Recommendations on Assessment and Treatment of Substance Intoxication & Withdrawal in Children & Youth

This resource provides guidance on assessment and initiation of treatment for **children/youth 10 to 18.99 years old** presenting intoxicated or undergoing acute withdrawal. Information may be relevant for other ages based on clinical judgement. This table is intended to be used in conjunction with the full guideline.

- **Consult BC Drug and Poison Information Centre 24/7 (1-800-567-8911) for treatment/toxicity information on intentional overdoses or unintentional ingestions/exposures**
- The Addiction Medicine Clinician Support Line (1-778-945-7619) is available **24/7** for questions regarding treatment of substance use concerns

If using a digital copy, click the relevant section below. Refer to page number for printed copies.

SUBSTANCE	Vitals, Signs & Symptoms	Complications	Treatment Recommendations

Undifferentiated (INTOXICATION)	Complete vitals, Pediatric Early Warning Score, neurological status (Glasgow coma scale), and mental status exam.
	Other considerations:
	• Temperature should be assessed due to risk of hypo- or hyperthermia dependent on substance taken and/or prolonged environmental exposure
	• Assess pupils
		Dependent on substance(s) ingested	**Investigations & Monitoring**
			• Complete primary assessment and immediate interventions for stabilization (ABCs)
			• For profoundly decreased LOC or respiratory depression refractory to initial antidotes, consider mixed substance ingestion
			• Rule out possible medical / biological reasons for presentation and assess for concurrent acute conditions
			• Order point of care glucose and serum toxicology (ethanol, acetaminophen, or salicylates)
			• Consider urine drug test
			• Depending on clinical circumstances, consider: serum pregnancy test, venous blood gas, lactate, urea and electrolytes/osmolality, anion gap, osmolal gap, creatinine, and creatine kinase, CBC, liver enzymes, blood cultures, testing for sexually transmitted and blood borne infections, ECG, and intracranial imaging
			• Gather collateral information
			• Reassess and consider escalating to higher level of care as required
			
			Medications
			• If heavily sedated/obtunded with vital sign instability consider naloxone. Naloxone should only be used with signs of opioid overdose (respiratory rate < 10/minute, SpO2 < 92% on room air, or fentanyl induced chest wall rigidity). Otherwise, use watch and wait approach
			  ○ A smaller dose of naloxone is preferred initially to avoid inducing severe withdrawal syndrome, unless there is acute concern for airway compromise
			  ○ Refer to Emergency Care BC Opioid Overdose Management Guideline for additional guidance
			  ○ Note: may remain over-sedated due to combination of substances (e.g., opioids and benzodiazepines) stimulant withdrawal, or other patient factors
			• Refer to CHBC Chemical Restraint Algorithm for increased agitation
			
			Supportive Care
			• Provide environmental supports and minimize stimuli as appropriate and informed by the CHBC Least Restraint Hierarchy of Safety and the patient's level of stability and monitoring requirements
			• Offer to connect with Indigenous cultural support if child/youth self-identifies as Indigenous

SUBSTANCE	Vitals, Signs & Symptoms				Complications	Treatment Recommendations
	Temp	HR	BP	Resp Rate		
Alcohol (ethanol) (INTOXICATION)	- / ↓	↓	↓	↓	• CNS depression • Respiratory depression • Hypoglycemia • Hypovolemia • Hypothermia • Loss of consciousness	**Investigations & Monitoring** • Clinical signs are not specific or sensitive indicators of blood alcohol concentration (42). Alcohol levels in children/youth may be underestimated based on clinical appearance alone (29) • Monitor for CNS and respiratory depression (9) • Point of care blood glucose, blood ethanol concentration, serum electrolytes/osmolality, anion gap, osmolal gap, venous blood gas (43,44) • Consider liver function and enzyme tests • Temperature maintenance • Consider CT if decreased level of consciousness **Medications** • **Antidote** – nil • IV fluids (crystalloid) if needed due to vomiting (7) • Antiemetics may be used to reduce nausea and vomiting to prevent gastric content aspiration (9) • Consider thiamine IV or PO if heavy alcohol use or poor nutrition intake • Refer to CHBC Chemical Restraint Algorithm for increased agitation **Supportive Care** • Provide environmental supports and minimize stimuli as appropriate and informed by the CHBC Least Restraint Hierarchy of Safety and the patient's level of stability and monitoring requirements • Offer to connect with Indigenous cultural support if child/youth self-identifies as Indigenous
	Mental Status • Confusion • Altered LOC **Other signs/symptoms** • Alcohol odor or halitosis • Slurred speech • Lack of coordination • Poor concentration • Dizziness • Unsteady gait • Hyporeflexia • Vomiting • Hematemesis • Gastritis • Hypotension					

