

MHC Toolbox: Drugs of abuse

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ABSTRACT

In the past year, several questions have been posed on the CPNP Email Discussion List regarding bath salts and spice. Designer drugs, such as bath salts or spice, are agents that have pharmacologic effects similar to controlled substances, but are not under legal control since they are chemically distinct from controlled substances.¹ These drugs may be marketed as a “legal high”. The dilemma in controlling designer drugs based on their structural similarity stems from the fact that these designer drugs may also be structurally similar to approved medications for depression or anaphylaxis.¹ Designer drugs can also avoid control by being placed in packaging labeled “not for human consumption”, thereby failing to meet all attributes needed to be considered a controlled substance.¹ The example previously mentioned, bath salts, have no legitimate use for bathing and are meant to be abused and the same chemical has also been sold as plant food. This month’s MHC Toolbox of Drugs of Abuse, though not all-inclusive, is based on information found through government and drug agency organizations and is meant to provide insight into the effects of many illicit substances, including bath salts and spice.

The MHC Toolbox begins on the next page.

REFERENCES

1. Morbidity and Mortality Weekly Report. Emergency department visits after use of a drug sold as “bath salts” – Michigan, November 13, 2010 – March 31, 2011. MMWR. May 2011;60(19):624-627.

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THE MENTAL HEALTH CLINICIAN TOOLBOX: DRUGS OF ABUSE

Substance	General Information	Chemical/ Medical Name	Commercial/ Street Names	Administration Routes	Mechanism of Action	Pharmacokinetics/ Pharmacology	Desired Effects	Adverse effects		Potential Harm	Abuse/Tolerance Potential	Detection Methods
								Short-Term	Long-Term			
2C-B	Has been promoted as a sexual enhancement drug	4-Bromo-2,5-Dimethoxyphenethylamine	2C-B, Nexus, 2s, Toonies, Bromo, Spectrum, Venus, Performax, Synergy, Eve, Erox, Zenith, Cloud Nine, Utopia, Cee-Beetje, Alterburner Bromo, BDMPEA, MTF	Oral, intranasal	High affinity for central serotonin receptors	Onset: 20-30 mins Peak: 1.5-2 hrs Duration: up to 8 hours Alternatively described: Onset: 20-90 mins Coming up: 15-30 mins Plateau: 2-3 hrs Coming down: 2 hrs Aftereffects: 2-4 hrs	Passive, relaxed, awareness of integration of sensory perception with emotional states, euphoria, increased body awareness and enhanced receptiveness of visual, auditory, olfactory, tactile sensation; Stimulant-like effect at lower doses vs. LSD-like hallucinations at higher doses	<ul style="list-style-type: none"> Pain in nasal passageways (snoring) Nausea Muscle clenching Anxiety Claustrophobia GI upset 	No information	Fearful hallucinations or morbid delusions	Schedule I	NIDA-5 and normal drug screens for hallucinogens do not detect 2C-B. Although related to amphetamines, it is unknown what dose might trigger positive amphetamine result Limited information, testing may be available through specialty labs (e.g. NMSlab.com)
2C-I		4-Iodo-2,5-dimethoxyphenethylamine	2C-I, I	Oral, intranasal	High affinity for central serotonin receptors; selectively binds to 5-HT receptor system	Onset: 40 mins Peak: ~ 2 hrs Duration: up to 8 hrs	Hallucinogenic effects: hallucinations, visual distortions, ecstasy-like empathy Effects similar to LSD and ecstasy	No information	No information	No information	Not scheduled; however may be considered an analogue of 2C-B (Schedule I), therefore may be treated as a Schedule I in some cases.	Amphetamine testing not expected to detect 2C-I Limited information, testing may be available through specialty labs (e.g. NMSlab.com)
2C-T-7	Structurally related to mescaline (therefore similar effects)	2,5-Dimethoxy-4-(n)-propylthiophenethylamine (phenethylamine class)	2C-T-7, Blue Mystic, T7, Beautiful, Tripstay, Tweety-Bird Mescaline, Lucky 7, PT-DM-PEA, Red Raspberry, Tripstasy, 7 th Heaven, 7-Up	Oral, intranasal, rectal	No information	Onset: 1-2.5 hrs (oral) 5-15 mins (intranasal) Duration: 5-7 hrs (oral) 2-4 hrs (intranasal) Other resource: Onset: 3hr (oral) 30 min (intranasal) Duration: 8-15 hr (oral) 4-8 hr (intranasal)	Hallucinogenic effects, visual hallucination, mood lifting, sense of wellbeing, emotionality, volatility, increased appreciation of music, psychedelic ideation	<ul style="list-style-type: none"> Hypertension Blurred vision Dehydration Dilated pupils Headaches Arrhythmia Jaw clenching Nausea/vomiting Emotional distress Insomnia Irritability Loss of memory Nervousness Restlessness Tension Impaired judgment 	No information	Convulsions and death reported	Schedule I	Limited information, testing may be available through specialty labs (e.g. NMSlab.com)
5-MeO-DIPT	Similar to psilocybin	5-methoxy-N,N-disopropyltryptamine (tryptamine class)	Foxy, Foxy Methoxy	Oral, smoking, intranasal	Tryptamine derivative	Onset: 20-30 mins Peak: 1-1.5 hrs Duration: 3-6 hrs	Produces effects similar to LSD Emotional enhancement, talkativeness, behavioral disinhibition, relaxation; altered sensory perception and judgment	<ul style="list-style-type: none"> Mild nausea Diarrhea Muscular hyperreflexia Dilation of pupils Visual and/or auditory hallucinations or disturbances 	No information	No information	Temporarily Schedule I	No information
Amphetamines	Prescription drugs	Varies by specific amphetamine	Bennies, Black Beauties, Crank, Ice, Speed, Uppers, Crosses, Hearts, LA Turnaround, Truck Drivers	Oral, injection, smoking, intranasal	Stimulate release of norepinephrine, dopamine, and/or serotonin depending on dosage and agent	Varies by specific amphetamine, consult drug reference	Effects similar to cocaine with slower onset and longer duration	<ul style="list-style-type: none"> Hypertension Tachycardia Insomnia Loss of appetite Physical exhaustion 	Chronic abuse produces psychosis resembling schizophrenia, characterized by paranoia, skin-picking, preoccupation with one's own thoughts, and auditory/visual hallucinations. Violent, erratic behavior may be seen by chronic users.	Overdose effects: agitation, hyperthermia, hallucinations, convulsions, possible death.	Schedule II	Yes
AMT	Similar to LSD, psilocybin Studied in the 1960s as a possible antidepressant but was concluded a toxic substance that produces psychosis	Alpha-methyltryptamine (tryptamine class)	Spirals, IT-290, 3-IT, 3-(2-aminopropyl)indole	Oral, smoking, intranasal	Tryptamine derivative: binds with moderate affinity to serotonin (5-HT1 and 5-HT2) receptors; is a potent inhibitor of monoamine oxidase (especially MAO-A)	Onset: 3-4 hrs Duration: 12-24 hrs (Extended duration: 2 days)	Hallucinations, reduce inhibition	<ul style="list-style-type: none"> Uncomfortable feeling Muscle tension Nervous tension Irritability Restlessness Unsettled feeling in stomach Inability to relax or sleep Altered sensory perception Hypertension Tachycardia Dilated pupils Impaired coordination Emotional distress 	No information	No information	Schedule I	Limited information, testing may be available through specialty labs (e.g. NMSlab.com)
Barbiturates	Prescription drugs Depressant, short-acting and intermediate are preferred	Various	Barbs, Block Busters, Christmas Trees, Goof Balls, Pinks, Red Devils, Reds & Blues, Yellow Jackets	Oral, injection	Promote binding of GABA to receptor thereby increasing time duration of chloride channel opening, may reduce effects of glutamate	Varies according to barbiturate	Reduce anxiety, decrease inhibitions, treat unwanted side effects of illicit drugs, feeling of well-being	<ul style="list-style-type: none"> Impaired memory, judgment, coordination Irritability Paranoia Suicidal ideation 	Limited information	Respiratory depression, weak/rapid pulse, coma, possible death in overdose	Schedule II, III, IV; Tolerance develops quickly	Yes

