

## Are Your Outdoor Learning Participants Under the Influence?

By Simon Priest

*Sally was an outdoor instructor sweeping a group of cross country skiers on the final day of a three-day winter camping trip. Following the group's ski tracks, she noticed one set of tracks heading off into the trees and assumed the participant was experiencing an early morning bio-break. She waited. After no appearance, she called out. After no answer, she went to investigate. She found a pair of skis and poles abandoned in the fresh snow on the other side of the trees. She saw John walking across an avalanche chute. He was unresponsive to her calls. She skied above his post-holed foot prints and noticed that a crack in the snow layers was running between holes. When she reached John on the far side of the chute, he was disoriented and not making sense. Unable to return across the avalanche chute, and unwilling to descend it, she helped him down a nearby rocky ridge to the waiting group below. As they climbed down, he remained confused and uncooperative to directions. Once safely away from the danger, John was examined for likely head injuries and found to be under the influence of illegal drugs.*

This true story (details changed to protect the players) is an isolated and rare 1970s event, but indicates a problem that is now growing rapidly in our profession. When you deliver an outdoor learning program for participants in an educational class, corporate team or tourist group, can you tell how many of them are under the influence of alcohol, cannabis, opioids or other drugs, even prescribed medications? This article overviews these five substance categories, examines their consumption among Canadians, and discusses impairment impacts for driving (essential activity of daily living) and outdoor learning (elective activity for quality of life). Both demand the complex interaction of operational, perceptual, cognitive, motor, and psychological competence. Practitioner recommendations flow from these analyses.

### Adventurous Outdoor Learning

A toxicological study of remote and inaccessible wilderness search and rescue operations in Arizona concluded that the blood of 100 fatality victims tested positive for alcohol (50%) and other drugs (12%). The grave proportional influence of substances presented a fatal concern for the self-guided participants (Goodman et al, 2001), who were not engaged in organized adventurous outdoor learning programs.

Adventurous outdoor learning involves activities wrought with risk, conflict, difficulty, natural beauty, and sometimes hardship. Engaging in these can positively change the way participants feel (recreation), think (education), behave (development) or resist help to transform (therapy). Practitioners working in this profession are called upon to ensure the safety of participants, while engaging them in perceived risky and uncertain activities. Practitioners must manage dangers, protect the natural environment from damage, teach participants how to plan trips and learn technical skills, supervise and coach participant performances, and transport them before, during, and after the trip (Priest & Gass, 2018). The consumption of alcohol, cannabis or other substances can negatively impact practitioners' work performance, ability to employ sound judgement, make decisions and solve problems. Use of drugs and alcohol can endanger the participant, negatively showcase the entire profession, and expose employers to enormous liabilities. A closer look at these potentially disruptive substances is warranted.

### Alcohol

*When they stumbled off the bus, some of them couldn't even stand up. They had been drinking for hours and we had to substitute table puzzles and cognitive problem solving activities for the ropes/challenge course.*

—Statement from the outdoor coordinator of a corporate team-building event as part of a 1990s sales incentive and reward program.

In Canada, the legal age for drinking alcohol (and consuming cannabis) is 19 in most provinces, but 18 in Alberta, Manitoba, and Quebec. Between April of 2020 and March of 2021 (early COVID-19 pandemic), per capita weekly alcohol sales to legal drinkers consisted of 3.9 beers (341 mL, 5% alcohol), 2.6 spirits (43 mL, 40% alcohol), 2.5 wines (142 mL, 12% alcohol), and 0.7 ciders and coolers (341 mL, 5% alcohol) for a weekly total of 9.7 standard drinks per Canadian (Statistics Canada, 2022). However, beer sales had decreased 2.3% from the previous year to an all time low since 1949, but were compensated by a 2.7% increase in the sales of spirits, ciders and coolers (Statistics Canada, 2022).

Compared to other nations in 2019, Canada came 52<sup>nd</sup> out of 185 countries for alcohol consumption, with Canadian males consuming three and a half times as much as Canadian females: 14 litres versus 4 litres per year (World Population Review, 2023). These numbers are about twice the global average for all nations and indicate Canada is not unusual in its alcohol use. The order of the USA (38<sup>th</sup>), Australia (35<sup>th</sup>), New Zealand (30<sup>th</sup>), UK (20<sup>th</sup>), France (13<sup>th</sup>), Ireland (5<sup>th</sup>) and Germany (3<sup>rd</sup>) puts this in perspective.

