Substance Use and Abuse:

Everything Matters, Second Edition

By Rick Csiernik, BSc, MSW, Phd, CCAC

Instructor’s Manual

Canadian Scholars’ Press, 2016
Contents

Chapter 1: Fundamental Concepts

Chapter 2: Theories on Addiction

Chapter 3: Psychoactive Substances of Use and Abuse

Chapter 4: Treatment Options

Chapter 5: Treatment Resources

Chapter 6: Prevention

Chapter 7: Becoming a Competent Addiction Counsellor: Legal, Ethical, and Practice Considerations

Appendix A: Canadian Addiction Resources

Appendix B: Answers to the True & False Quizzes
Chapter 1: Fundamental Concepts

Lecture Suggestions

Group Activity/Class Discussion Questions
1. The addiction field is a very ambiguous one, filled with myth, half-truths, and ignorance. What are your core beliefs, perceptions, and knowledge about what addiction is?

2. What do you think addiction entails?

3. What is the difference between an addiction and a dependency?

4. What is the difference between an addiction and an eating disorder?

5. Who uses drugs in our society?

6. What global drug issues pertaining to psychoactive drugs are you aware of?

Multiple Choice Questions

1. A psychoactive drug
   a) is any chemical substance that alters the central nervous system
   b) is a substance classified under the Controlled Drugs and Substances Act of Canada
   c) must be used via injection, either intramuscular, intravenous, or subcutaneous
   d) must be taken orally, in a pill, powder, or liquid form

2. Addiction
   a) occurs with games of chance, like roulette or poker
   b) is a chronic brain disease
   c) is a bio-psycho-social phenomenon
   d) is the domain of neurobiologists

3. Physical dependency
   a) is a physiological state of cellular adaptation occurring when the body becomes so accustomed to a drug that it can only function normally when the drug is present
   b) needs to be considered in terms of how it disorganizes individuals' lives and how it creates crises in lives
   c) occurs with games of chance, like craps and blackjack
   d) occurs when a drug becomes so important to a person's thoughts or activities that the person believes that he or she cannot manage without the substance
4. Psychological dependency
   a) is a physiological state of cellular adaptation occurring when the body becomes so accustomed to a drug that it can only function normally when the drug is present
   b) needs to be considered in terms of how it disorganizes individuals' lives and how it creates crises in lives
   c) occurs with games of chance, like craps and blackjack
   d) occurs when a drug becomes so important to a person's thoughts or activities that the person believes that he or she cannot manage without the substance.

5. To which of the following can you NOT become addicted?
   a) sex
   b) alcohol
   c) cannabis
   d) caffeine

6. To which of the following CAN you become addicted?
   a) food
   b) shopping
   c) internet
   d) cannabis

7. The reason that a majority of the soldiers returning from the Vietnam War who had used heroin in combat were no longer addicted to the drug when they returned to the United States was
   a) heroin does not produce physical dependency
   b) heroin does not produce psychological dependency
   c) the change in their environment
   d) it became more difficult to obtain heroin

8. Differences in the cognitive ability of children born to crack-using mothers in urban centres in the United States during the 1980s and 1990s compared to the national average was due to
   a) the use of crack by their fathers and mothers
   b) the trauma in their environment
   c) lower school attendance
   d) the use of crack by their mothers

9. A distinguishing difference between problem gambling and addiction is
   a) social factors
   b) the lack of withdrawal
   c) psychological dependency
   d) there is no difference between the two
10. When a person has first contact with a drug and moves to the experimental stage
   a) they quickly stop
   b) the most common outcome is a move to excessive use
   c) if they reach the stage of addiction, premature death is the likely outcome
   d) the most common outcome is integrated use

11. The most commonly used drug by Canadian youth, excluding caffeine, is
   a) cannabis
   b) solvents and inhalants
   c) tobacco
   d) alcohol

12. Illicit global drug use is
   a) greatest in South America
   b) greatest in higher socio-economic nations
   c) lowest in higher socio-economic nations
   d) not an issue in drug producing countries

13. Per capita opioid consumption is greatest in
   a) Canada
   b) the Golden Triangle (Myanmar, Laos, Thailand)
   c) the Golden Crescent (Afghanistan, Iran, Pakistan)
   d) China

