants



## Common CNS Stimulants

### Pharmaceuticals

- Ritalin
- Adderall
- Dexedrine

### Non-pharmaceuticals

- Nicotine
- Caffeine

### Street

- Crystal meth (aka *speed, pint, side, tek, meth, Tina, jib, crystal*)
- Cocaine (aka *coke, up, powder, blow, Charlie, rails*)
- Bath salts
- MDMA (aka *Molly, ecstasy*)

# CNS Stimulants

## Therapeutic Effects

- Management of ADHD, narcolepsy, and obesity

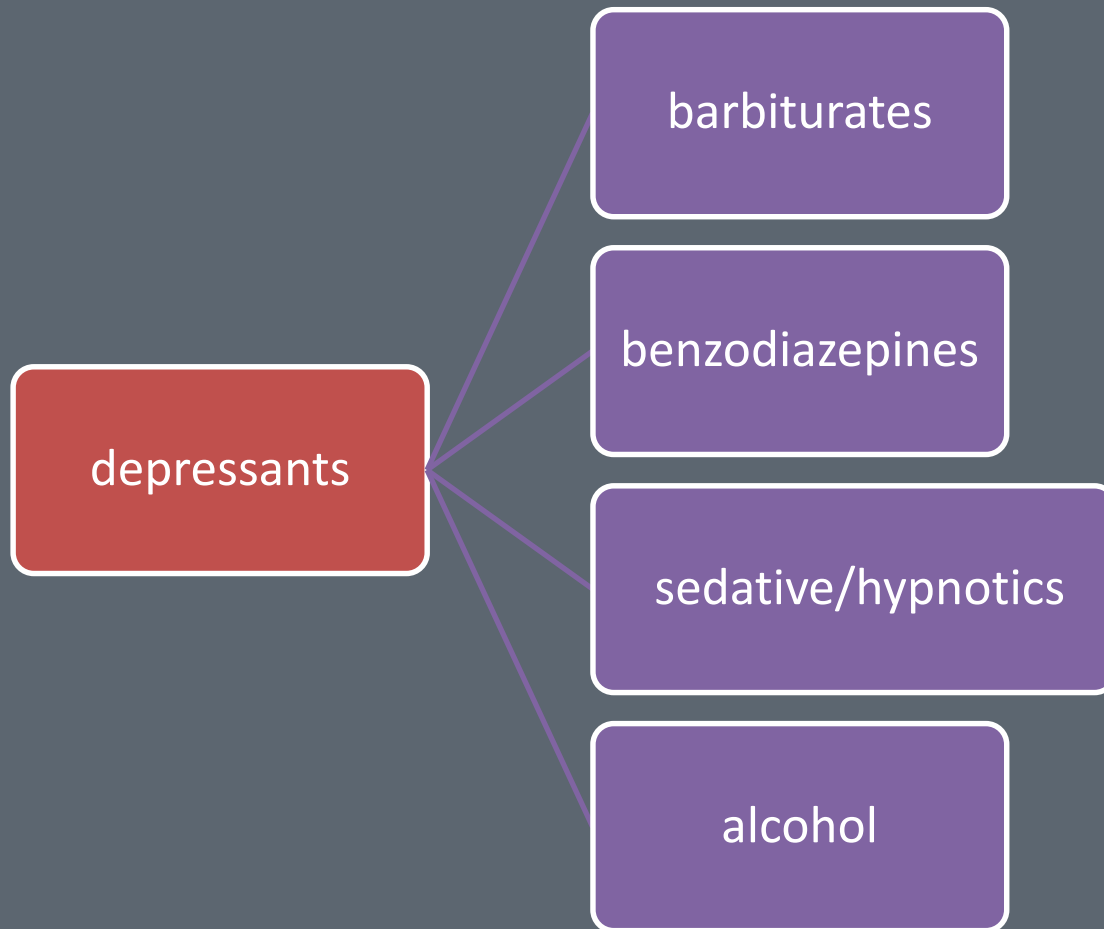
## Other Effects

- Sense of exhilaration, enhanced self-esteem
- Improve mental and physical alertness
- Reduce appetite, weight loss