THE MENTAL HEALTH CLINICIAN TOOLBOX: DRUGS OF ABUSE (CONTINUED)

Substance	General Information	Chemical/ Medical Name	Commercial/ Street Names	Administration Routes	Mechanism of Action	Pharmacokinetics/ Pharmacology	Desired Effects	Adverse effects	Potential Harm	Abuse/Tolerance Potential	Detection Methods	
"Bath Salts" See "MDPV" and "mephedrone"	Cathinone derivatives act as CNS stimulants Usually marketed with warning "Not intended for human consumption"	Generally includes MDPV and/or mephedrone (See "MDPV" and "mephedrone")	Bliss, Blue Silk, Cloud Nine, Drone, Energy-1, Ivory Wave, Lunar Wave, Meow Meow, Ocean Burst, Pure Ivory, Purple Wave, Red Dove, Snow Leopard, Stardust, Vanilla Sky, White Dove, White Knight, White Lightning, White Rush, Scarface, Hurricane Charlie	Oral, intranasal, smoking, injection	Promotes release of norepinephrine, serotonin, and dopamine and inhibits reuptake	Onset: 10-20 mins after oral use Peak: 45-60 mins "Come-down": 60-120 mins Onset: few minutes for nasal insufflations Peak: 30 mins Duration: ~2-3 hours IV high duration: ~10-15 mins Overall duration: ~30 mins	Impaired perception of reality, euphoria, unlimited energy, talkativeness, time distortions	<ul style="list-style-type: none"> Agitation Insomnia Irritability Dizziness Depression Paranoia Delusions Suicidal thoughts Seizures Panic attacks Decreased ability to think clearly Sweating Palpitations Nausea Headache Cold blue fingers Tachycardia 	<ul style="list-style-type: none"> Nose-bleeds/nasal irritation secondary to insufflations Shrunken genitals (men only) 	<p>Can cause tachycardia (may lead to heart attack, stroke), chest pains, nosebleeds</p> <p>Can be fatal</p> <p>Acute toxicity reports: CNS hyperstimulation, serotonin syndrome, cardiovascular issues</p>	Not scheduled: Users have reported development of tolerance with prolonged use	Limited information, may be available through specialty labs (e.g. NMSlab.com)
Benzodiazepines	Prescription drug	Various	Benzos, Downers, Candy, Sleeping Pills, Tranks	Oral, intranasal, injection	Allosteric interaction with GABA receptors, potentiating effects of GABA	Varies depending on benzodiazepine	Sedation, Reduced anxiety, feeling of well-being, lowered inhibitions	<ul style="list-style-type: none"> Amnesia Hostility Irritability Vivid/disturbing dreams Confusion Hypotension Bradycardia Respiratory depression Impaired coordination 	Limited information	Can be fatal with additive CNS depressants, respiratory depression	Schedule IV	Yes
Bromo-Dragonfly	Potent hallucinogenic drug active in low doses (200 mcg); according to users, effects similar to LSD although longer-lasting Typically sold online in form of blotter paper	1-(8-bromobenzo[1,2-b:4,5-b']difuran-4-yl)-2-aminopropane	B-fly, DOB-dragonfly, dragonfly, BrDF, 3C-Bromo-Dragonfly, ABDF, FLY	Oral	Serotonin agonist, Vasoconstrictive properties: believed to be caused by prolonged stimulation of α_1 adrenergic receptors in limbs; activation of local serotonin receptors in blood vessels may contribute to vasoconstriction	Onset: can be delayed up to 6 hours Duration: 1-3 days	Psychedelic effects similar to LSD	<ul style="list-style-type: none"> Nausea/vomiting Headache Hypertension Tachycardia Lung collapse GI disturbances Muscle tension Tremor Body temperature fluctuations Anxiety Panic attacks Arrhythmia Heart murmurs Convulsion Paranoia Hallucinations Flashbacks Memory disturbances Confusion Depersonification Derealization Sweating "Delirium-like trip" 	No information	Toxic and risk of overdose is high: fatalities have been reported	Not scheduled	Limited information, testing may be available through specialty labs (e.g. NMSlab.com)
Cannabis (Cannabis sativa L.)	3 drugs come from cannabis: marijuana, hashish, and hashish oil Hashish is THC-rich resinous material of the cannabis plant. It is collected, dried, and compressed in balls, cakes, or cookie-like sheets.	THC (delta-9-tetrahydrocannabinol)	Blubbers, Boom, Gangster, Ganja, Grass, Hashish/Chara, Herb, Pot, Reefer, Weed	Smoking	Stimulation of cannabinoid receptors in brain to influence pleasure, memory, thought, concentration, sensory/time perception, coordinated movement	Onset: 10-30 mins (smoking) Duration: 2 hrs (range 3-5 hrs) (smoking)	Euphoria, merriment, disinhibition, relaxation, increased sociability, talkativeness, enhanced sensory perception	<ul style="list-style-type: none"> Memory/learning problems Distorted perception Difficulty thinking and problem-solving Loss of coordination Sedation Blood-shot eyes Tachycardia Coughing from lung irritation Increased appetite Hypotension 	<ul style="list-style-type: none"> "Amotivational Syndrome": apathy, impaired judgment, memory, concentration; loss of motivation, ambition, interest in pursuit of personal goals Bronchitis, emphysema, bronchial asthma Immune system suppression Increased risk of cancer Withdrawal from long-term, high-dose use: headache, shakiness, sweating, stomach upset, restlessness, irritability, sleep difficulties, decreased appetite Increased risk of depression, earlier onset schizophrenia 	High doses can result in mental confusion, panic reactions, and hallucinations. No reported deaths by overdose	Schedule I	Yes