14. Per capita alcohol consumption is greatest in
   a) Canada
   b) The United Kingdom (England, Northern Ireland, Scotland, Wales)
   c) Russia
   d) Australia

15. Student Drug Use in Ontario is
   a) lower now than in the 1970s
   b) greater now than in the 1970s
   c) unchanged since the 1970s
   d) not possible to determine because of the illicit nature of student drug use

16. In terms of the impact of drugs on Portugal’s GDP, their GDP became among the lowest
    in the world when
   a) it reintroduced the death penalty for trafficking
   b) it decriminalized the possession of drugs
   c) it increased its police force
   d) it legalized cannabis
17. The highest revenue-producing cash crop in Afghanistan is
   a) wheat
   b) maize
   c) cannabis
   d) opium

True or False Quiz: Foundations of Pharmacology

1. Inhalation is the quickest way to administer a drug to produce a change in the central nervous system.
   a) True
   b) False

2. Tolerance indicates the length of time that it takes for a drug to be metabolized by the body.
   a) True
   b) False

3. While the liver is responsible for the majority of elimination of a drug from the body, the lungs still remove approximately 35%.
   a) True
   b) False

4. Intravenous injection is the slowest method of injection administration.
   a) True
   b) False

5. Transdermal administration is the least common method of administration.
   a) True
   b) False

6. Addiction consists solely of two components: physical dependency and psychological dependency.
   a) True
   b) False

7. Psychological dependency is more powerful than physical dependency.
   a) True
   b) False

8. Serotonin and dopamine are related.
   a) True
   b) False
True or False Quiz Answers: Foundations of Pharmacology

1. Inhalation is the quickest way to administer a drug to produce a change in the central nervous system.
   True

   On average it takes eight seconds for a psychoactive drug to reach the brain once it has been inhaled, almost twice as fast as the next quickest method, intravenous injection, and considerably faster than the most common method, oral administration, that can take up to one hour.

2. Tolerance indicates the length of time that it takes for a drug to be metabolized by the body.
   False

   The process being described is half-life. Tolerance is an increased resistance to the effects of a drug that usually occurs after repeated or chronic use.

3. While the liver is responsible for the majority of elimination of a drug from the body, the lungs still remove approximately 35%.
   False

   The liver is the primary organ responsible for the elimination of drugs from the body, accounting for approximately 95% of elimination. Breath accounts for slightly less than 5%, though this is sufficient to allow for the use of the breathalyzer in testing blood alcohol levels.

4. Intravenous injection is the slowest method of injection administration.
   False

   Intravenous injection is quicker than both intramuscular injection (IM), injecting a drug into the muscle, and subcutaneous injection (SC), injecting a drug just under the skin, also referred to as skin popping.

5. Transdermal administration is the least common method of administration.
   True

   The only two psychoactive drugs that are administered across the skin are nicotine in the patch, used to help smokers quit, and LSD in the form of blotter acid. However, even for these two drugs, other forms of administration are much more common.

6. Addiction consists solely of two components: physical dependency and psychological dependency.
   False

   While to be addicted to a psychoactive drug one must be both physically and psychologically dependent, there is also a third element, the social/environmental component. Many people
also separate the spiritual dimension from the social/environmental and consider it a fourth aspect.

7. *Psychological dependency is more powerful than physical dependency.*

   True

   While the withdrawal component of physical dependency can be very painful, successful withdrawal can usually take place in less than one week for most psychoactive drugs. However, psychological dependency can trigger drug use weeks, months, and even years later in former users.

8. *Serotonin and dopamine are related.*

   True

   These are two examples of neurotransmitters. Neurotransmitters are substances that psychoactive drugs influence to produce changes in the central nervous system and thus create the euphoria that makes drug use pleasurable and/or allows the user to escape from reality, temporarily.

**ASSIGNMENT SUGGESTIONS**

**Critical Thinking Essay**

1. Define addiction and discuss the significance of your definition.

2. What distinguishes addiction from compulsive behaviours? Why is it important to have this distinction?

3. Discuss drug use in the Canadian context. What is needed to respond to this national issue?

4. What are the social and economic implications of addiction? Consider local, national, and international issues.

**Take Home Assignment Questions**

1. Post a personal incident that underscores your understanding of the social implications of addiction. It may relate to your work or volunteer experience, travel experience, counselling practice, or something from the media. The intent is to show how drug use is a global phenomenon that affects us all.