## Physiological Responses

- Increased heart rate, blood pressure, body temperature
- Flushed skin, dry mouth, perspiration
- Jaw clenching, nausea, insomnia
- Mood swings, manic behavior, paranoia

# Central Nervous System Depressants



## Common CNS Depressants

Pharmaceuticals

- Phenobarbital
- Benzodiazepines aka *benzos* (e.g., Valium, Xanax, Ativan, clonazepam, midazolam)
- Sedative-hypnotics (e.g., Ambien, zopiclone, Lunesta)

Non-pharmaceuticals

- Alcohol

# CNS Depressants

## Therapeutic Effects

- Induce sleep, promote relaxation, relieve muscle spasms
- Relieve symptoms of anxiety/panic
- Prevent/manage seizures, manage alcohol withdrawal syndrome

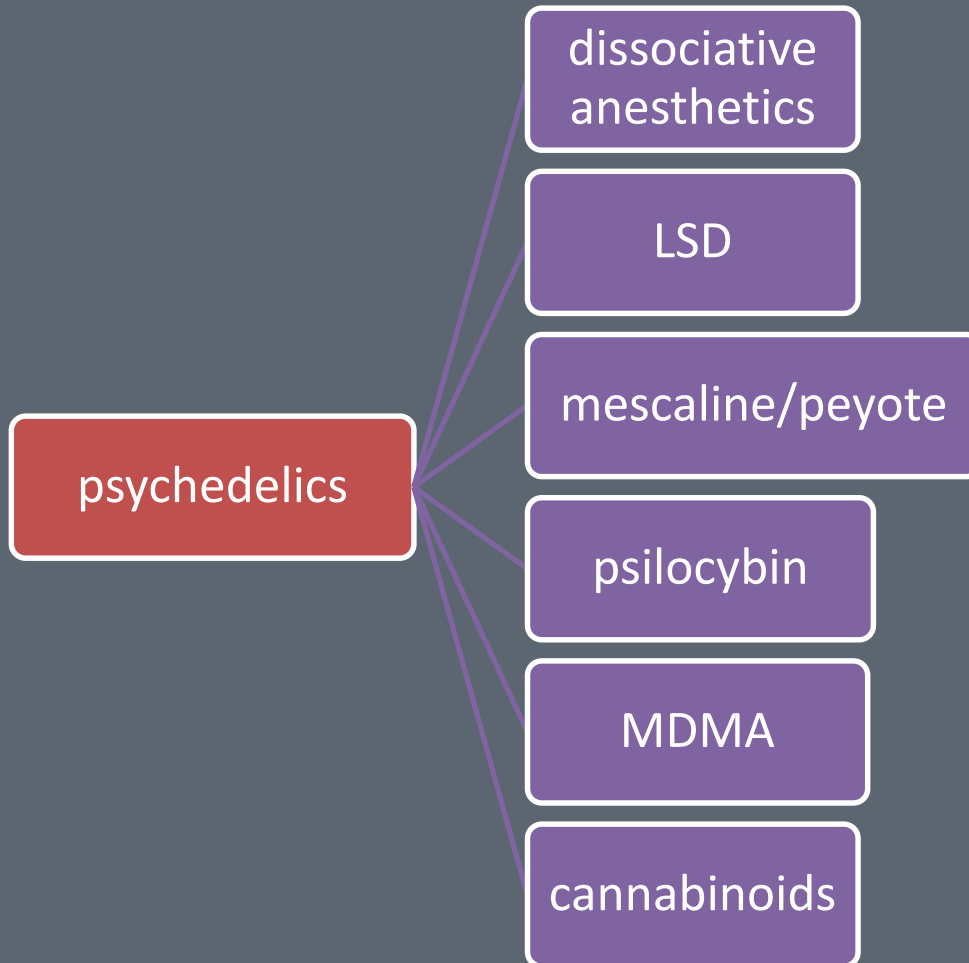
## Other Effects

- Reduced anxiety, feeling of well-being
- Lowered inhibitions
- Reduce reaction, impair memory, cause confusion