<table>
<tr><th>SUBSTANCE</th><th>Vitals, Signs & Symptoms</th><th>Complications</th><th>Treatment Recommendations</th></tr>
<tr>
<td>Alcohol (ethanol) (WITHDRAWAL)</td>
<td>
<table>
<tr><th>Temp</th><th>HR</th><th>BP</th><th>Resp Rate</th></tr>
<tr><td>-/↑</td><td>↑</td><td>↑</td><td>↑</td></tr>
</table>
Mental Status
• Agitation
• Anxiety
• Confusion
• Transient hallucinations, auditory visual, tactile disturbances

Other signs/symptoms
• Autonomic hyperactivity
• Sweating
• Nausea, vomiting, diarrhea
• Tremor
• Tactile disturbances
• Headache
</td>
<td>• Seizures</td>
<td>
Investigations & Monitoring
• Use CIWA- Ar: Clinical Institute Withdrawal Assessment for Alcohol Revised to guide based on severity of withdrawal
• Refer to MSTEP guide for information on progression of withdrawal symptoms (pg. 15)
• Consider monitoring for refeeding syndrome if heavy alcohol use or poor nutrition intake.

Medications
• Consider thiamine IV or PO if heavy alcohol use or poor nutrition intake
• Consider benzodiazepines (severe withdrawal) in consultation with an Addiction Medicine specialist
• Refer to page 58 & 77 of the BCCSU High Risk Drinking and Alcohol Use Disorder Guideline for guidance on withdrawal management and pharmacotherapy options for youth
• Refer to CHBC Chemical Restraint Algorithm for increased agitation

Supportive Care
• Provide environmental supports and minimize stimuli as appropriate and informed by the CHBC Least Restraint Hierarchy of Safety and the patient's level of stability and monitoring requirements
• Offer to connect with Indigenous cultural support if child/youth self-identifies as Indigenous
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<tr><th>Temp</th><th>HR</th><th>BP</th><th>Resp Rate</th></tr>
<tr><td>Benzodiazepines, Sedative hypnotics (INTOXICATION)</td><td>- / ↓</td><td>↓</td><td>↓</td><td>↓</td><td>• CNS & respiratory depression
• If deeply sedated/obtunded, consider mixed substance ingestion</td><td>Investigations & Monitoring
• Point of care glucose, serum toxicology (ethanol, acetaminophen, or salicylates)
• Depending on clinical circumstances, consider the following investigations: serum pregnancy test, venous blood gas, lactate, urea and electrolytes/osmolality, anion gap, osmolal gap, creatinine, and creatine kinase, CBC, liver enzymes, blood cultures, testing for sexually transmitted and blood borne infections, ECG, and/or intracranial imaging
• Consider urine drug test (UDT). Certain benzodiazepines may not be detected in UDT. See CHBC Interpreting UDT Resource

Medications
• Activated charcoal is not recommended due to risk of aspiration and lack of benefit
• If respiratory depression, a concomitant opioid overdose may be present, and it is reasonable to administer appropriate doses of parenteral naloxone
• Antidote – Flumazenil administration is generally NOT recommended. Flumazenil can precipitate seizures in patients on chronic benzodiazepine therapy, other anti-convulsant, or in co-ingestions with other agents that lower seizure threshold. Only consider using flumazenil if it is a confirmed, single-substance benzodiazepine ingestion producing hypoventilation or over-sedation with the inability to protect airway. Consult BC Drug and Poison Information Centre 1-800-567-8911.