Driving under the influence of alcohol (DUIA) has long been a concern, with Canadians born outside Canada (immigrant citizens) less likely to engage in DUIA than Canadians born in Canada (Le et al, 2021). Something about our Canadian culture or condition seems to accept having 2+ drinks and then driving home. The risk of an alcohol-impaired crash doubles when driving with blood alcohol levels measured between 0.05% and 0.08%, which is just under the legal limit in Canada (Brubacher, 2011).

In Canada, raising the price of alcohol by adding additional taxes, during the 1990s, has been shown to reduce the public consumption of alcohol and, consequently, has also decreased alcohol-related motor vehicle

accidents and alcohol-related traffic offenses (Adrian et al, 2001). While these reductions were very pronounced in the 1990s, research observations since then show a less distinct decline in alcohol-related fatalities and a slight increase in the number of drivers reporting inebriation and choosing not to drive (Vanlaar et al, 2012). Nevertheless, alcohol-related driving accidents, injuries, and deaths are still a big problem in Canada with 10% of Canadians estimated to persistently drink and drive (Simpson, 2022).

Blood alcohol concentration (BAC) is measured by sampling and assaying blood or can be estimated by breathalyser technology. BAC is expressed in milligrams of alcohol per 100 millilitres of blood or as a percentage. In Canada, driving with a BAC above 80 mg/100 mL or 0.08% is a criminal offense. Drivers with lower BAC (0.05 – 0.08%) can face immediate roadside suspensions and other sanctions such as fines (maximum \$1,000) according to provincial or territorial traffic laws (Canada Safety Council, 2022).

The more alcohol one drinks, and as BAC increases, the more alcohol effects worsen and build on one another. Here is a rough guide for what to expect (Mothers Against Drunk Driving Canada, 2014).

- **0.02 < BAC < 0.05%:** Drinkers' muscles feel relaxed and possibly warmer (due to blood vessel dilation near the skin). Their moods will be slightly altered (usually happier) and they are now likely to make poor decisions. They may interact more socially and become quite talkative.
- **0.05 < BAC < 0.08% (under the legal limit):** Drinkers are more euphoric, but less alert. Their behaviours become exaggerated, voices become louder, and gesturing becomes overstated and uncoordinated. They lose control of small muscles and have trouble focusing their eyes (blurry vision). They have trouble thinking clearly, reasoning or remembering and they experience difficulty making decisions. Inhibitions are lowered, so they can be more easily manipulated by others, and

their emotions may be more intense (presenting uncontrollable crying or arguing).

- **0.08 < BAC < 0.10%** (over the legal limit): Drinkers lose coordination and have trouble walking or moving. Their balance, speech, hearing, and reaction times deteriorate. They have difficulty concentrating, remembering, perceiving, interpreting, deciding, and detecting dangers.
- **0.10 < BAC < 0.15%**: Drinkers lose self-control and the ability to react to events. Their speech is badly slurred and most senses are compromised. They will have trouble balancing to stand and will need help walking or moving, because they can no longer coordinate their limbs. They may become anxious, depressed, uneasy, and unable to think or explain what they want to do.
- **0.15 < BAC < 0.20%**: Dizzy and without control over their balance, drinkers will fall and may unknowingly injure themselves, since they are anesthetized from pain by the alcohol. They may vomit, unless having built a previous tolerance for alcohol, and can choke or aspirate due to a compromised gag reflex. They can become fatigued, confused, belligerent, and quick to anger.
- **0.20 < BAC < 0.30%**: Dazed and disoriented, drinkers will not recognize the time or place. They can also experience blackout episodes and not recall what went on at this point, thus making them susceptible to participating in fully uninhibited events (violence or unprotected sex).
- **0.30 < BAC < 0.40%**: Drinkers may experience an accelerated heart rate, irregular breathing, and compromised circulation of oxygen to the brain due to alcohol acting as a depressant of these functions. Drinkers may lose bladder control, be unable to move or roll over, exhibit pale discoloured (blue/grey) skin and not respond to touching or talking.

They will eventually become unconscious, lapse into a coma, and overdose from acute alcohol poisoning.