## Physiological Responses

- Slower respiration, heart rate and blood pressure
- Poor concentration, fatigue, confusion
- Impaired motor coordination, memory, judgment

# Psychedelics





## Common Psychedelics

### Pharmaceuticals

- Ketamine
- PCP

### Non-pharmaceuticals

- LSD (aka *acid*)
- Salvia
- MDMA (aka molly, ecstasy)
- Psilocybin (aka *magic mushrooms*)
- DMT (Dimethyltryptamine)

# Psychedelics

## Therapeutic Effects

- Anesthesia
- Clinical research to treat depression, PTSD, anxiety, substance use disorder
- Cultural/spiritual ceremony

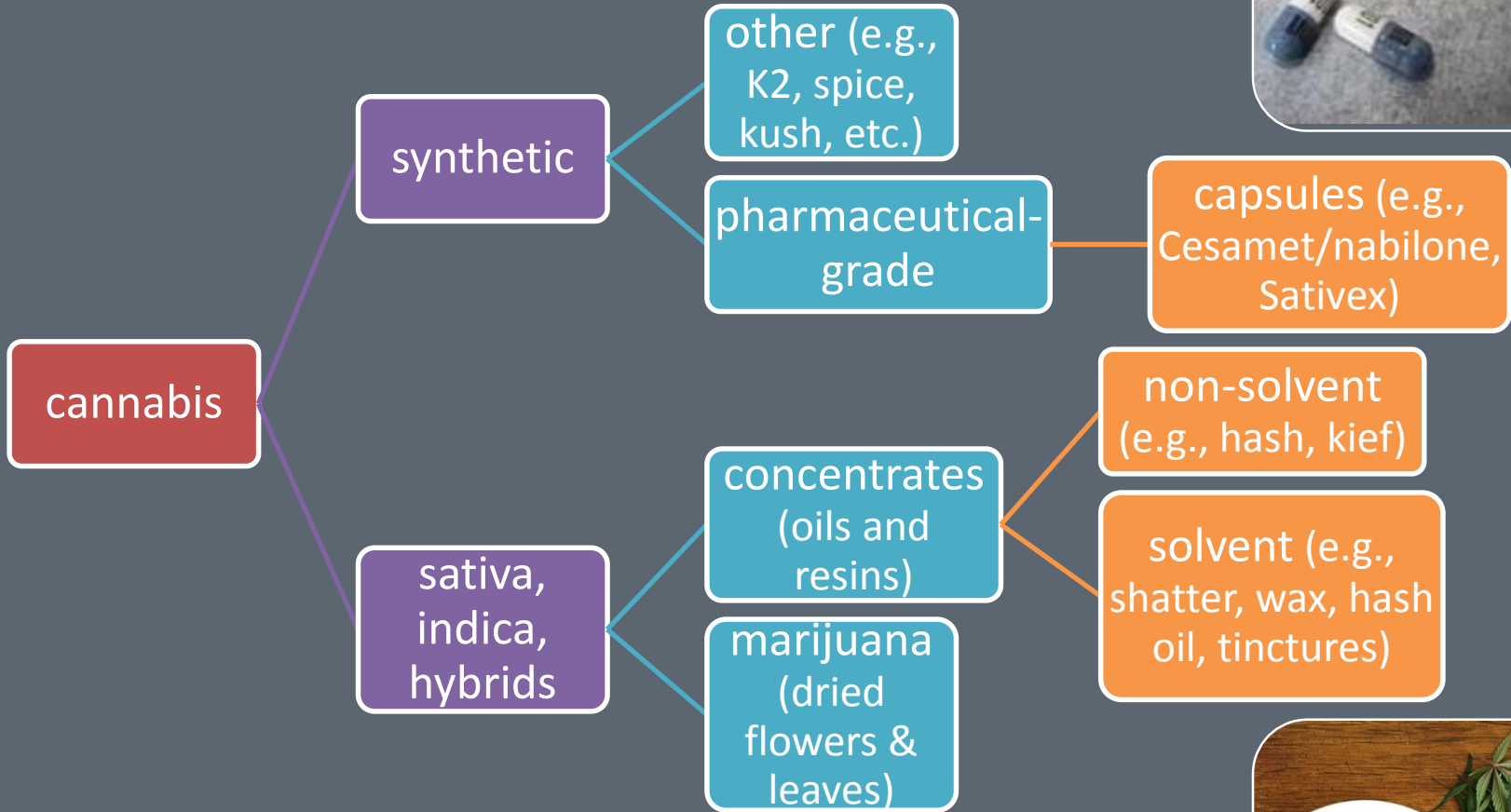
## Other Effects

- Altered states of time, perception and feeling; hallucinations
- Numbing of sensations and pain
- Paranoia
- Nausea

## Physiological responses

- Elevations in heart rate and/or blood pressure
- Rapid increase in body temperature