THE MENTAL HEALTH CLINICIAN TOOLBOX: DRUGS OF ABUSE (CONTINUED)

Substance	General Information	Chemical/ Medical Name	Commercial/ Street Names	Administration Routes	Mechanism of Action	Pharmacokinetics/ Pharmacology	Desired Effects	Adverse effects	Potential Harm	Abuse/Tolerance Potential	Detection Methods	
Cocaine	When cocaine is combined with alcohol, cocaethylene is produced which may intensify cocaine's euphoric effects	benzoylmethyl ecgonine or cocaine	Coca, Coke, Crack, Flake, Snow, Soda Cot, C, Flake, Blow, Bump, Charlie, Rock, Toot	Powdered: intranasal, injection Cocaine base (crack): smoking All mucous membranes absorb cocaine	Strong CNS stimulant that increases dopamine levels by preventing dopamine reuptake; increases dopamine in the nucleus accumbens; also constricts blood vessels Almost completely metabolized	Rapid-onset (secs) following smoking or IV injection Slower onset with snorting Duration: Snorting – 15-30 mins Smoking – 5-10 mins Intensity and duration of effects depends on the route of administration: faster it is absorbed through bloodstream and delivered to brain, the more intense the high. Injection or smoking produces a quicker, stronger high than snorting. Faster absorption usually means shorter duration.	Increased alertness, excitation, euphoria, energetic, talkative; may temporarily decrease need for food or sleep	<ul style="list-style-type: none"> • Restlessness • Irritability • Anxiety • Tachycardia • Hypertension • Hyperthermia • Headaches • Dilated pupils • Insomnia • Loss of appetite • Crash following high: mental/physical exhaustion, sleep, depression lasting several days • Large amounts of cocaine may lead to erratic/violent behavior 	<ul style="list-style-type: none"> • Prolonged, high-dose use can lead to paranoia • Cardiac arrhythmia • Ischemic heart conditions • Sudden cardiac arrest • Convulsions • Strokes • Death • Associated with chronic inhaled use: unique respiratory syndrome • Associated with chronic snorting: erosion of upper nasal cavity • Loss of sense of smell or nosebleeds, swallowing problems, hoarseness, nasal congestion (users who snort) • Severe bowel gangrene due to ingestion and subsequent reduced blood flow • Increased risk of contracting HIV/AIDS or other blood-borne diseases 	Overdose: agitation, hyperthermia, hallucinations, convulsions, possible death Cocaine-related deaths usually due to cardiac arrest or seizure followed by respiratory arrest. Cocaethylene is associated with a greater risk of sudden death than cocaine alone.	Schedule II; tolerance develops rapidly	Yes
Dextromethorphan (DXM)	Produces effects similar to ketamine and PCP in high doses Sold over-the-counter as cough suppressant At doses 4oz or more (~350 mg), produces dissociative effects similar to PCP or ketamine Dissociative anesthetic	d-3-methoxy-N-methyl-morphinan	CCC, Dex, DXM, Poor Man's PCP, Robo, Rojo, Skittles, Triple C, Velvet	Oral	Can alter distribution of glutamate throughout the brain; potent blockers of NMDA receptor At high doses, pharmacology is similar to PCP and ketamine	Duration: about 6 hours	Abused in high doses to experience euphoria, visual, and auditory hallucinations, out-of-body sensations	<ul style="list-style-type: none"> • Confusion • Inappropriate laughter • Agitation • Paranoia • Hallucinations • Sensory changes (e.g. feeling of floating, changes in hearing/touch) 	<ul style="list-style-type: none"> • Long-term use associated with severe psychological dependence 	DXM intoxication: over-excitability or lethargy, loss of coordination, slurred speech, sweating, hypertension, involuntary spasmodic movement of eyeballs DXM taken with antidepressants can be life-threatening 5-10% of Caucasians are poor DXM metabolizers which increases risk of overdose and death	Not scheduled May be added to the Controlled Substances Act in the future if warranted	May cause false positive test on some urine immunoassays for PCP
Gamma-Hydroxybutyric acid (GHB) or sodium oxybate	CNS depressant approved by FDA in 2002 for narcolepsy. Can make users vulnerable to sexual assault and other criminal acts; gained notoriety as a date rape drug Greatly increases CNS depressant effects of other CNS depressants Has anabolic effects and has been used by bodybuilders to aid in fat reduction and muscle building	Gamma-Hydroxybutyric acid	Easy Lay, G, Georgia Home Boy, GHB, Goop, Grievous Bodily Harm, Liquid Ecstasy, Liquid X, Scoop, Soap	Oral (liquid or powder)	Works on GABA-B receptor and a specific GHB binding site (GHB is endogenous)	Onset: 15-30 minutes Duration: 3-6 hours	Euphoria, calming effects, reduced anxiety; some believe they build muscles and cause weight loss. Also misused for ability to increase libido, suggestibility, passivity, and cause amnesia.	<ul style="list-style-type: none"> • Drowsiness • Confusion • Memory impairment • Visual hallucinations • Paradoxical excited/aggressive behavior 	<ul style="list-style-type: none"> • Regular use can lead to addiction and withdrawal (e.g. insomnia, anxiety, tremors, hypertension, tachycardia, occasional psychotic thoughts) 	Overdose: unconsciousness, seizures, slowed heart rate, slowed breathing, lower body temperature, vomiting, nausea, coma, possible death	Illicit: Schedule I Xyrem: Schedule III; only obtainable through a central pharmacy	GHB analogues usually not detected in routine tox screens
Heroin		heroin	Big H, Black Tar, China, Hell Dust, Horse, Negra, Smack, Thunder, Brown Sugar, H, Dope, Skag, Skunk, White Horse, China White	Injection, smoking, intranasal	Opioid receptor agonist	Onset: 7-8 seconds (IV) 5-8 mins (IM) 10-15 mins (sniffed, smoked)	Surge of euphoria ("rush") followed by twilight state of sleep/wakefulness	<ul style="list-style-type: none"> • Drowsiness • Respiratory depression • Constricted pupils • Nausea • Warm flushing of skin • Dry mouth • Heavy extremities 	<ul style="list-style-type: none"> • Both psychologically and physically addictive 	High risk of overdose and death Overdose symptoms: slow/shallow breathing, blue lips/fingernails, clammy skin, convulsions, coma, possible death	Schedule I; tolerance can develop	Yes

