

## Appendix C: Health Risks Information: Alcohol<sup>4</sup>

### Health Risks

The following information on health risks is from the Centers for Disease Control and Prevention:

Drinking too much can harm your health. Excessive alcohol use led to approximately 95,000 deaths and 2.8 million years of potential life lost (YPLL) each year in the United States from 2011 – 2015, shortening the lives of those who died by an average of 29 years. Further, excessive drinking was responsible for 1 in 10 deaths among working-age adults aged 20-64 years. The economic costs of excessive alcohol consumption in 2010 were estimated at \$249 billion, or \$2.05 a drink.

The Dietary Guidelines for Americans defines moderate drinking as up to 1 drink per day for women and up to 2 drinks per day for men. In addition, the Dietary Guidelines do not recommend that individuals who do not drink alcohol start drinking for any reason.

Excessive alcohol use has immediate effects that increase the risk of many harmful health conditions. Over time, excessive alcohol use can lead to the development of chronic diseases and other serious problems including: High blood pressure, heart disease, stroke, liver disease, and digestive problems; Cancer of the breast, mouth, throat, esophagus, liver, and colon; Learning and memory problems, including dementia and poor school performance; Mental health challenges, including depression and anxiety; Social problems, including lost productivity, family problems, and unemployment; Alcohol dependence, or alcoholism. By not drinking too much, you can reduce the risk of these short- and long-term health risks.

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<sup>4</sup> Available at CDC website: <https://www.cdc.gov/alcohol/fact-sheets/alcohol-use.htm> (last accessed Jan. 6, 2021)

## Appendix C: Health Risks Information: Marijuana<sup>5</sup>

### Health Risks

The following information on health risks is from the Centers for Disease Control and Prevention:

Marijuana is the most commonly used illegal drug in the United States, and marijuana use may have a wide range of health effects on the body and brain.

About 1 in 10 marijuana users may experience some form of addiction. For people who begin using before the age of 18, that number rises to 1 in 6. People who are addicted to marijuana may also be at a higher risk of other negative consequences of using the drug, such as problems with attention, memory, and learning. Some people who are addicted may need to smoke more and more marijuana to get the same high. It is also important to be aware that the amount of tetrahydrocannabinol (THC) in marijuana (i.e., marijuana potency or strength) has increased over the past few decades. The higher the THC content, the stronger the effects on the brain. In addition, some methods of using marijuana (e.g., dabbing, edibles) may deliver very high levels of THC to the user.

In many cases, marijuana is smoked in the form hand-rolled cigarettes (joints), in pipes or water pipes (bongs), in bowls, or in blunts—emptied cigars that have been partly or completely refilled with marijuana. Smoked marijuana, in any form, can harm lung tissues and cause scarring and damage to small blood vessels. Smoke from marijuana contains many of the same toxins, irritants, and carcinogens as tobacco smoke. Smoking marijuana can also lead to a greater risk of bronchitis, cough, and phlegm production. These symptoms generally improve when marijuana smokers quit.

Marijuana use, especially frequent (daily or near daily) use and use in high doses, can cause disorientation, and sometimes cause unpleasant thoughts or feelings of anxiety and paranoia. Marijuana use is associated with temporary psychosis (not knowing what is real, hallucinations and paranoia) and long-lasting mental health challenges, including schizophrenia (a type of mental illness where people might see or hear things that aren't really there).

Marijuana use has also been linked to depression and anxiety, and suicide among teens. However, it is not known whether this is a causal relationship or simply an association.

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<sup>5</sup> Available at CDC website: <https://www.cdc.gov/marijuana/factsheets/teens.htm> (last accessed Jan. 6, 2021); <https://www.cdc.gov/marijuana/health-effects.html> (last accessed Jan. 6, 2021).

## Appendix C: Health Risks Information: MDMA<sup>6</sup>

### Health Risks

The following information on health risks is from the National Institute on Drug Abuse:

People who use MDMA usually take it as a capsule or tablet, though some swallow it in liquid form or snort the powder. The popular nickname Molly (slang for “molecular”) often refers to the supposedly “pure” crystalline powder form of MDMA, usually sold in capsules. However, people who purchase powder or capsules sold as Molly often actually get other drugs such as synthetic cathinones (“bath salts”) instead. Some people take MDMA in combination with other drugs such as alcohol or marijuana.

MDMA increases the activity of three brain chemicals:

- Dopamine—produces increased energy/activity and acts in the reward system to reinforce behaviors
- Norepinephrine—increases heart rate and blood pressure, which are particularly risky for people with heart and blood vessel problems
- Serotonin—affects mood, appetite, sleep, and other functions. It also triggers hormones that affect sexual arousal and trust. The release of large amounts of serotonin likely causes the emotional closeness, elevated mood, and empathy felt by those who use MDMA.

Other health effects include:

- nausea
- blurred vision
- muscle cramping
- chills, and
- involuntary teeth clenching
- sweating.

MDMA’s effects last about 3 to 6 hours, although many users take a second dose as the effects of the first dose begin to fade. Over the course of the week following moderate use of the drug, a person may experience irritability, impulsiveness and aggression, depression, sleep problems, anxiety, memory and attention problems, decreased appetite, and decreased interest in and pleasure from sex. It’s possible that some of these effects may be due to the combined use of MDMA with other drugs, especially marijuana.

High doses of MDMA can affect the body’s ability to regulate temperature. This can lead to a spike in body temperature that can occasionally result in liver, kidney, or heart failure or even death.

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<sup>6</sup> Available at NIH website: <https://www.drugabuse.gov/publications/drugfacts/mdma-ecstasymolly>.