Supportive Care
• Provide environmental supports and minimize stimuli as appropriate and informed by the CHBC Least Restraint Hierarchy of Safety and the patient’s level of stability and monitoring requirements
• Offer to connect with Indigenous cultural support if child/youth self-identifies as Indigenous</td></tr>
<tr><td colspan="5">Mental Status
• Confusion
• Lethargy
• Altered LOC

Other signs/symptoms
• Slurred speech
• Poor concentration
• Dizziness
• Ataxia (lack of coordination / unsteady gait)
• Decreased muscle tone
• Hyporeflexia
• Vomiting
• Paradoxical reaction</td></tr>
</table>

SUBSTANCE	Vitals, Signs & Symptoms				Complications	Treatment Recommendations
	Temp	HR	BP	Resp Rate		
Benzodiazepines, Sedative hypnotics (WITHDRAWAL)	-/↑	↑	↑	↑	• Seizures	**Investigations & Monitoring** • Inpatient management may be required • Implement ongoing monitoring for signs and symptoms, consider using CIWA-B: Clinical Institute Withdrawal Assessment for Benzodiazepines or CIWA- Ar: Clinical Institute Withdrawal Assessment for Alcohol Revised • Withdrawal timelines differ between types of benzodiazepines and with duration of use. Concentrations of benzodiazepines within the illicit drug supply can be high enough to cause withdrawal. Urine drug test (UDT) may be used for confirmatory testing to identify and alert team to possible withdrawal. Certain benzodiazepines may not be detected in UDT (See CHBC Interpreting UDT Resource) **Medications** • If considering a benzodiazepine taper, consult Addiction Medicine specialist to weigh risks and benefits and consider admission **Supportive Care** • Provide environmental supports and minimize stimuli as appropriate and informed by the CHBC Least Restraint Hierarchy of Safety and the patient's level of stability and monitoring requirements • Offer to connect with Indigenous cultural support if child/youth self-identifies as Indigenous
	Mental Status • Agitation • Anxiety • Confusion • Hallucinations (auditory, tactile, visual) • Paranoia **Other signs/symptoms** • Psychomotor agitation • Sensory hypersensitivity • Insomnia • Sweating • Abdominal cramping, nausea, vomiting, diarrhea • Lack of appetite • Tremor • Headache					

SUBSTANCE	Vitals, Signs & Symptoms				Complications	Treatment Recommendations
	Temp	HR	BP	Resp Rate		
Gamma-hydroxybutyrate (GHB) (INTOXICATION)	- / ↓	↓	↓	↓	• CNS & respiratory depression, which can be very rapid, especially when combined with other sedating drugs (GHB | CAMH) • Seizures	**Investigations & Monitoring** • Order point of care glucose, serum toxicology (ethanol) • Depending on clinical circumstances, consider the following investigations: serum pregnancy test, venous blood gas, lactate, urea and electrolytes/osmolality, anion gap, osmolal gap, creatinine, and creatine kinase, CBC, liver enzymes, blood cultures, testing for sexually transmitted and blood borne infections, ECG, and/or intracranial imaging • Monitor for CNS & respiratory depression • If drug-facilitated sexual assault is suspected, offer sexual assault assessment **Medications** • **Antidote -** nil (no clinically proven reversal agents/antidotes for GHB toxicity exist) • Refer to CHBC Chemical Restraint Algorithm for increased agitation **Supportive Care** • Provide environmental supports and minimize stimuli as appropriate and informed by the CHBC Least Restraint Hierarchy of Safety and the patient's level of stability and monitoring requirements • Offer to connect with Indigenous cultural support if child/youth self-identifies as Indigenous
	Mental Status • Fluctuations in mental status • Euphoria (lower doses) • Confusion • Disinhibition • Drowsiness/dizziness • Impaired memory • Sedation **Other signs/symptoms** • Nausea and vomiting (with higher dose) • Bradycardia • Myoclonic jerks					