THE MENTAL HEALTH CLINICIAN TOOLBOX: DRUGS OF ABUSE (CONTINUED)

Substance	General Information	Chemical/ Medical Name	Commercial/ Street Names	Administration Routes	Mechanism of Action	Pharmacokinetics/ Pharmacology	Desired Effects	Adverse effects	Potential Harm	Abuse/Tolerance Potential	Detection Methods	
Inhalants	<p>Volatile substances found in common household products that produce chemical vapors</p> <p>Nearly all inhalants produce effects similar to anesthetics</p> <p>May be divided up into 4 categories: volatile solvents, aerosols, gases, nitrites</p>	<p>May contain: toluene, chlorinated hydrocarbons, hexane, benzene, methylene chloride, butane, nitrous oxide</p>	<p>Gluey, Huff, Rush, Whippels</p>	<p>"Huffing" (e.g. sniffing/snorting fumes from container directly, via an inhalant-soaked rag)</p>	<p>Nearly all abused inhalants produce CNS depression. If high enough doses are used, anesthesia can occur.</p> <p>Nitrites dilate and relax blood vessels. Toluene activates dopamine system</p>	<p>Duration: several minutes (users may inhale repeatedly over several hours to extend desired effects)</p>	<p>Users can experience slight stimulation, feeling of less inhibition or loss of consciousness</p> <p>Effects can be similar to those of alcohol (e.g. slurred speech, inability to coordinate movements, euphoria, dizziness)</p> <p>Inhaled nitrites can produce a sensation of heat and excitement</p>	<ul style="list-style-type: none"> • Weight loss • Muscle weakness • Disorientation • Inattentiveness • Lack of coordination • Irritability • Depression • Confusion • Nausea/vomiting • Impaired functioning and judgment • Apathy 	<ul style="list-style-type: none"> • Inhalant abuse can cause damage to parts of brain controlling thinking, seeing, moving, hearing via hypoxia • Cognitive abnormalities range from mild impairment to severe dementia • Can cause damage to CNS and other organs • Myelin breakdown leading to muscle spasms, peripheral neuropathy, tremors, walking, bending, talking, etc. • Hearing loss • Bone marrow damage • Liver/kidney damage • Blood oxygen depletion 	<p>Prolonged sniffing of highly concentrated chemicals can induce arrhythmias and lead to heart failure and death within minutes (particularly associated with abuse of butane, propane, other chemicals in aerosols)</p> <p>Potential death due to oxygen displacement in the lungs leading to suffocation. Asphyxiation can occur</p> <p>May depend on inhalant (e.g. inhalants containing toluene or naphthalene may damage protective sheath around certain nerve fibers in the brain and peripheral nervous system)</p>	<p>Not scheduled</p> <p>Addiction (uncommon) may occur with repeated abuse</p> <p>Mild withdrawal syndrome can occur with long-term abuse</p>	<p>Limited information, testing may be available through specialty labs (e.g. NMSlab.com)</p>
Jimson Weed	<p>All plant parts are toxic</p> <p>Contains belladonna alkaloids</p>	<p><i>Datura stramonium</i></p> <p>Main active constituents: atropine, hyoscyamine, hyoscine (scopolamine)</p>	<p>Thomapple, Slinkweed, Locoweed, Augushka, Ditch Weed, Devil's Snare, Devil's Seed, Devil's Trumpet, Korean Morning Glory, Jamestown Weed, Angel's Trumpet, Beezeleub's Twinkle, Madhatter, Crazy Tea</p>	<p>Oral</p>	<p>Blocks acetylcholine</p>	<p>Onset: 30-60 mins</p>	<p>Euphoria, delirium-effects</p>	<ul style="list-style-type: none"> • Confusion • Delirium • Dry mouth • Dilated pupils • Hyperthermia (with reduced sweating) • Blurred vision • Thirst • Urinary retention • Difficulty speaking and swallowing • Tachycardia 	<ul style="list-style-type: none"> • Generally used as a one-time experimentation due to unpleasant adverse effects in comparison to pleasant effects 	<p>Can cause hyperthermia, respiratory arrest and seizure</p>	<p>Not scheduled</p>	<p>Limited information, testing may be available through specialty labs (e.g. NMSlab.com)</p>
K2, Spice	<p>Synthetic cannabinoid</p> <p>Sold as a legal substitute for cannabis, found in convenience stores and gas stations as "incense"</p> <p>Popular because they also smell/taste good and have short duration (2-3 hours)</p>	<p>Various including: Naphthalen-1-yl-(1-Pentylindol-3-yl)methanone, 2-[1R,3S-3-(hydroxycyclohexyl)-5-(2-methyloctan-2-yl-phenol)-6aR,10aR]-9-(Hydroxymethyl)-6,6-dimethyl-3-(2-methyloctan-2-yl)-6a,7,10,10a-tetrahydrobenzo[c]chromen-1-ol</p>	<p>Spice, Bliss, Black Mamba, Bombay Blue, Fake Weed, Genie, Zohai, Spice Gold, Spice Diamond, Spice Silver, Spice Tropical Synergy, Spice Arctic Synergy, Smoke, Yucatan Fire, Exses Gold, eX-ses Platinum, Mojo, Spicey XXX Regular, Spicey XXX Ultra, Spike 99, Spike 99 Ultra, Magic Silver, Magic Gold</p>	<p>Usually smoked in joints or pipes, some users make tea</p>	<p>Limited information, may be similar to cannabinoids</p>	<p>Limited information</p>	<p>Effects similar to that of marijuana, cannabis: paranoia, panic attacks, giddiness, energizing, euphoria/sociability, uplifting, or sedating, anxiolytic, relaxation, stimulant, dream/latent memory enhancement</p>	<ul style="list-style-type: none"> • Tachycardia • Hypertension • Paranoia • Headache 	<ul style="list-style-type: none"> • No information 	<p>No information</p>	<p>5 synthetic cannabinoids are Schedule I (effective 3/1/2011)</p>	<p>May not show up positive for drug testing of cannabinoids,</p> <p>Limited information, testing may be available through specialty labs (e.g. NMSlab.com)</p>
Kava	<p>A perennial shrub native to South Pacific Islands</p>	<p><i>Piper methysticum</i></p> <p>Active compound: kavalactones</p>	<p>Ava, Intoxicating Pepper, Kawa Kawa, Sakau, Tonga, Yangona</p>	<p>Oral (as a beverage)</p>	<p>Acts in the limbic structures, amygdala complex, reticular formation of the brain</p> <p>Inhibits CYP450 enzymes</p>	<p>Unknown</p>	<p>Dietary supplement, anti-anxiety, sleeping aid: used to relax and mild euphoria</p>	<ul style="list-style-type: none"> • Numbing, tingling of mouth • CNS depression (sedation, muscle weakness) • Impaired coordination 	<ul style="list-style-type: none"> • Dry, scaly skin • Yellow skin discoloration (kava dermatopathy) • Extrapyramidal side effects 	<p>Liver damage and/or failure</p> <p>Can potentiate impairment produced by alcohol</p>	<p>Not scheduled</p>	<p>Unknown</p>