## Appendix C: Health Risks Information: Prescription Opioids<sup>7</sup>

### Health Risks

The following information on health risks is from the National Institute on Drug Abuse:

Prescription opioids used for pain relief are generally safe when taken for a short time and as prescribed by a doctor, but they can be misused.

Opioids bind to and activate opioid receptors on cells located in many areas of the brain, spinal cord, and other organs in the body, especially those involved in feelings of pain and pleasure. When opioids attach to these receptors, they block pain signals sent from the brain to the body and release large amounts of dopamine throughout the body. This release can strongly reinforce the act of taking the drug, making the user want to repeat the experience.

In the short term, opioids can relieve pain and make people feel relaxed and happy. However, opioids can also have harmful effects, including drowsiness, confusion, nausea, constipation, euphoria, and slowed breathing. Opioid misuse can cause slowed breathing, which can cause hypoxia, a condition that results when too little oxygen reaches the brain. Hypoxia can have short- and long-term psychological and neurological effects, including coma, permanent brain damage, or death. Researchers are also investigating the long-term effects of opioid addiction on the brain, including whether damage can be reversed.

People addicted to an opioid medication who stop using the drug can have severe withdrawal symptoms that begin as early as a few hours after the drug was last taken. These symptoms include muscle and bone pain, sleep problems, diarrhea and vomiting, cold flashes with goose bumps, uncontrollable leg movements, and severe cravings.

An opioid overdose occurs when a person uses enough of the drug to produce life-threatening symptoms or death. When people overdose on an opioid medication, their breathing often slows or stops. This can decrease the amount of oxygen that reaches the brain, which can result in coma, permanent brain damage, or death.

If you suspect someone has overdosed, the most important step to take is to call 911 so he or she can receive immediate medical attention. Once medical personnel arrive, they will administer naloxone. Naloxone is a medicine that can treat an opioid overdose when given right away. It works by rapidly binding to opioid receptors and blocking the effects of opioid drugs. Naloxone is available as an injectable (needle) solution, a hand-held auto-injector (EVZIO®), and a nasal spray (NARCAN® Nasal Spray).

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<sup>7</sup> Available at NIH website: <https://www.drugabuse.gov/publications/drugfacts/prescription-opioids>.

## Appendix C: Health Risks Information: Specific Dangers from Drug Facilitated Sexual Assault Drugs<sup>8</sup>

### Health Risks

The following information on health risks is from the National Institute of Drug Abuse:

There are three specific drugs that are commonly utilized in drug facilitated sexual assault: Rohypnol®, Ketamine, or GHB (Gamma Hydroxybutyric Acid).

#### **Rohypnol®**

Rohypnol®, also known as flunitrazepam, is not approved in the United States, although it is available for use as a prescription sleep aid in other countries. It is most commonly found as a tablet which is consumed by dissolving it in a drink or swallowing it. The possible short term health effects include drowsiness, sedation, sleep, amnesia, blackout; decreased anxiety; muscle relaxation, impaired reaction time and motor coordination; impaired mental functioning and judgement; confusion; aggression; excitability; slurred speech; headache; slowed breathing and heart rate. When combined with alcohol the possible health effects include severe sedation, unconsciousness, and slowed heart rate and breathing, which can lead to death. At this point the long-term health effects of Rohypnol® are still unknown. Rohypnol® can take between 36-72 hours to leave the body.

#### **GHB (Gamma Hydroxybutyric Acid)**

GHB is a depressant approved for use in treatment of narcolepsy, and commonly goes by the other names of Goop, liquid ecstasy, and liquid X. It is most commonly found as a colorless liquid or white powder which is consumed through swallowing, often in combination with alcohol. The possible short term health effects include euphoria, drowsiness, nausea, vomiting, confusion, memory loss, unconsciousness, slowed heart rate and breath, lower body temperature, seizures, coma, and death. In combination with alcohol the possible health effects include nausea, problems with breathing, and greatly increased depressant effects. At this point in time the long-time effects of GHB are unknown. GHB, unlike Rohypnol, leaves the body between 10-12 hours after consumption.

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<sup>8</sup> Available at NIH website: <https://www.drugabuse.gov/drug-topics/commonly-used-drugs-charts#rohypnol-reg-flunitrazepam->  
<https://www.drugabuse.gov/drug-topics/commonly-used-drugs-charts#ghb>  
<https://www.drugabuse.gov/drug-topics/commonly-used-drugs-charts#ketamine>  
[https://www.dea.gov/sites/default/files/2018-07/DFSA\\_0.PDF](https://www.dea.gov/sites/default/files/2018-07/DFSA_0.PDF)

## Appendix C: Health Risks Information: Specific Dangers from Drug Facilitated Sexual Assault Drugs (continued)

### Health Risks (continued)

#### Ketamine

Ketamine is a dissociative drug used as a surgical anesthetic, an anesthetic in veterinary practice, and as a prescription for treatment resistant depression under strict medical supervision. It is most commonly found in liquid or white powder and is consumed through swallowing, smoking, snorting, or injections. The possible short term health effects include problems with attention, learning, and memory; dreamlike states, hallucinations; sedation; confusion loss of memory; raised blood pressure, unconsciousness; and dangerously slowed breathing. If ketamine is consumed with alcohol there is a risk of adverse effects. The possible health effects associated with long term use include ulcers and pain in the bladder; kidney problems; stomach pain; depression; and poor memory.

If an individual believes they or a friend have consumed Rohypnol®, GHB, or Ketamine they should visit a local healthcare facility that can care for survivors of sexual assault and provide a forensic exam. While receiving care the individual who has ingested the drug can request the hospital to take a urine sample for drug toxicology testing, if the individual cannot immediately go to a hospital they should save their urine in a clean, sealable container as soon as possible, and place it in the refrigerator or freezer for future toxicology testing.

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