Alcohol can create a number of concerns for use in outdoor learning. Aside from interfering with senses (seeing, hearing, smelling, etc.), cognitive processes (speaking, concentrating, remembering, reasoning, perceiving, interpreting, deciding, detecting dangers, making decisions, solving problems, judging, etc.), and physical performance (balance, movement, reaction time, etc.) in outdoor learning, alcohol also increases the chances of becoming hypothermic. Since alcohol dilates blood vessels and makes people feel warm, they erroneously believe that ingesting alcohol in winter will warm them up. Alcohol has the opposite effect: it causes people to lose body heat rapidly and accelerates the hypothermic process.

This heat-shedding characteristic of alcohol has an additional concern when combined with water immersion. From 2013 to 2017, alcohol was present in 44% of fatal drownings for Canadians aged 15–64 years old, in 35% of boating deaths, and in 31% of swimming deaths (Life Saving Society, 2020).

### Cannabis

*We expected to have the snowy summit to ourselves, but found a group of six sharing several joints while we ate lunch. The skunky smell was disturbing. Luckily, they didn't follow us when we left the peak with dark clouds approaching. We have no idea when they departed or how they got home safely. — Outdoor club trip report, circa 2005.*

One in five Canadians over the age of 15 consume cannabis. Of this 21%, 13% were recreational users, 4% were medical users, and 5% used cannabis for medical and recreational purposes. Medical users provided reasons such as pain relief (75% of the elderly), mood alteration (63% of youth seeking to escape anxiety or depression), and sleeping problems (37% across all ages). Recreational users reported smoking or vaping (83%) as their primary means of consumption, while medical users reported smoking or

vaping (47%) balanced with ingesting or other methods (53%) of consumption (Health Canada, 2021).

Canada was the second country in the world (after Uruguay) to legalize cannabis on October 17, 2018. The Cannabis Act, or Bill C-45, was intended to bring increased quality, supply safety, and tax income, with decreased access for minors, illicit product, and criminal trafficking (Health Canada, 2018). However, despite these obvious potential benefits, the difficulty in measuring potency, intoxication screening, and fostering additional harms were not well considered by the rushed legislation.

Driving under the influence of cannabis (DUI) is a growing concern (Leadbeater et al, 2017). Cannabis has been determined to at least double the likelihood of a motor vehicle collision and almost triple the likelihood of a resulting fatality compared with non-impaired drivers (Asbridge et al, 2011). An American actuarial study found a 5.8% rise in traffic collision injuries and a 4.1% rise in fatal crashes after cannabis was legalized in five states: Colorado, Washington, Oregon, California, and Nevada (Farmer et al, 2022).

A quarter of respondents to the Canadian National Cannabis Survey (2021), between the ages of 15 and 24, reported being at risk of cannabis-related motor vehicle accidents by driving within two hours of their own consumption (14%) or being driven by someone who had consumed within two hours (12%). Three quarters of frequent users reported driving while intoxicated or riding with an impaired driver and 64% of males and 33% of females admitted to driving under the influence of cannabis within the last month (Leadbeater et al, 2017). A survey of cannabis-using Canadians, aged 16 through 30, found that they were less critical or concerned about cannabis-impaired driving compared to alcohol-impaired driving. As expected, the more cannabis consumed by respondents, the lower were their perceived risks of motor vehicle accidents and their willingness to drive impaired (17%) or ride with an impaired driver (40%). They were also less likely to intervene in the event of

impaired driving (Goodman et al, 2019).

In 2020, the federal government amended the Canadian criminal code by inserting standards for DUI according to THC ( $\Delta^9$ -tetrahydrocannabinol) levels: cannabis' active and impairing chemical. Drivers with a blood THC level of  $<2$  ng/mL are considered not impaired, while those between 2 and 5 ng/mL are impaired and subject to summary conviction and offence fines. Those with blood THC levels  $> 5$  ng/mL (and/or those with  $> 2.5$  and blood alcohol levels of 0.05%) may be subject to additional indictable incarceration (Parliament of Canada: The Senate, 2020). The interactive effect of cannabis and alcohol is known to be synergistic: greater combined than either alone without the other (Hartman et al, 1979).