- Memory loss
- Pupil dilation
- Physical and psychological distress

# Cannabis



# Cannabis

## Therapeutic Effects

- Treatment of nausea and vomiting
- Adjunctive treatment for symptomatic relief of neuropathic pain

## Other Effects

- Euphoria, relaxation, time-distortion
- Slowed thought processes and reaction time
- Impaired balance and coordination

## Physiological Responses

- Dependent on type and THC component
- Paranoia, anxiety
- Increased heart rate and appetite
- Dilation of small blood vessels in the eyes

## Other Substances



### Antidepressants/Antipsychotics

- Produce sedation or drowsiness
- Can have stimulant-like effect



### Inhalants

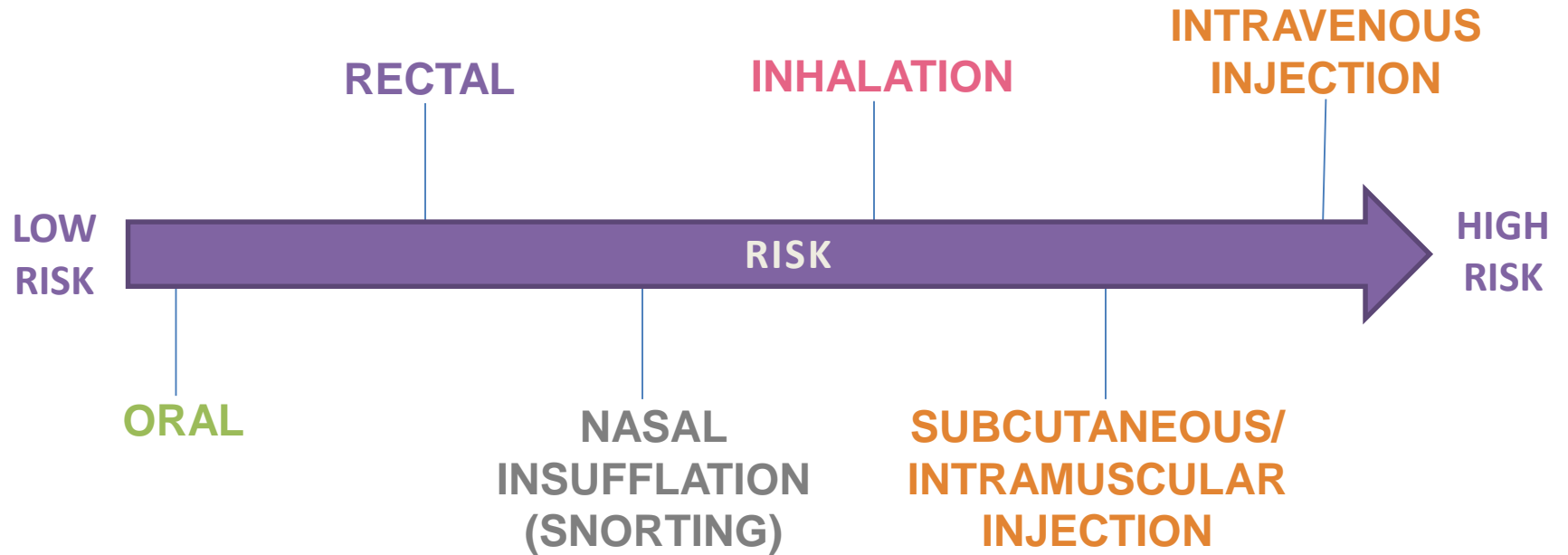
- Effects similar to anesthetics
- May experience slight stimulation, feeling of less inhibition, or loss of consciousness