SUBSTANCE	Vitals, Signs & Symptoms				Complications	Treatment Recommendations
	Temp	HR	BP	Resp Rate		
Gamma-hydroxybutyrate (GHB) (WITHDRAWAL) (45,46)	↑	↑	↑	-	• Delirium • Rhabdomyolysis • Seizures Note: Withdrawal presents similar to alcohol and benzodiazepine withdrawal but given its short half-life can progress rapidly and be severe (e.g., seizures) in someone with dependence.	**Investigations & Monitoring** • Depending on clinical circumstances, consider the following investigations: serum pregnancy test, venous blood gas, lactate, urea and electrolytes/osmolality, anion gap, osmolal gap, creatinine, and creatine kinase, CBC, liver enzymes, blood cultures, testing for sexually transmitted and blood borne infections, ECG, and/or intracranial imaging • Inpatient admission may be required **Medications** • Treatment of GHB withdrawal is primarily supportive with administration of sedatives and requires monitoring for respiratory depression. Consult Addiction Medicine • Selection of medications is dependent on severity and presence of delirium. For detailed guidance refer to Up to Date Guidance on GHB Withdrawal **Supportive Care** • Provide environmental supports and minimize stimuli as appropriate and informed by the CHBC Least Restraint Hierarchy of Safety and the patient's level of stability and monitoring requirements • Offer to connect with Indigenous cultural support if child/youth self-identifies as Indigenous
	Mental Status • Anxiety • Agitation • Paranoia • Hallucinations • Labile mood **Other signs/symptoms** • Tremors • Insomnia • Sweating • Nausea and vomiting					

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<tr><th>Temp</th><th>HR</th><th>BP</th><th>Resp Rate</th></tr>
<tr><td>Opioids (INTOXICATION)</td><td colspan="4">↓ ↓ ↓ ↓
Pupils - Constricted (pinpoint)
Pinpoint pupils may not be present with polysubstance toxicity
Mental Status
Drowsiness and decreased level of consciousness
Impairment in attention / memory
Other signs/symptoms
Hyporeflexia
Muscle rigidity (fentanyl)
Myoclonic jerks
Pruritus
Slurred speech
Decreased bowel sounds
Constipation
Urinary Retention</td><td>CNS & respiratory depression (47)
Severe bradycardia (47,48)
Bowel perforation (chronic use)</td><td>Investigations & Monitoring
Order point of care glucose, serum toxicology (ethanol, acetaminophen, or salicylates)
Depending on clinical circumstances, consider the following investigations: serum pregnancy test, venous blood gas, lactate, urea and electrolytes/osmolality, anion gap, osmolal gap, creatinine, and creatine kinase, CBC, liver enzymes, blood cultures, testing for sexually transmitted and blood borne infections, ECG, and/or intracranial imaging
Consider chest x-ray, in patients with persistent respiratory findings
Urine drug test (UDT) (32)
Monitor for CNS & respiratory depression and support airway as required
Inpatient admission may be required
Medications
Antidote - Naloxone
Naloxone should only be used with signs of opioid overdose (respiratory rate < 10/minute, SpO2 < 92% on room air, or fentanyl induced chest wall rigidity). Otherwise, use watch and wait approach
A smaller dose of naloxone is preferred initially to avoid inducing severe withdrawal syndrome, unless there is acute concern for airway compromise
Refer to Emergency Care BC Opioid Overdose Management Guideline for additional guidance
Note: may remain over-sedated due to combination of substances (e.g., opioids and benzodiazepines) stimulant withdrawal, or other patient factors
Supportive Care
Provide environmental supports and minimize stimuli as appropriate and informed by the CHBC Least Restraint Hierarchy of Safety and the patient’s level of stability and monitoring requirements
Offer to connect with Indigenous cultural support if child/youth self-identifies as Indigenous</td></tr>
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SUBSTANCE	Vitals, Signs & Symptoms				Complications	Treatment Recommendations
	Temp	HR	BP	Resp Rate		
Opioids (WITHDRAWAL)	-/↑	↑	↑	↑		**Investigations & Monitoring** • Implement ongoing monitoring for signs and symptoms of withdrawal using Clinical Opioid Withdrawal Scale (COWS) or Subjective Opiate Withdrawal Scale (SOWS) • Urine drug test to inform withdrawal management **Medications** • Consult/refer to addiction provider if there is an identified risk for opioid use disorder to discuss if Opioid Agonist Treatment (OAT) is appropriate. For detailed guidance on treatment of opioid use disorder in youth refer to: BCCSU Opioid Use Disorder—Youth Supplement • Buprenorphine-naloxone is preferred if youth is interested and has an opioid use disorder. • May also consider short acting opioid medications or non-opioid adjuncts (e.g., clonidine) • For more detailed guidance on treating opioid withdrawal refer to: Opioid withdrawal in adolescents - UpToDate • Withdrawal management alone is not recommended, due to high rates of non-completion, relapse, and toxicity events **Supportive Care** • Provide environmental supports and minimize stimuli as appropriate and informed by the CHBC Least Restraint Hierarchy of Safety and the patient's level of stability and monitoring requirements • Offer to connect with Indigenous cultural support if child/youth self-identifies as Indigenous
	Mental Status • Anxiety • Agitation **Other signs/symptoms** • Autonomic hyperactivity • Restlessness • Insomnia • Yawning • Lacrimation /rhinorrhea (tearing / runny nose) • Sweating • Muscle spasms, cramps, and aches • Joint stiffness • Nausea / vomiting (may cause hypotension due to volume loss) • Diarrhea • Increased bowel sounds • Fever/chills • Piloerection (goosebumps)					