Biochemically, cannabis contains over a hundred chemically active components collectively called cannabinoids. Two important ones are  $\Delta^9$ -tetrahydrocannabinol (THC) and cannabidiol (CBD). While THC is the main psychoactive component, CBD is currently classified as a herbal dietary supplement endorsed with so far unverified claims of healing or curative properties (Novella, 2020). CBD is thought to dampen the action of THC, when present simultaneously (Boggs et al, 2018). Like any chemical compound, both components of cannabis offer health benefits, but bring consequential side effects.

Cannabis is commonly used as treatment for pain, nausea, anorexia, insomnia, depression or anxiety, during palliative care, radiotherapy or chemotherapy, and for relief of symptoms from multiple sclerosis, spinal cord damage, epilepsy, glaucoma, asthma, migraines or rheumatoid arthritis (Health Canada, 2020). Cannabis smoke



contains many of the same toxins, irritants and carcinogens as found in tobacco smoke. Smoking or vaping cannabis can aggravate asthma, suppress the immune system, and damage the cardiovascular system (Canadian Centre on Substance Use and Addiction, 2023). Evidence supporting these claims is scant, and much more randomized clinical control trials research is needed.

The positive effects of CBD are believed to include relief from the difficulties associated with dystonia (muscle spasms or contractions), anxiety, insomnia, inflammatory skin and bowel diseases, Alzheimer's, and Parkinson's diseases. In some, CBD taken alone has negative side effects such as dry mouth, diarrhea, appetite loss, drowsiness, fatigue, and damage to liver or male reproduction (Health Canada, 2020).

The positive effects of THC last for up to 24 hours and include a high or stoned feeling of euphoria, a sense of well-being, a state of relaxation, and heightened senses. For some, additional negative effects may include confusion, fatigue, apprehension, and impaired memory, concentration, attention, intelligence, cognition, and reaction time. In a few, paranoia, delusions, and hallucinations can occur. Depending on the method of consumption, the same results as smoking tobacco are likely: damage to lungs or blood vessels, blood pressure drop (fainting), increased heart rate, and heart attack risk (Health Canada, 2022).

Frequent (daily) use of THC increases the irreversible chances of depression, anxiety disorders, suicide, psychosis and schizophrenia. The latter two are especially risky with high potency products, for those with a family history of these diseases, and in children who start consuming before the legal age of 18 or 19, since the prefrontal cortex of the brain is still developing until around the age of 25. Combining tobacco with cannabis can increase the psychoactive properties of THC and the risk of those conditions associated with frequent use, including a greater likelihood of addiction. Occasional use has short term effects such as the inability to safely drive or operate machinery and can

make remembering or learning new skills extremely difficult (Health Canada, 2022). This has obvious implications for outdoor activities.

Cannabis is typically absorbed through the lungs (smoked or vaped), skin (liquid topically applied) or stomach (ingested). Without standardized dosage units for THC and CBD, poisoning is more common with "easy to overeat" edible cannabis products than with inhaled ones (Freeman & Lorenzetti, 2019). Looking like candy in eye-catching and easy-open packages, edibles are attractive, tasty, and effortlessly accessible to younger children, who quickly over-consume these to the point of subsequent poisoning. After new legislation in Canada, frequency and severity of cannabis poisoning increased for children admitted to intensive care units, while intention to ingest and average age decreased (Cohen et al, 2021; Myran et al, 2022a). While this represented a 2.6 times increase in cannabis-related admissions overall once legal edible sales began in 2020, provinces allowing sales (Alberta, British Columbia, and Ontario) showed a 7.5 times increase in cannabis-related admissions for children under 10 years of age compared with one province (Quebec) that did not allow sales of edibles (Myran et al, 2022b). How many children smuggle edibles or other substances to their school, camp or outdoor learning field trips?

Since Canada is one of the few world nations to legalize cannabis, tourists are now travelling to our country in hopes of experiencing their first high. Thought by some to be a deviant pursuit (Ying et al, 2019), cannabis tourism is definitely growing (Liu & Stronczak, 2022) and remains poised to be a new growth sector that legitimizes and normalizes cannabis (Dupej & Nepal, 2021). Formed late in 2022, the non-profit Canadian Cannabis Tourism Alliance represents this sector of federal tourism. By partnering industry and academia, they offer "a diverse perspective on what a vibrant and viable cannabis tourism industry could and should look like" in Canada (Canadian Cannabis Tourism Alliance, 2023, p.1).