### Over-the-counter (OTC)

- Diphenhydramine (Benadryl)
- Dimenhydrinate (Gravol)
- Dextromethorphan (cough suppressant)

# Routes of Consumption



## What it is

- Taking a drug by mouth to be absorbed through the digestive system

## Effects

- Slowest **onset** of effects and variable **duration**

## Methods

- Eating or drinking
- Ingestion (swallowing)
- Parachuting
- Gumming

# Oral Consumption

## Safer Use Tips

- Encourage a **test dose**
- Wait 30+ minutes before taking any other drugs
- Know ingredients and drugs being consumed, should there be any sensitivities or allergies



## What it is

- Swallowing a “parachute” or “bomb” made of paper containing the drug of choice to be absorbed in the stomach or bowel lining

## Method

- Drug is crushed and wrapped in single ply tissue or rolling paper and dropped onto back of tongue to swallow

## Effects

- Faster onset, and avoids unpleasant taste

## Risk

- Obstruction of the airway or bowel, irritation, nausea and vomiting, depending on the wrapping/container of choice

# Parachuting





# Parachuting

## Safer Use Tips

- Know risks that come with substance and wrapper being used
- Encourage a test dose
- Delay further drug use until after effects have set in to gauge tolerance



## What it is

- Rubbing a powdered form of drug onto oral mucous membranes

## Method

- Picking up powdered drug with finger tip and rubbing into gums and inside of lips

## Effects

- Faster onset (similar to nasal and rectal route)

## Risks

- Numbness and irritation from substance used
- Complications of mouth ulcers of varying severity

## Gumming



## Safer Use Tips

- Rinsing gums with warm water after use may help prevent irritation
- Encourage a test dose
- Delay further drug use until after effects have set in to gauge tolerance

## What it is

- Rectal insertion of drug where it is absorbed through the bowel lining

## Method

- **Suppository:** insertion of the drug in solid form
- **Enema:** prepared drug solution is transferred into a needleless syringe, inserted and injected into rectum

## Effects

- Faster onset (similar to nasal consumption) with shorter duration

## Risks

- Damage to the anus and rectum can increase risk of contracting sexually transmitted and blood-borne infections (STBBIs)
- Can worsen symptoms of existing gastro-intestinal conditions

## Rectal Consumption aka Plugging



## Safer Use Tips

- Use water-based lube for insertion of drug or syringe to prevent tissue damage
- Encourage a test dose
- Delay further drug use until after effects have set in to gauge tolerance

# Nasal Insufflation aka Snorting

## What it is

- Involves drug making contact with the nasal mucous membrane to enter bloodstream

## Method

- Powdered drug is divided into lines and snorted through a straw or rolled paper

## Effects

- Faster onset than oral route, usually within several minutes

## Risks

- Long-term: nosebleeds, intranasal crusting, rhinitis and chronic sinusitis, nasal ulcers, nasal septum perforation, loss of smell, problems swallowing



# Nasal Insufflation aka Snorting

## Safer Use Tips

- Don't share or re-use straws or bills
- Clean the surface drug will be on
- Make the powder as fine as possible
- Place the straw high up the nostril and alternate nostrils
- Rinse nostrils with lukewarm water after using
- Apply hydrating lotion or oil to nostrils in between use
- If bleeding, take a break