SUBSTANCE	Vitals, Signs & Symptoms				Complications	Treatment Recommendations
	Temp	HR	BP	Resp Rate		
Stimulants (INTOXICATION) **i.e., cocaine, crack, amphetamines, methamphetamines** ***For MDMA see MDMA specific section of table***	↑	↑	↑	↑	• Severe hyperthermia • Central & peripheral sympathomimetic effects • Vasoconstriction • Chest pain or cardiac arrhythmias • Rhabdomyolysis • Seizures • Intracranial hemorrhage • Cerebral edema • Amphetamines, methamphetamines, cocaine, and MDMA all have risk of serotonin toxicity (serotonin syndrome), which if untreated can lead to multi-organ failure and death • Synthetic cathinones (bath salts) act similarly and have risk of serotonin syndrome • Severe delirium • Psychosis	**Investigations & Monitoring** • 12 lead ECG Continuous cardiac monitoring • Monitor temperature due to risk of hyperthermia and initiate cooling measures • Monitor muscle tone and mental status • Order point of care glucose • Depending on clinical circumstances, consider the following investigations: serum pregnancy test, venous blood gas, lactate, urea and electrolytes/osmolality, anion gap, osmolal gap, creatinine, and creatine kinase, CBC, liver enzymes, blood cultures, testing for sexually transmitted and blood borne infections • Consider intracranial imaging if any concern of vascular dissection • Assess and monitor for psychosis. If a patient presents with symptoms of psychosis, psychiatry should be consulted **Medications** • **Antidote –** nil • Benzodiazepines are recommended to treat restlessness, agitation, hypertension, cardiovascular symptoms, and/or serotonin toxicity • Consult with BC Drug and Poison Information Centre (1-800-567-8911) for other treatment options regarding serotonin toxicity • Differentiating primary psychosis from stimulant induced psychosis in acute care may be difficult. May need to consult psychiatry to be able to rule out primary psychotic disorder from substance induced psychosis. Treatment with benzodiazepines and antipsychotics depends on severity of symptoms • Refer to CHBC Chemical Restraint Algorithm for increased agitation • For more detailed guidance on treating stimulant use disorder refer to: BCCSU Stimulant Use Disorder Practice Update **Supportive Care** • Provide environmental supports and minimize stimuli as appropriate and informed by the CHBC Least Restraint Hierarchy of Safety and the patient's level of stability and monitoring requirements • Offer to connect with Indigenous cultural support if child/youth self-identifies as Indigenous
	Mental Status • Agitation • Confusion • Paranoia • Hallucinations / delusions • Sedation **Other signs/symptoms** • Sweating/chills • Tachycardia • Hypertension • Nausea / vomiting • Muscle weakness • Abnormal movements • Skin-picking					