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Ketamine	A "dissociative anesthetic," mostly used in veterinary practice	Manufactured as an injectable liquid, used in human anesthesia and veterinary medicine	Cat Tranquilizer, Cat Valium, Jet, K, Kit Kat, Purple, Special K, Special La Coke, Super Acid, Super K, Vitamin K, Bump, Special La Coke, Super C, Honey Oil, Green	Powdered: intranasal smoking Liquid: injection or oral	Acts on NMDA (glutamate) receptor; alters distribution of glutamate throughout the brain; also binds to mu opioid and sigma/phencyclidine receptors	Onset: several minutes (slower for oral intake) Injection: 3-4 mins Intranasal: 4-14 mins Oral: 5-20 mins Relative to PCP, has a faster onset and shorter duration of action. Duration: 30-60 mins Injection: 45-90 mins Intranasal: 10-30 mins Oral: up to 90 mins	Distortions in sight/sound perception, sedation, relief from pain, amnesia; makes users feel "disconnected" or not in control, dreamlike states and hallucinations, feeling of floating or being separated from body, mild hallucinations	<ul style="list-style-type: none"> • Agitation • Depression • Cognitive difficulties • Unconsciousness • Amnesia • Tachycardia/ hypertension (initially, then decreases over 10-20 minutes) • Can make users unresponsive to stimuli 	<ul style="list-style-type: none"> • Memory and cognitive difficulties 	Overdose symptoms: unconsciousness, respiratory depression, potential death Delirium and amnesia at high doses	Schedule III Tolerance and craving can develop	Limited information, testing may be available through specialty labs (e.g. NMSlab.com)
Khat	A flowering evergreen shrub abused for stimulant-like effects; leaves and young shoot are used Contains cathinone and cathine, CNS stimulants Not legal in the U.S.	<i>Catha edulis</i>	Abyssinian Tea, African Salad, Catha, Chat, Kat, Oat	Typically retained in cheek and chewed intermittently (fresh leaves and shoots) like tobacco. Dried leaves can be made into tea or chewable paste; can be smoked or sprinkled on food	Unknown	Duration: 90 min – 3 hours	Euphoria, feeling of increased alertness and energy, hyperactivity, anorexia, lack of fatigue, relaxed, talkative	<ul style="list-style-type: none"> • Can induce manic behavior: grandiose delusions, paranoia, nightmares, hallucinations, hyperactivity • Tachycardia • Hypertension 	<ul style="list-style-type: none"> • Chronic abuse can lead to violence and suicidal depression • Brown staining of teeth • Paranoid delusions • GI disturbances 	Symptoms of toxicity: delusions, loss of appetite, difficulty breathing Reports of hepatitis, cardiac complications (long-term chewers or overdose).	Cathinone is Schedule I, Cathine is schedule IV; several states may have stricter regulations Psychological dependence reported	Unknown
Kratom	A tropical tree indigenous to South East Asia; traditionally used as a stimulant by Thai and Malaysian laborers and farmers May have opioid-like activity	<i>Mitragyna speciosa korth</i>	Thang, Kakuam, Thom, Ketum, Biak	Chewed, brewed as tea	Actions on centrally-located opioid receptors, inhibits gastric secretion and reduces pain response	Onset: 5-10 mins Duration: 2-5 hours	At low doses: stimulating: increased alertness, physical energy, talkativeness and sociable behavior High doses: opiate effects, euphoria, sedation	<ul style="list-style-type: none"> • Nausea • Itching • Sweating • Dry mouth • Constipation • Increased urination • Loss of appetite 	<ul style="list-style-type: none"> • Anorexia, weight loss • Insomnia • Skin Darkening • Dry mouth • Frequent urination • Constipation • Withdrawal syndrome: hostility, aggression, emotional lability, wet nose, achy muscles and bones, jerky limb movements • Psychosis 	Kratom psychosis (hallucinations, delusions, confusion) has been observed	Not Scheduled Addiction reported	Unknown
LSD (d-lysergic acid diethylamide)	Not legal in U.S. A "dissociative" anesthetic	Lysergic acid diethylamide	Acid, Blotter Acid, Dots, Mellow Yellow, Window Pane, Microdot, Yellow Sunshine, Blue Heaven	Oral, often added to absorbent papers; absorbed through mouth tissues	Disruption of serotonin: effects on cerebral cortex and locus ceruleus	Onset: within 30-90 minutes post-ingestion Duration: up to 12 hours (10-12 hours)	During first hour, users may experience visual changes with extreme mood changes or feeling several different emotions at once. Hallucinations with impaired depth and time perception and distorted perception of the shape and size of objects, movements, colors, sound, touch, user's own body image. Experiences may "cross over" different senses giving users the feeling of hearing colors or seeing sounds (synesthesia).	<ul style="list-style-type: none"> • Acute anxiety • Depression • Dilated pupils • Hyperthermia • Tachycardia • Hypertension • Sweating • Loss of appetite • Insomnia • Dry mouth • Tremors • Feelings of despair • Fear of losing control or insanity, death • Dizziness 	<ul style="list-style-type: none"> • Flashbacks (reported days to months after taking last dose) • Hallucinogen-induced persisting perceptual disorder (flashbacks lasting years after LSD use that cause distress or social/occupational functioning impairment) 	Psychosis and possible death	Schedule I; Not considered an addictive drug (does not produce compulsive drug-seeking behavior) Tolerance reported: cross-tolerance between LSD and other hallucinogens also reported	Yes
Marijuana	See cannabis	See cannabis	Aunt Mary, BC Bud, Blunts, Boom, Chronic, Dope, Gangster, Ganja, Grass, Hash, Herb, Hydro, Indo, Joint, Kif, Mary Jane, Mota, Pot, Reefer, Sinsemilla, Skunk, Smoke, Weed, Yerba, Green, Trees, Sinsemilla	Smoking (cigarette/joint, pipe, bong), ingested with foods, or brewed as tea	See cannabis	See cannabis	See cannabis	<ul style="list-style-type: none"> • See cannabis 	<ul style="list-style-type: none"> • See cannabis 	See cannabis	Schedule I	Yes