# Inhalation

## What it is

- Inhalation of a substance into the lungs

## Effects

- Faster onset and shorter duration

## Method

- Huffing
- Vaping
- Smoking



# Vaping

## What it is

- Heating a liquid solution that generates an aerosol or vapor that is inhaled

## Method

- Method of heating drug at a lower temperature in a vaporizer (e.g., e-cigarette) to inhale drug vapor and allow diffusion into bloodstream

## Effects

- Faster onset and shorter duration

## Risks

- May have reduced complications compared to other inhalation routes, however newer method with yet to be seen long-term effects



# Smoking

## What it is

- Burning a substance to inhale smoke produced into the lungs

## Method

- Video: Safer Crack Smoking (CATIE)  
<http://www.catie.ca/en/resources/safer-crack-smoking-demo>

## Effects

- Faster onset and shorter duration

## Risks

- Longterm: mouth, throat, and lung cancers, emphysema, bronchitis, asthma, blood-borne infection





# Inhalation

## Safer Use Tips

- Use a heat-resistant and shatterproof glass pipe, and do not use broken or cracked ones
- Use personal mouthpieces to prevent injury and spread of infection
- Avoid sharing pipes as this can spread infection
- Clean all equipment and hands prior to use
- Inhale slowly to prevent burning and exhale immediately
- Drink water, use lip balm, and chew gum to keep the mouth moist
- Store vaping liquid and other smoking products in a safe secure place

# Injection

## What it is

- Injection of a substance into tissue using a needle and syringe

## Effects

- Faster onset and shorter duration

## Method

- Subcutaneous (SC)
- Intramuscular (IM)
- Intravenous (IV)



# Subcutaneous (SC) Injection

## What it is

- Drug is injected into the fat tissue layer below the epidermis and dermis

## Method

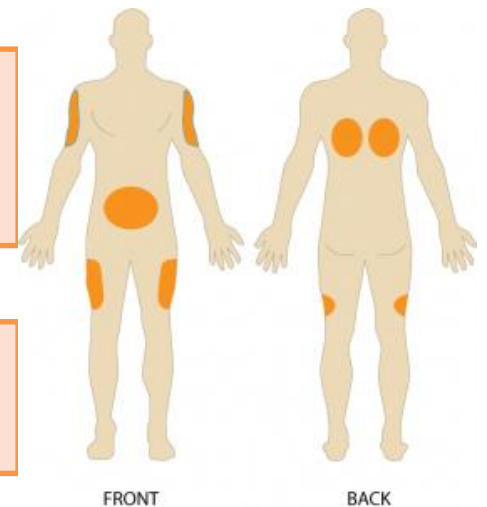
- Sites: sides of the arm, abdomen, front and sides of the thigh

## Effects

- Delayed onset of effects (>15 minutes)

## Risks

- Delayed onset means overdose or poisoning symptoms maybe be missed if individual is not monitoring self or being monitored by others
- Tissue damage, bruising, infection, induration



# Intramuscular (IM) Injection

## What it is

- Drug is injected into the muscle

## Method

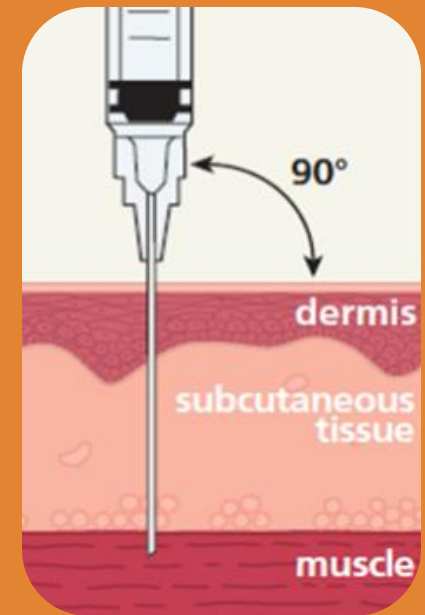
- Sites: shoulder, thigh, hip, buttocks

## Effects

- Onset usually within 15 minutes or less with prolonged duration

## Risks

- Delayed onset means overdose or poisoning symptoms maybe be missed if individual is not monitoring self or being monitored by others
- Tissue damage, infection