A Google search of “cannabis” and “outdoor activities” revealed dozens of home-grown articles on the best things to do outside when high or stoned. One such American article described the ten best strains of cannabis to use while engaged in extreme sports like mountain running, rock climbing, whitewater paddling, backcountry skiing, snowboarding, and downhill bike riding (Gruetzmacher, 2017). Canada’s use of cannabis is being promoted into all aspects of society including active outdoor adventures.

### Opioids

*While out for a family bicycle ride with my children on a hot summer day, we came across a cyclist who appeared to have overdosed. He was lying in a shallow ditch beside the bike path with his bicycle on top of him. I initially suspected an accidental bike crash. He was alone and semi-conscious, but non-responsive to my shaking and shouting. His lips and nails were grey in colour, his pupils constricted, his skin blue, and his breathing was slow and shallow. I administered naloxone nasal spray from my medical kit and by the time the ambulance arrived, he was breathing normally and well on his way to being fully conscious again. —Story related by a colleague/physician, circa 2020.*

Canada has been suffering through an opioid crisis with an average of about 11 deaths per day in 2017, where 94% of those overdoses were accidental and due to fentanyl-contaminated street drugs. Then, Canadians, aged 15 to 24, were the fastest-growing population requiring hospital care from opioid overdoses (Health Canada, 2019). Life expectancy for Canadians had been climbing steadily since 1995, but 2017 was the first year without any increase due to the accidental opioid overdoses among young adult men in British Columbia (Statistics Canada, 2019). Worsened by the COVID-19 pandemic, the average 2022 death rate almost doubled to 21 per day with 96% accidental overdoses. Three quarters of deaths were male, most (88%) were aged 20-59 years, involved fentanyl (81%), only a fifth (22%) were legally prescribed pharmaceuticals, and half (53%) mixed

in a second substance. Of the average 17 overdoses per day requiring hospital care in 2021, 70% were accidental. During that same year, a total of 30,638 Emergency Medical Service responses were made to opioid overdoses (Health Canada, 2023).

In 2018, opioid-related fatalities surpassed motor vehicle mortality and accidental premature death (Fischer et al, 2018). That same year, 12.7% of Canada’s household population (non-homeless) over 15 years old, reported the use of opioids during the prior year and about 10% of these reported getting into trouble with opioid use, due to reasons such as unmet emotional or mental health needs, unattached or living alone, and previous substance abuse history (Carrière et al, 2022). In 2019, this figure increased to 14% or 4.4 million Canadians with 6% stating troubled use (Canadian Alcohol and Drugs Survey, 2021).

Driving under the influence of opioids (DUIO) is fast becoming a concern due to rising opioid abuse. Prior to the current opioid epidemic, few concerns existed over driving by “patients under stable long-term opioid therapy for nonmalignant pain” (Kress & Kraft, 2004, p. 143). They were encouraged to carefully decide for themselves in conjunction with their physician and pharmacist recommendations. However, two decades later, from 2017 to 2019, for 66 cases of impaired driving-related accident investigations in Ontario, the blood concentrations of carfentanil (a highly potent and dangerous opioid with no medical use) ranged from 0.04 to 2.1 ng/mL (Wallage et al, 2022). These drivers in Ontario, where 3.1% of adults have received DIUO citations, exhibited a range of behaviours such as actions that concerned observers, becoming unconscious, and requiring overdose treatment (Wickens et al, 2018). A survey of senior high school students in Atlantic Canada found 4.3% to have received a recent DUIO charge and 14% of those that were prescription opioid users also received a DUIO (Asbridge et al, 2015).

People initially take opioids for pain relief, but enjoy the euphoric high and inability



to feel pain that comes along with the initial relief. As a result of the need to deaden physical and mental pain, or just feel good for longer, opioid use rapidly becomes addictive in many people. Short-term side effects can include: drowsiness, constipation, impotence (men), nausea, vomiting, difficulty breathing, headaches, dizziness and confusion. Long-term side effects can include: tolerance, dependence, liver damage, infertility (women), and life-threatening withdrawal symptoms in babies born to mothers taking opioids. Eventual substance use

disorder may result, where terminating use brings withdrawal symptoms such as chills, sweats, nausea, diarrhea, insomnia, body or headaches, nervousness, agitation, and irritability.