THE MENTAL HEALTH CLINICIAN TOOLBOX: DRUGS OF ABUSE (CONTINUED)

Substance	General Information	Chemical/ Medical Name	Commercial/ Street Names	Administration Routes	Mechanism of Action	Pharmacokinetics/ Pharmacology	Desired Effects	Adverse effects	Potential Harm	Abuse/Tolerance Potential	Detection Methods	
MDMA/Ecstasy	Stimulant and psychedelic Usually not used alone Chemically similar to methamphetamine and mescaline	3,4-methylenedioxy-methamphetamine	Adam, Beans, Clarity, Disco Biscuit, E, Ecstasy, Eve, Go, Hug Drug, Lover's Speed, MDMA, Peace, STP, X, XTC, Uppers	Oral (tablets), occasionally intranasal, smoking, injection	Primary effects on serotonin, binds to serotonin transporter to increase/prolong serotonin in the synapse; also enters serotonergic neurons and causes excessive release of serotonin; similar effects on norepinephrine; releases dopamine minimally Can interfere with own metabolism	Onset: 30-45 minutes Duration: 4-6 hours (some effects can last weeks after last dose)	Energizing effect, distortions in time and perception, enhanced enjoyment of tactile experiences, euphoria, feelings of closeness, empathy, sexuality, reduce inhibitions, increased energy, emotional warmth	<ul style="list-style-type: none"> • Confusion • Anxiety • Depression • Paranoia • Sleep problems • Increased motor activity • Hypertension • Tachycardia • Muscle tension • Tremors • Involuntary teeth clenching • Muscle cramps • Faintness • Chills • Sweating • Blurred vision • Hyperthermia • Dehydration 	<ul style="list-style-type: none"> • May increase risk of long-term/permanent problems with memory and learning • Reduction in serotonin nerve terminals and transporters 	High dose intake can produce hyperthermia that may lead to renal, hepatic, cardiovascular failure Loss of consciousness, seizures: Can be fatal	Schedule I	Yes
MDPV	At lower doses, appears to produce mild CNS stimulation, higher doses appear to be more potent cocaine-like or amphetamine-like effects Structurally related to cathinone Identified in "bath salts"	3,4-methylenedioxy-pyrovalerone or 1-(1,3-benzodioxol-5-yl)-2-(1-pyrrolidinyl)-1-pentanone	MDPK, Magic, Super Coke, Peevee	Intranasal, injection, oral, rectal, smoking	Stimulant drug that acts as a norepinephrine and dopamine reuptake inhibitor	<p>"Come-up": 1 hour Peak: 90 mins (lasting, 1 hour) "Come-down": 2.5 hr (lasting 1 hour)</p> <p>Duration: 3-4 hours Side effects may occur for 6-8 hours after administration</p>	Increased sexual arousal, euphoria, mild empathogenic effects	<ul style="list-style-type: none"> • Fatigue, insomnia • Nausea/cramps/ GI problems • Muscle twitches, jaw tension • Hyperthermia • Arrhythmia or tachycardia • Headache • Loss of appetite • Kidney pain • Tinnitus • Numbness • Dizziness • Respiratory problems • Confusion • Altered vision 	<ul style="list-style-type: none"> • Panic attacks • Prolonged anxiety • Depression • Anhedonia 	MDPV toxicity: overdose can lead to long-lasting panic attacks, permanent effects on cognition and affect	Not scheduled Increases in tolerance with continued use have been reported	Limited information, testing may be available through specialty labs (e.g. NMSlab.com)
Mephedrone	Has been compared to amphetamines and ecstasy	4-methylmethcathinone Cathinone derivatives are created by modifications to cathinone, a molecule found in the khat plant which is structurally similar to amphetamine	Miaow, Drone, 4-MMC, MMCat, MD3, Roxy, Mefedron, Krabba, Meow Meow/Miaow Miaow, Bubbles, Meph, Rush, Plant Feeder, White Magic	Oral, intranasal, rectal, smoking, injection	Speculated: 5HT-2B action (agonism?) related to 4-methyl(meth)-amphetamine: little to no effect on serotonin release or reuptake	<p>Onset: 10-20 mins Peak: 45-60 mins "Come-down": 60-120 mins</p>	Illicits euphoria, sociability, stimulation, mental clarity, hallucination, aphrodisiac effects, mood and auditory enhancement/music appreciation, with a smoother "come-up" and "come-down" than MDMA with no hangover	<ul style="list-style-type: none"> • Loss of appetite • Increase/decreased body temperature • Tense/stiff neck/jaw • Bruxism • Tachycardia • Hypertension • Respiratory difficulties • Dehydration/dry mouth • Nausea/vomiting/ abdominal pain • Flu-like symptoms • Nystagmus • Painful/numb joints • Discoloration of extremities • Light-headedness, dizziness • Insomnia, fatigue • Anxiety • Paranoia • Dysphoria • Depression • Hallucinations • Psychosis and mania 	<ul style="list-style-type: none"> • Symptoms of depression may last longer with prolonged/ increased use • Delusions 	Seizures may occur Mephedrone toxicity: peripheral neuropathy, profound vasoconstriction/ ischemia, vasculitis, infections, ulcerations, nephrotoxicity, cardiotoxicity, respiratory problems	Not scheduled, however, regarded as an analogue of the Schedule I substance methcathinone, therefore cases involving mephedrone may be prosecuted under the analogue provision of the Controlled Substance Act Risk of dependence	Limited information, testing may be available through specialty labs (e.g. NMSlab.com)
Methamphetamine	Potent CNS stimulant properties	methamphetamine	Batu, Bikers Coffee, Black Beauties, Chalk, Chicken Feed, Crank, Crystal, Glass, Go-Fast, Hiropon, Ice, Meth, Methlies, Quick, Poor Man's Cocaine, Shabu, Shards, Speed, Stove Top, Tina, Trash, Tweak, Uppers, Ventana, Vidrio, Yaba, Yellow Burn, Fire	Oral, injection, intranasal, smoking	"Rush" thought to be due to high levels of dopamine release to areas regulating pleasure Blocks reuptake of dopamine Some drug remains unchanged in the body Blocks dopamine reuptake, also increases release of dopamine	<p>Onset: 3-5 mins (intranasal) 15-20 mins (oral)</p>	Brief, intense sensation, or rush, reported by users smoking and injecting: oral use or snorting produces long-lasting high (up to half a day) Increased activity, talkativeness, decreased appetite, general sense of well-being	<ul style="list-style-type: none"> • Increased wakefulness • Increased physical activity • Decreased appetite • Tachycardia • Rapid breathing • Arrhythmia • Hypertension • Hyperthermia 	<ul style="list-style-type: none"> • Chronic users exhibit violent behavior, anxiety, confusion, insomnia • Paranoia • Aggression • Auditory/visual hallucinations • Mood disturbances • Delusions (insects on/under the skin) • Suicidal ideation • Extreme anorexia/ weight loss • Memory loss • Severe dental problems ("meth mouth") • Transmission of blood-borne diseases 	High doses may result in stroke, heart attack, multiple organ damage due to hyperthermia, possible death Convulsions in overdose	Schedule II	Yes