# Intravenous (IV) Injection

## What it is

- Drug is injected into a vein and enters the bloodstream

## Method

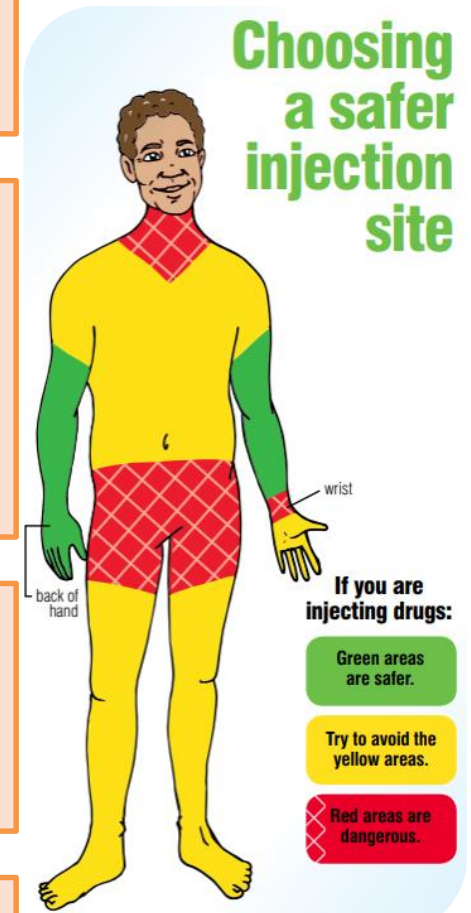
- Ideal sites: arms and legs
- High-risk sites: neck, groin, face
- Video: Street heroin optimal preparation and injection (Jon Derricott)  
<https://www.youtube.com/watch?v=gc-2A4F0kBk>

## Effects

- Immediate, fastest-acting effect
- Generally fully absorbed compared to other routes

## Risks

- Immediate overdose/poisoning
- Tissue damage, infection



# Injection

## Safer Use Tips

- Wash hands before and after injecting
- Clean skin with alcohol swab prior to injection but **not** after
- Use a new syringe after unsuccessful injection attempts
- Filter all drugs when drawing up into syringe
- Sterile supplies used to prepare and inject are one-time use and should not be shared
- Dispose of sharps and injection-related litter appropriately

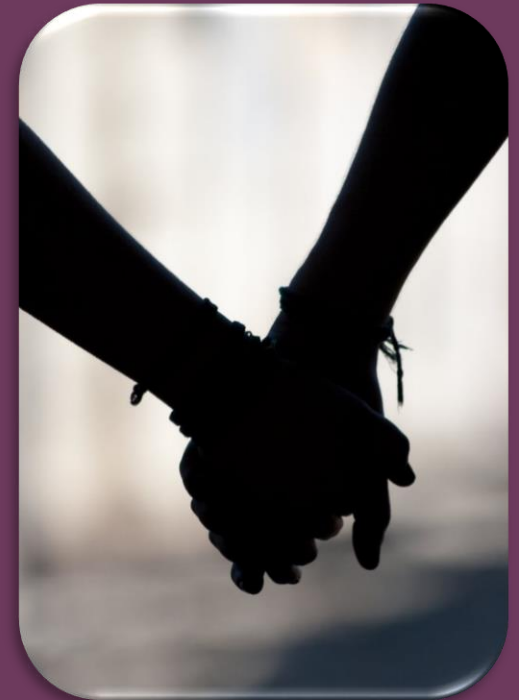


## Safer Substance Use Tips

- Avoid using alone
- Start low and go slow
- Avoid mixing substances
- Know your tolerance
- Know the signs and symptoms of overdose and call 911
- Carry a naloxone kit and know to use it

# Key Messages

- Education on safer substance use is a harm reduction approach.
- People are empowered to make safer and informed choices to reduce harms and prevent overdose.
- Nonjudgmental conversations help foster trusting relationships with people who use substances.
- Education on safer use strategies can be done in any context, by any care provider.