SUBSTANCE	Vitals, Signs & Symptoms				Complications	Treatment Recommendations
	Temp	HR	BP	Resp Rate		
Stimulants (WITHDRAWAL) **i.e., cocaine, crack, amphetamines, methamphetamines**	-	-	-	-	• Persistent psychiatric symptoms (due to stimulant use not specifically resulting from withdrawal) (49)	**Investigations & Monitoring** • Monitor mental status for complications such as psychosis, depression, and anxiety **Medications** • Refer to CHBC Chemical Restraint Algorithm for increased agitation • Symptomatic medications may be offered for aches, anxiety, and other symptoms • Consult addiction medicine • For more information on treating stimulant disorder refer to BCCSU Practice Update on Stimulant Use Disorder **Supportive Care** • Provide environmental supports and minimize stimuli as appropriate and informed by the CHBC Least Restraint Hierarchy of Safety and the patient's level of stability and monitoring requirements • Offer to connect with Indigenous cultural support if child/youth self-identifies as Indigenous
	Mental Status • Sedated, with normal vitals usually • Dysphoric mood • Agitation • Irritability • Depression **Other signs/symptoms** • Fatigue • Vivid / unpleasant dreams • Insomnia or hypersomnia • Increased appetite • Psychomotor retardation or agitation • Muscle aches					

SUBSTANCE	Vitals, Signs & Symptoms				Complications	Treatment Recommendations
	Temp	HR	BP	Resp Rate		
Nicotine (INTOXICATION)	↑	↑	↑	↑	Complications with large doses: • CVS: Cardiac dysrhythmias including atrial or ventricular fibrillation. Initial hypertension may progress to hypotension • Respiratory – may progress to dyspnea and respiratory depression • Neurologic – lethargy, drowsiness, muscle paralysis, stupor, coma, seizures • Musculoskeletal: fasciculations progressing to weakness, decreased deep tendon reflexes, paralysis	*Acute nicotine toxicity more likely to occur with accidental ingestion* (50). *Consult BC Drug and Poison Information Centre **24/7** at 1-800-567-8911.* **Investigations & Monitoring** • Look for and remove nicotine patches and discontinue nicotine replacement therapy • ECG: initially and repeat at 4 hours until normal **Medications** • **Antidote –** nil • Activated charcoal very rarely indicated. Discuss with toxicologist (14) • Following stabilization consider the possible impacts of withdrawal **Supportive Care** • Provide environmental supports and minimize stimuli as appropriate and informed by the CHBC Least Restraint Hierarchy of Safety and the patient's level of stability and monitoring requirements
	Mental Status • Agitation • Confusion • Anxiety **Other signs/symptoms** • Tremor • Diaphoresis • Nausea, vomiting, abdominal pain, and/or diarrhea • Tachycardia • Hypertension • Shortness of breath, wheeze, Bronchoconstriction • Bronchorrhea • Headache					

SUBSTANCE	Vitals, Signs & Symptoms				Complications	Treatment Recommendations
	Temp	HR	BP	Resp Rate		
Nicotine (WITHDRAWAL)	-	-	-	-		**Investigations & Monitoring** • Assess level of nicotine use (mg per day from cigarettes or vaping) • Encourage self-report of nicotine withdrawal (e.g., urge to smoke) and continue to monitor for withdrawal symptoms **Medications** • Provide nicotine replacement therapy (NRT) as appropriate **Supportive Care** • Consider providing brief advice about quitting. Refer to Quit Now • Offer to connect with Indigenous cultural support if child/youth self-identifies as Indigenous
	Mental Status • Low mood **Other signs/symptoms** • Irritability, anger, difficulty concentrating, restlessness • Increased appetite, nausea • Constipation • Insomnia, nightmares					

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<tr><td>MDMA (INTOXICATION)</td><td>↑</td><td>↑</td><td>↑</td><td>↑</td><td>• Hyperthermia
• Hyponatremia
• May result in serotonin syndrome
• Some case reports of cerebral edema and liver failure (8)
• Multi-organ failure</td><td>Investigations & Monitoring
• 12 lead ECG Continuous cardiac monitoring
• Monitor temperature and initiate cooling measures for hyperthermia
• Order point of care glucose
• Depending on clinical circumstances, consider the following investigations: serum pregnancy test, venous blood gas, lactate, urea and electrolytes/osmolality, anion gap, osmolal gap, creatinine, and creatine kinase, CBC, liver enzymes, blood cultures, testing for sexually transmitted and blood borne infections
• Consider intracranial imaging if any concern regarding vascular dissection