THE MENTAL HEALTH CLINICIAN TOOLBOX: DRUGS OF ABUSE (CONTINUED)

Substance	General Information	Chemical/ Medical Name	Commercial/ Street Names	Administration Routes	Mechanism of Action	Pharmacokinetics/ Pharmacology	Desired Effects	Adverse effects	Potential Harm	Abuse/Tolerance Potential	Detection Methods	
Opioids	Prescription drug	Various	Fentanyl: Apache, China Girl, China White, Dance Fever, Friend, Goodfella, Jackpot, Murder 8, TNT, Tango, Cash Hydrocodone: Hydro, Norco, Vikes Hydromorphone: D, Dillies, Dust, Footballs, Juice, Smack Methadone: Amidone, Chocolate Chip Cookies, Fizzies, Maria, Pastora, Salvia, Street Methadone, Wafer Morphine: Dreamer, Emsel, First Line, God's Drug, Hows, M.S., Mister Blue, Morf, Morpho, Unkie, Miss Emma, M, White Stuff Oxycodone: Hillbilly Heroin, Kicker, OC, Ox, Oxy, Perc, Roxy	Injection, oral (codeine) injection, smoking, intranasal (fentanyl) Oral (Hydrocodone) Oral, injection (hydromorphone) Oral, injection (methadone) Oral, injection, smoking (morphine) Oral, injection, intranasal, inhalation of vapors (oxycodone)	Opiate receptor agonists	Varies depending on opioid	Euphoria, sedation, altered perception of painful stimuli, relief of pain	<ul style="list-style-type: none"> • Mental clouding • Changes in mood • Nervousness • Restlessness • Constipation • Pupillary constriction • Urinary retention • Nausea/vomiting • Respiratory depression • Dizziness • Impaired coordination • Loss of appetite • Tachy-bradycardia • Hypo-hypertension • Drowsiness • Nausea • Constipation 	<ul style="list-style-type: none"> • Withdrawal symptoms: restlessness, muscle/bone pain, insomnia, diarrhea, vomiting 	Overdose symptoms: severe respiratory depression, drowsiness progressing to stupor or coma, lack of skeletal muscle tone, cold/clammy skin, constricted pupils, reduction in blood pressure and heart rate. Potential death due to respiratory depression	Schedule II, III, IV (Codeine) Schedule II (Fentanyl) Schedule III in multi-ingredient products (Hydrocodone) Schedule II: associated with psychological and physiological dependence (Hydromorphone) Schedule II (methadone) Schedule II, III (morphine) Schedule II (oxycodone)	Yes
Opium	Extracted from the poppy plant Papaver somniferum	Opium	Ah-pen-yen, Aunti, Aunti Emma, Big O, Black pill, Chandoo, Chandu, Chinese Molasses, Chinese Tobacco, Dopium, Dover's Powder, Dream Gun, Dream Slick, Dreams, Easing Powder, Fi-do-nie, Gee, God's Medicine, Gondol, Goric, Great Tobacco, Gum, Hophops, Joy Plant, Midnight Oil, Mira, O, O.P., Ope, Pen Yan, Pin Gon, Pox, Skee, Toxy, Toys, Whenshee, Ze, Zero	Smoking, injection, oral	Opiate receptor agonist	See Opioids	See Opioids	<ul style="list-style-type: none"> • See opioids 	<ul style="list-style-type: none"> • See opioids 	Overdose symptoms: respiratory depression, seizures, dizziness, weakness, loss of consciousness, coma, possible death	Schedule II	Yes
PCP (phencyclidine)	Was an approved anesthetic until 1965 due to agitation, delusions, and irrationality occurring as patients recovered from anesthetic effects "Dissociative drug"	1-(1-phenyclohexyl)piperidine	Angel dust, Embalming Fluid, Killer Weed, Rocket Fuel, Supergrass, Ozone, Angel, Boat, Dummy Dust, Love Boat, Peace, Zombie, Peace Pill, Boat, Hog, Shermans, Zoom	Smoking, injection, intranasal, oral	Affects glutamate receptor; alters distribution of glutamate throughout the brain; also affects actions of dopamine	Onset: 2-5 mins (smoking) 30-60 mins (orally) Duration: approximately 4-8 hours (some report up to 48 hours)	Feelings of detachment, distant, estranged from surroundings, distorts perception of sight/sound, sense of strength, power, and invulnerability	<ul style="list-style-type: none"> • Auditory hallucinations • Acute anxiety • Paranoia • Hostility • Psychosis • Numbness • Slurred speech • Loss of coordination • Blank stare • Rapid, involuntary eye movements • Exaggerated gait • Hypertension • Tachycardia • Generalized numbness of extremities • Can mimic schizophrenia • Mood disturbances 	<ul style="list-style-type: none"> • Mood disorders • Memory loss • Persistent difficulties with speech and thinking • Weight loss 	Psychosis, seizures, coma, and possible death (more commonly through accidental injury or suicide) Violence and suicide during PCP intoxication. Interaction with other CNS depressants may lead to coma.	Schedule I, II Withdrawal symptoms reported	Yes
Peyote and Mescaline	Peyote is a small, spineless cactus. Lophophora williamsii Mescaline is the active ingredient and hallucinogen in peyote. Not legal in the U.S.	3, 4, 5-trimethoxyphenethylamine	Buttons, Cactus, Mesc, Peyote	Fresh/dried "buttons" chewed or soaked in water, can be swallowed or smoked	Disruption of serotonin	Duration: approximately 12 hours	Illusions, hallucinations, altered perception of space and time, altered body image, euphoria	<ul style="list-style-type: none"> • Anxiety • Ataxia • Paranoia • Nausea/vomiting • Pupil dilation • Tachycardia • Hypertension • Hyperthermia • Headaches • Muscle weakness • Impaired motor coordination 	<ul style="list-style-type: none"> • Long-term residual psychological and/or cognitive effects poorly understood • Potentially flashbacks 	Fetal abnormalities	Schedule I	Limited information, testing may be available through specialty labs (e.g. NMSlab.com)
Psilocybin		4-phosphoryloxy-N,N-dimethyltryptamine (tryptamine class)	Magic Mushrooms, Mushrooms, Shrooms, Purple Passion, Little Smoke	Oral, brewed as tea	Disruption of serotonin	Onset: ~20 minutes Duration: approximately 6 hours	Hallucinations, inability to discern fantasy from reality, altered perception of time.	<ul style="list-style-type: none"> • Panic • Ataxia • Pupil dilation • Psychosis • Nausea/vomiting • Muscle weakness • Sedation • Loss of coordination 	<ul style="list-style-type: none"> • Flashbacks, psychiatric illness, impaired memory reported 	Psychosis and possible death Death due to ingestion of poisonous mushroom incorrectly identified as psilocybin mushroom	Schedule I Tolerance reported	Limited information, testing may be available through specialty labs (e.g. NMSlab.com)