# questions comments

[harm.reduction@ahs.ca](mailto:harm.reduction@ahs.ca)  
[www.ahs.ca/harmreduction](http://www.ahs.ca/harmreduction)



# References

- AddictionResource.com. (2017). Plugging Drugs – What is it, Methods, Requirements, and Complications. Retrieved from <https://addictionresource.com/addiction/plugging-drugs/>
- Brand, H.S., Gonggrijp, S. & C.J. Blanksma. (2008). Cocaine and oral health. Retrieved from <http://www.nature.com/bdj/journal/v204/n7/full/sj.bdj.2008.244.html?foxtrotcallback=true>
- CATIE. (2011). Safer snorting. Retrieved from <http://www.catie.ca/en/practical-guides/hepc-in-depth/prevention-harm-reduction/safer-snorting>
- CATIE. (2013). Best Practice Recommendations for Canadian Harm Reduction Programs: Safer crack cocaine smoking equipment distribution. Retrieved from [https://www.catie.ca/sites/default/files/BestPractices\\_SaferCrackSmokingEquipmentDistribution\\_July2013.pdf](https://www.catie.ca/sites/default/files/BestPractices_SaferCrackSmokingEquipmentDistribution_July2013.pdf)
- CATIE. (2013). Best Practice Recommendations for Canadian Harm Reduction Programs Part 2: Safer crystal methamphetamine smoking equipment distribution. Retrieved from [https://www.catie.ca/sites/default/files/1502\\_BestPractices2\\_OnePagers\\_SaferCrystalMethEquipment.pdf](https://www.catie.ca/sites/default/files/1502_BestPractices2_OnePagers_SaferCrystalMethEquipment.pdf)
- CATIE. (2011). Safer crack smoking. Retrieved from <https://www.catie.ca/en/practical-guides/hepc-in-depth/prevention-harm-reduction/safer-crack-smoking>
- CATIE. (2015). Choosing a safer injection site. Retrieved from <http://librarypdf.catie.ca/PDF/ATI-70000s/70162.pdf>
- Doyle, G. R. & McCutcheon, J. A. (2012). 7.5 *Intravenous Medications by Direct IV Route*. Retrieved from <https://opentextbc.ca/clinicalskills/chapter/6-9-iv-main-and-mini-bag-medications/>
- Doyle, G. R. & McCutcheon, J. A. (2012). 7.3 *Intradermal and Subcutaneous Injections*. Retrieved from <https://opentextbc.ca/clinicalskills/chapter/6-7-intradermal-subcutaneous-and-intramuscular-injections/>
- Government of Canada. (2019). About vaping. Retrieved from <https://www.canada.ca/en/health-canada/services/smoking-tobacco/vaping.html>
- Government of Canada. (2017). Controlled and illegal drugs. Retrieved from <https://www.canada.ca/en/health-canada/services/substance-use/controlled-illegal-drugs.html>
- Here to Help. (2012). Safer Smoking: Crack and Crystal Meth. Retrieved from <http://heretohelp.bc.ca/sites/default/files/safer-smoking-crack-and-crystal-meth.pdf>
- Kenerson, K.L. & K.C. Lear-Kaul. (2012). Ingestion of drugs by “parachuting”: a unique drug delivery technique. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/20938324>
- National Institute of Drug Abuse. (2006). Commonly Abused Drugs. Retrieved from <https://www.kean.edu/~roneilfi/Drugs%20of%20Abuse.htm>
- U.S. Department of Justice Drug Enforcement Administration. (2017). Drugs of Abuse. Retrieved from [https://www.dea.gov/sites/default/files/2018-06/drug\\_of\\_abuse.pdf](https://www.dea.gov/sites/default/files/2018-06/drug_of_abuse.pdf)