Medications
• Antidote – nil
• Benzodiazepines are recommended to treat restlessness, agitation, hypertension, cardiovascular symptoms, and/or serotonin toxicity
• Consult with BC Drug and Poison Information Centre (1-800-567-8911) for other treatment options regarding serotonin toxicity
• Fluid replacement may be necessary for water-electrolyte imbalances (9)
• Refer to CHBC Chemical Restraint Algorithm for increased agitation

Supportive Care
• Provide environmental supports and minimize stimuli as appropriate and informed by the CHBC Least Restraint Hierarchy of Safety and the patient's level of stability and monitoring requirements
• Offer to connect with Indigenous cultural support if child/youth self-identifies as Indigenous</td></tr>
<tr><td colspan="5">Mental Status
• Euphoria
• Changes to sensory perception

Other signs/symptoms
• Hyperthermia
• Hypertension
• Tachycardia
• Sweating
• Excessive thirst and fluid intake
• Hyponatremia
• Muscle tension
• Bruxism
• Insomnia</td></tr>
</table>

SUBSTANCE	Vitals, Signs & Symptoms				Complications	Treatment Recommendations
	Temp	HR	BP	Resp Rate		
Psychedelics (INTOXICATION)	↑	↑	↑	-	• Central & peripheral anti-cholinergic toxidrome • Persistent psychosis	**Investigations & Monitoring** • Assess and monitor for substance-induced psychosis. May need to consult psychiatry to rule out primary psychotic disorder from substance induced psychosis **Medications** • **Antidote –** nil • Benzodiazepines are recommended to treat restlessness, agitation, hypertension, cardiovascular symptoms, and/or serotonin toxicity in discussion with toxicologist • Refer to CHBC Chemical Restraint Algorithm for increased agitation **Supportive Care** • Provide environmental supports and minimize stimuli as appropriate and informed by the CHBC Least Restraint Hierarchy of Safety and the patient's level of stability and monitoring requirements • Offer to connect with Indigenous cultural support if child/youth self-identifies as Indigenous
	Mental Status • Euphoria • Hallucinations / Perceptual distortions • Synesthesia • Agitation • Delirium **Other signs/symptoms** • Nystagmus (rapid, repetitive eye movement) • Tachycardia • Dry flushed skin					

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<tr><td>Cannabinoids (INTOXICATION)
(51–53)</td><td>- / ↑</td><td>↑</td><td>↑</td><td>↑</td><td>• CNS depression
• Hyperthermia is an adverse effect of synthetic cannabinoids and cannot be corrected with antipyretics (8)
• Cannabinoid Hyperemesis Syndrome (CHS) should be considered if cyclic vomiting and abdominal pain is present in the absence of an alternative diagnosis (51,54) Severity of CHS varies from mild dehydration to dehydration related acute kidney injury (53)</td><td>Investigations & Monitoring
• If nausea, vomiting or concerns of CHS consider serum pregnancy test
• Assess and monitor for substance-induced psychosis. May need to consult psychiatry to rule out primary psychotic disorder from substance induced psychosis
• Treat hyperthermia with cooling measures

Medications
• Antidote – nil
• Acute anxiety may be treated with diazepam or lorazepam
• Oral or IV (crystalloid) rehydration may be considered based on severity and tolerance
• Antiemetics may be trialed for nausea
• Activated charcoal NOT recommended

Cannabinoid Hyperemesis Syndrome (CHS) (chronic use)
• IV fluids (crystalloid)
• Hot showers have evidence for treating CHS if available
• For persistent vomiting, consider trial of ondansetron, topical capsaicin, +/- other antiemetics
• If IV fluids and initial antiemetics are not successful, consider haloperidol in consultation with addiction medicine. Caution: high incidence of extrapyramidal symptoms or dystonic reactions in children and adolescents
• Consider admission to hospital
• Provide counselling about cannabis cessation as only long-term treatment for CHS