Inevitably a deadly overdose can result. Even stopping use for a few days can reduce tolerance and so starting again with the same dosage can trigger an overdose. Opioids exert depressive influence over the respiratory centres of the brain and so an overdose can suppress breathing. When breathing slows or weakens the heart and brain are deprived of oxygen, leading to unconsciousness and death. Other symptoms and signs of opioid overdose can include: difficulty walking talking or staying awake, drowsiness, dizziness, confusion, very small eye pupils, blue or grey lips or nails, cold or clammy skin, and making choking, gurgling or snoring sounds with failure to wake up when shouted at or shaken.

If you suspect an overdose, call for emergency assistance (911), give naloxone (available without prescription, safe for all ages), monitor vital signs, especially breathing, and perform AR or CPR, when necessary. Given by nose spray or intramuscular injection, naloxone acts fast to reverse the effect of opioids, but it only lasts for 20-90 minutes. When opioid blood concentration is high, then a second treatment is needed as potency will wear off before emergency services arrive to remote locations.

## Other Drugs

*I remember conducting adventure therapy with a corporate CEO who had a drug habit. He was a big risk taker, drove racing cars, flew planes, gambled, and tried all kinds of narcotics and hallucinogens. We were working on substituting risk taking adventures and discussing the holes he was trying to fill with these risky endeavours, when he died piloting his aircraft under the influence. —Story related by a peer therapist, circa 2000.*

Driving under the influence of drugs (DUID) is globally estimated at 5–35% and this only considers drivers using prescribed medications and does not include those using illicit or illegal drugs that would raise the percentage of DUID (Verster et al, 2009). For example, users of prescription Z-medications, such as zolpidem, zopiclone, and zaleplon (valuable sleep inducers), have double the risk of motor vehicle collisions compared with non Z-drug users (Gunja, 2013).

Conducted every two years, the Canadian Alcohol and Drugs Survey (CADS) is a measure of self-reported use by Canadians over the age of 15. For example, while it shows a remarkable 15 percentage point decrease in alcohol consumption for teenagers from 2015 to 2019, it also shows a comparable 15 percentage point increase in cannabis consumption for young adults during that same four year period. The overall use of psychoactive pharmaceuticals (prescribed pain relievers, stimulants, sedatives, etc.) in 2019 by Canadians was steady at 23% of the population (7 million people, 60% female). Of these users prescribed these drugs, 7% or 493,000 reported problematic use for the purposes of improving mood, getting high, feeling numb, coping with situational stress and dealing with life's difficulties. Stimulant use was 2% (660,000) with 37% of these (244,000) noting problematic use, while 11% (3.3 million) used sedatives and 3% of these (85,000) were problematic (Canadian Alcohol and Drugs Survey, 2021).

Separate from opioids, the use of at least one illicit or illegal drug was 3% or 1.1 million Canadians. They further reported use of

cocaine (2% or 605,000), hallucinogens (2% or 587,000), ecstasy (1% or 353,000), and methamphetamines (0.5% or 142,000). At least one harmful effect, such as on physical or mental health, friendships, social or home life, finances, marriage, work, study, job opportunities, and legal, learning or housing problems, were noted by 5% or 1.1 million Canadians. Reported harm was higher among 17% or 1 million Canadians who also disclosed the use of cannabis, any use of illegal drugs, or problematic use of psychoactive pharmaceuticals (Canadian Alcohol and Drugs Survey, 2021).

Effects of other illicit drugs vary according to the drug. However, some generalizations are possible based on four categories of illicit drugs grouped according to major effects (Houck & Seigel, 2015).

1. Stimulants increase the activity of the nervous system, activate the sympathetic “fight or flight” response, thus exciting the body with pleasure and vigour. Common stimulants (uppers) include amphetamines, caffeine, cocaine (coke/crack), MDMA (ecstasy/molly), methamphetamine (meth/speed), and nicotine.
2. Depressants work in opposition to stimulation by lowering electrical impulse transmission in the nervous system and generally calming body arousal through parasympathetic “rest and digest” responses that can lead to euphoric feelings. Common depressants (downers) include alcohol (booze), barbiturates, benzodiazepines (benzos/valium/xanax/sleeping pills), and cannabis (weed/grass/pot).
3. Narcotics generally reduce or alleviate pain symptoms (analgesic) by numbing the nervous system or paralyzing the body. Common narcotics (not meant as a synonym for controlled, scheduled, or illegal drugs) include carfentanil, codeine, demerol (pethidine), fentanyl, heroin, morphine, laudanum (alcohol and opiates), opium, and other opioids.