THE MENTAL HEALTH CLINICIAN TOOLBOX: DRUGS OF ABUSE (CONTINUED)

Substance	General Information	Chemical/ Medical Name	Commercial/ Street Names	Administration Routes	Mechanism of Action	Pharmacokinetics/ Pharmacology	Desired Effects	Adverse effects	Potential Harm	Abuse/Tolerance Potential	Detection Methods	
Rohypnol	Not approved for manufacture, sale, use, importation in the U.S. Has been used to commit sexual assaults. Benzodiazepine	flunitrazepam	Circles, Forget Pill, Forget-Me-Pill, La Rocha, Lunch Money Drug, Mexican Valium, Pingus, R2, Reynolds, Roach, Roach 2, Roaches, Roachies, Roopies, Robutal, Rochas Dos, Rohypnol, Roofies, Rophies, Ropies, Row-Shay-Ruffies, Wolfies	Oral, intranasal	Acts at GABA-A receptors	Onset: 15-20 mins Duration: can last 12+ hours	Euphoria, reduced inhibitions, decreased anxiety, amnesia	<ul style="list-style-type: none"> Impaired judgment Sedation Anterograde amnesia Increased, decreased reaction time Impaired mental functioning and judgment Confusion Aggression Excitability Respiratory depression Motor incoordination Urinary retention 	<ul style="list-style-type: none"> Limited information 	Severe sedation, unconsciousness, bradycardia, respiratory depression, possible death Potentially fatal in combination with other CNS depressants	Schedule IV Tolerance, physical dependence, and addiction can occur	Limited information, testing may be available through specialty labs (e.g. NMSlab.com)
Salvia Divinorum	Not controlled by the Controlled Substances Act, restricted in several states. Intense, short-acting hallucinogenic plant	Salvinorin A (highly selective naturally occurring kappa opioid receptor agonist) also known as Divinorin A	Maria Pastora, Sally-D, Salvia, Ska Pastora, yerba de Maria, Diviner's mint, Diviner's sage, Magic Mint, Sally-D	Chewed, smoking (most common), insufflations or snuff, injection, oral, intravaginal, transdermal, sublingual	Salvinorin A is a highly selective naturally occurring kappa opioid receptor agonist	Onset: 30-180 sec (smoked) (5-10 mins if chewed and parked) Duration: 5-30 mins (1+ hour after sublingual use) After effects can last 30-60 mins	Perception of bright lights, vivid colors, shapes, body movement, body/object distortions, sense of overlapping realities, hallucinations Users report increased insight, improved mood, calmness, weird thoughts, feelings of unreality, feelings of physical sensation of pressure on the body (salvia gravity), feelings of floating, seeing/feeling the presence of 'supernormal'/'Salvia people', confusion of the senses, feelings of immersion in bizarre non-Euclidian dimensions/geometries	<ul style="list-style-type: none"> Fear Panic Uncontrollable laughter Loss of coordination Dizziness Slurred speech Anxiety Hypertension Tachycardia Sweating Visual impairment Neuropathy Somnambulant behavior Difficulty/heavy breathing 	<ul style="list-style-type: none"> Limited information 	Not possible to overdose Limited information	Not scheduled: Several states have placed Salvia Divinorum under regulatory controls Some people have natural tolerance; some can develop tolerance over time	Limited information, testing may be available through specialty labs (e.g. NMSlab.com)
Steroids (anabolic)	Not euphoric but does impact dopamine, serotonin, opioid systems Purchase of supplements (e.g. tetrahydrogestrone and androstenedione) previously obtainable without a prescription in health food stores and other commercial sources became illegal in 2004	Various: Oral: oxymetholone, oxandrolone, methandrostrenolone, stanozolol Injectable: nandrolone decanoate, nandrolone phenpropionate, testosterone cypionate, boldenone undecylenate, tetrahydrogestrinone	Arnolds, Juice, Pumpers, Roids, Stackers, Weight Gainers	Oral, injection, transdermal (gels or creams) Done in cycles	Binds to androgen and estrogen Doses used are generally 10-100 times higher than those for medical conditions	Varies depending on agent	Abused to improve athletic performance, increase muscle size, or reduce fat	<ul style="list-style-type: none"> Mood swings Increased feelings of hostility Impaired judgment Increased levels of aggression/rage Manic-like symptoms 	<ul style="list-style-type: none"> Upon discontinuation, depression with potential suicide Liver damage Renal failure Development of cardiovascular disease (increase LDL, decrease HDL) Infections due to nonsterile injection technique <p>May depend on age and sex.</p> <ul style="list-style-type: none"> Growth stunting Early sexual development Deepening of the voice Increased facial/body hair growth Menstrual irregularities Clitoris lengthening Testicle shrinkage Reduced sperm count Enlargement of breast tissue Sterility Increased risk of prostate cancer High cholesterol Liver damage 	High doses may cause mood/behavioral effects Heart attacks, strokes, liver cancer Suicide secondary to depression from withdrawal	Schedule III Psychological dependence and addiction reported Withdrawal symptoms reported	Yes
TFMPP	An industrial chemical; commonly abused with benzylpiperazine to produce ecstasy-like effects	1-[3-(Trifluoro-methyl)-phenyl]piperazine]]	TFMPP, Molly	Oral, smoking, intranasal	Serotonin-releasing agent	Limited information	Prevention of isolation-induced behavioral deficit, anxiolytic, anti-aggressive effects; ecstasy-like effects Feelings of pleasantness, mellow, hallucinations	<ul style="list-style-type: none"> Locomotor inhibition Hyperthermia Respiratory depression Interference with circadian system Hypophagia 	<ul style="list-style-type: none"> Limited information 	Limited information	Not scheduled (Previously a Schedule I substance as of 2004)	Limited information, testing may be available through specialty labs (e.g. NMSlab.com)