Supportive Care
• Provide environmental supports and minimize stimuli as appropriate and informed by the CHBC Least Restraint Hierarchy of Safety and the patient’s level of stability and monitoring requirements
• Offer to connect with Indigenous cultural support if child/youth self-identifies as Indigenous</td></tr>
<tr><td colspan="5">Mental Status
• Sedation
• Euphoria & disinhibition
• Anxiety
• Panic attacks
• Delirium
• Psychosis (chronic use)

Other signs/symptoms
• Myoclonic jerking
• Nausea
• Hypertension
• Worsening asthma symptoms
• Conjunctival injection
• Dry mouth
• Increased appetite
• Nystagmus (rapid, repetitive eye movement)
• Ataxia and slurred speech</td></tr>
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<tr><td rowspan="2">Cannabinoids (WITHDRAWAL)</td><td>-</td><td>- / ↑</td><td>- / ↑</td><td>-</td><td rowspan="2"></td><td rowspan="2">Investigations & Monitoring
• Monitor for worsening anxiety and dissociation and consider consultation with psychiatry

Medications
• Consider medication to help with sleep related disturbances
• Pharmacotherapy for withdrawal may be considered in consultation with addiction medicine
• Refer to CHBC Chemical Restraint Algorithm for increased agitation

Supportive Care
• Provide environmental supports and minimize stimuli as appropriate and informed by the CHBC Least Restraint Hierarchy of Safety and the patient's level of stability and monitoring requirements
• Offer to connect with Indigenous cultural support if child/youth self-identifies as Indigenous</td></tr>
<tr><td colspan="4">Mental Status
• Agitation and irritability
• Depressed Mood
• Anxiety

Other signs/symptoms
• Restlessness
• Cravings
• Decreased appetite
• Insomnia
• Night sweats and vivid dreams
• Sweating
• Tremors
• Headache
• Abdominal pain
• Fevers and chills</td></tr>
</table>

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<tr><th>Temp</th><th>HR</th><th>BP</th><th>Resp Rate</th></tr>
<tr><td rowspan="2">Inhalants (INTOXICATION)</td><td>-</td><td>↑</td><td>-</td><td>-</td><td rowspan="2">• Sustained 'high', encephalopathy
• Seizures
• Methemoglobinemia
• Cardiac arrhythmia & sudden sniffing death syndrome (SSDS)
• Tachydysrhythmias and QT prolongation
• Dyspnea from aspiration and pneumonitis
• Some inhalants may cause metabolic acidosis</td><td rowspan="2">Investigations & Monitoring
• ECG to evaluate dysrhythmias or QT prolongation (15)
• Chest x-ray if respiratory symptoms/signs
• Venous blood gas to check acid/base status, urea, and electrolytes

Medications
• Treatment may require correction of hypokalemia and maintenance of potassium and magnesium in the upper range of normal if prolonged QT (15)
• Inhalant use may increase susceptibility of the heart to catecholamines. Excess catecholamine exposure, such as epinephrine, may result in dysrhythmias (VT, VF) and cardiac arrest (55). Consultation with BC Drug and Poison Information Centre (1-800-567-8911) is recommended for prevention and management of cardiac dysrhythmias in the context of inhalant toxicity.
• Refer to CHBC Chemical Restraint Algorithm for increased agitation
• Limited evidence on physical or psychological dependence necessitating pharmacotherapy for withdrawal management

Supportive Care
• Provide environmental supports and minimize stimuli as appropriate and informed by the CHBC Least Restraint Hierarchy of Safety and the patient's level of stability and monitoring requirements
• Offer to connect with Indigenous cultural supports if child/youth self-identifies as Indigenous</td></tr>
<tr><td colspan="4">Mental Status
• Varying levels of CNS depression
• Hallucinations
• Impulsive behavior
• Disinhibition

Other signs/symptoms
• Slurred speech
• Headache
• Dizziness
• Ataxia
• Palpitations</td></tr>
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