4. Hallucinogens alter states of consciousness and change feeling, thinking, behaving, and perceiving reality, by interfering with normal nerve transmissions. Common hallucinogens (psychedelic or dissociative) include LSD (lysergic acid diethylamide), mescaline (peyote), PCP (phenylcyclohexyl piperidine/angel dust), and psilocybin found in magic mushrooms.

All of these can be addictive in some personalities and users may suffer withdrawal symptoms leading to needing another dose to alleviate the accompanying “crash” of cessation. The body and brain can build a tolerance to these drugs and so greater doses are needed to get the same results. Combining two or more drugs is a common tactic for suicides (alcohol and sleeping pills), cause of overdoses (opioids and methamphetamines) or reason for motor vehicle accidents (cannabis and alcohol).

Humans under the influence of a drug may exhibit a wide range of signs. Stimulants users appear highly alert, aware or awake, without the need to sleep, eat or drink. They are over-aroused, often with elevated heart rates and blood pressures. They are motivated to produce results and endure great hardships.

Depressants cause users to appear relaxed, calm or even sleepy. Their speech may be slurred, their eye movements can seem uncoordinated, and their muscle movements might be uncontrollable. They can display cognitive confusion, joyful euphoria, or detachment from their surroundings and immediate realities. Decreases in respiratory tempo, heart rate, and blood pressure will likely be noticeable.

Narcotics users appear dulled, drowsy or depressed in some cases. In others, they may seem euphoric. Early narcotic usage can bring nausea and vomiting, while later use may develop pain insensitivity, leading to greater physical injuries from emboldened accidents. However, the biggest concern with narcotics is a reduction in respiration, leading to death from lack of oxygen to the brain or other organs. Users may easily become surprisingly



breathless when performing simple exercise.

Hallucinogens cause users to see or hear things that aren't really there (visual/auditory alterations or hallucinations) and resultantly change their mood, perceptions, feelings, thoughts, and behaviors, perhaps operating under a sense of delusion. They report mystical experiences, spiritual connectivity, and dream-like circumstances that indicate their detachment from the reality at that moment or disassociation from their minds or bodies. Unchecked, this can lead to a delirious state with extreme confusion and uncontrollable actions. For long-term use, hallucinogen-induced psychosis may transition to schizophrenia (Murrie et al, 2020).

Any drugs that impact the central nervous system are likely to interact with alcohol and cannabis. This is especially true for depressants (same category as alcohol and cannabis). Avoid mixing alcohol and/or cannabis with sleeping pills, tranquilizers, muscle relaxants, benzodiazepines, and certain kinds of allergy, cold, pain, or anti-seizure medications as these in combination will worsen depressive actions.

Studies have shown a higher risk of drug overdose and death due to cold (Goedel et al, 2019) and hot (Henderson et al, 2022) temperature extremes, such as those conditions found in outdoor activities. Between 2008 and 2017, 13% of boating fatalities had evidence of drug use, while 20% of victims had drugs in their bloodstream during post-mortem toxicological analysis (Drowning Prevention Research Centre, 2021). Although no additional research could be found on drugs and outdoor activities, any consumption of these is clearly contraindicated in outdoor learning, despite adventure therapy having long been proven to be an efficacious treatment for substance abuse disorder (Russell et al, 2020).

### Personal Medications

Effective outdoor programs normally collect medical histories along with legal contracts (waivers, risk assumptions, etc.) from participants prior to their involvement. The

confidential medical history form should include a question about (and ample space for listing) medications with frequencies and doses being taken by a participant. Scanning these forms before a program and learning the treatment and side effects of these disclosed medications should help your program to prepare for possible problems. As noted earlier, medication interactions with other drugs, cannabis, and alcohol can and frequently does result in health complications. One example is possible exaggeration of high altitude sickness.

### Recommendations

*We used to stop for a beer or two on the drive home! You mean we can't even do that anymore? Where's the fun in going outdoors now!?* —Students who once drove each other in small group minivans to and from trailheads for university trips in the 1980s.

The party attitude of the past has diminished in the educational sector of outdoor learning and was never part of the therapeutic sector. However, it may still permeate some of the recreational and commercial tourism operations. Free spirits, attracted to working outdoors, brought with them a comfort level with alcohol, cannabis, and other drugs. After all, with a group of adult paying clients, why not allow them to use substances as they like? The difficulty comes in knowing where to draw the line.

Consider white water paddling companies who feel the need to secure a liquor license just to keep pace with their competitors. While some might restrict alcohol consumption to campsites and other off-river locations, another might allow drinking on the calmer portions of the river. It's only a matter of time before someone says "put your drink away for the rapids, so it doesn't dilute with water, but keep it handy for everywhere else!" What about wine, beer, and cannabis sampling tours by bicycle or skis?

Based on information in this article, practitioners are fooling ourselves if we think all outdoor learning participants are not under any influence. We can expect similar percentages of Canadians driving under these

influences to show up for our programs. Other than instituting rules, what can we do about this?

First, the author recommends no use of these potentially impairing substances in programs for staff or participants. If you are considering consuming legal substances like alcohol or cannabis around the campfire or on the road while travelling, do not do so and definitely discourage others from doing so. In the event of accidents, you can be sued and your insurance provider might try to wriggle out of your policy coverage. If in doubt about this point, please discuss it with your lawyer and insurance broker.

Second, staff consumption should follow the guidelines established by other professions. Like outdoor practitioners, the Canadian Armed Forces (CAF) are also called on to do dangerous and serious work, which can lead to the deaths of their participants. Following legalization, the CAF warranted that service members may use cannabis in accordance with the law, but must stop using it eight hours before duty, 24 hours before operating a weapon, vehicle, or other machine, and a month before conducting specialized activities like high altitude parachuting or deep underwater diving (Paperny, 2018). Also prohibited internationally, its use came with the same physical health concerns as smoking tobacco. Other than criminal misconduct concerns, CAF policies regarding alcohol consumption were conspicuously absent.

Alternatively, the Royal Canadian Mounted Police (RCMP) dictated that their officers must not use non-medical cannabis within 28 days of reporting for operational work in (safety-sensitive) public settings. This waiting period effectively prohibits any cannabis use at all, but may change as more evidence is researched over time (Burke, 2018). The policy on alcohol consumption is less stringent, since no alcohol clearance duration is mentioned. "All RCMP employees must be fit for duty when reporting for work, which includes not being impaired by alcohol or drugs. The policy reflects the duty of care the RCMP has for its members and the communities it serves" (Royal Canadian Mounted Police, 2018, p.1).

Employment and Social Development Canada (2022) inconclusively discusses impairment in the workplace. Other than avoiding the obvious dangers of going to work while impaired, their policy states employees and their employer have a role to play in workplace health and safety. They encourage employees to voluntarily disclose their impairments and report co-workers who appear impaired. Similarly, employers have a responsibility to develop and enforce policies regarding impairment. Whichever approach you choose to follow for your staff, be sure to read the Occupational Health and Safety statutes for your province and the nation, before checking further with your lawyer. To begin, Anderson (n.d.) offers a series of six things employers should know about cannabis at work.

Third, if participants are discovered to be using potentially impairing substances (and you have clearly established a rule that speaks against such use), then you have clear evidence of an infraction and the expressed consequences of that rule should be applied. Participant consequences may range from loss of privileges to program expulsion without a refund (depending on your rules). Remember, stronger consequences usually ensure greater compliance and a rule without consequences is merely a weak guideline. Again, confer with your lawyer when drafting such rules and consequences.

Fourth, and much trickier, if you suspect someone is under the influence, but have no clear evidence of use or impairment, and contentious drug testing is likely not permissible, then to avoid a provincial or federal complaint, alternatives should be considered. "The Canadian Human Rights Commission (CHRC) recommends that employers, wherever possible, rely on observation, supervision and frequent face-to-face conversations as a way to recognize impairment" (Employment and Social Development Canada, 2022, p. 1). For participants, a similar approach seems prudent, but be certain to consult your lawyer.

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*After his tenure as a university professor of adventurous and environmental outdoor learning in Ontario, Simon Priest was a dean, provost, vice-chancellor, senior vice president, president, commissioner, and advisor to a Minister of Education. He has received numerous awards and accepted over 30 visiting scholar positions around the world in outdoor learning.*