2. Why is it important to distinguish between an addiction and other compulsive behaviours, or do we even need to bother?

3. a) Define dependency and discuss the significance of your definition.

   b) Define addiction and discuss the significance of your definition.
c) What is the difference between those two definitions? Why is this important for those in the addiction profession to understand?

d) Distinguish between the casual every day and media use of addiction and the more precise definition provided in chapter one. What are the treatment and counseling implications for these two definitions?

4. What are the reasons a person becomes addicted to a psychoactive drug? How do those reasons align with the ideas from your discussion in question one?

5. What is the difference between an addiction and
   i) a compulsive behaviour
   ii) an eating disorder

6. a) What are the differences between drug use in Canada and drug use in different nations?
   b) Was the incidence of drug use in Canada and in different nations greater or less than you thought prior to completing the reading?
   c) What factors influenced your thoughts on how many people in Canada and in different nations were using psychoactive drugs?

7. Which method is the quickest way for a drug to enter the body and produce an effect? Which method is the slowest way?

8. What system(s) is/are responsible for the elimination of drugs from the body?

9. What is the definition and significance of half-life?

10. What are the fastest practical methods for administering
   i) cocaine
   ii) alcohol
   iii) opioids

11. What are the basic neurotransmitters associated with addiction?

12. What are some of the popular drugs that young people are currently using?

13. What differences are there between the provinces in terms of drug use by young people?

14. What is the significance of Table 1.2: Comparison of Per Capita Opioid Consumption, with Table 1.6: Changes in Afghanistan Farm-Gate Prices of Select and Illicit Crops?

15. What patterns do you see in terms of global drug use?

16. What are the economic patters of drug use internationally?
ADDITIONAL RESOURCES

Websites

Canadian Tobacco, Alcohol and Drugs Survey (CTADS)


Canadian Drug and Alcohol Use Statistics


Global Drug Trade

http://www.globalresearch.ca/cocaine-heroin-cannabis-ecstasy-how-big-is-the-global-drug-trade/5381210

United Nations Office on Drugs and Crime website:

http://www.unodc.org/

Videos

Hinterland: Spiders on Drugs

https://www.youtube.com/watch?v=sHzdsFiBbFc

Stanton Peele: Is Addiction a Disease?

https://www.youtube.com/watch?v=05ANXZKdCg0

What Causes Addiction?

https://www.youtube.com/watch?v=ao8L-0nSYzg

Johann Hari: Everything you think you know about addiction is wrong

https://www.ted.com/talks/johann_hari_everything_you_think_you_know_about_addiction_is_wrong?language=en#t-5820
Fundamental Concepts

Are you the fish that can see the water that you swim in?
Fundamental Terms

- Psychoactive drug
- Addiction
- Physical dependency
- Psychological dependency
What is NOT an addiction?

- Eating disorders
- Compulsive behaviours: shopping, internet use, sex
- Problem gambling

Why are these not an addiction?
- No psychoactive change to brain
- Different treatment approach
- Different treatment system
Psychoactive Drug Groupings

- **Depressants**
  - Benzodiazepines, Barbiturates, Alcohol, Solvents, Antihistamines

- **Opioids**
  - Codeine, Morphine, OxyContin, Heroin, Methadone

- **Stimulants**
  - Cocaine, Amphetamines, Ritalin, Decongestants, Nicotine, Khat, Betel, Caffeine

- **Hallucinogens**
  - LSD, Ecstasy, Ketamine, Cannabis

- **Psychotherapeutic Agents**
  - Antidepressants, Antipsychotics, Mood Stabilizers
The Neuron
Fundamental Neurotransmitters

- Dopamine
- Endocannabinoids
- Endorphins
- Gamma-aminobutyric Acid (GABA)
- Glutamate
- Norepinephrine
- Serotonin
- **Tolerance**
  - The body’s adaption to the presence of the drug requiring increased amounts to produce the same outcome as originally experienced

- **Withdrawal**
  - The development of physical disturbances or physical illness when drug use is suddenly discontinued in the opposite direction to the original effects of the drug
# Routes of Administration

<table>
<thead>
<tr>
<th>Method</th>
<th>Example of Drug</th>
<th>Time Needed for Effect</th>
<th>Advantages of Route</th>
<th>Disadvantages of Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>Alcohol</td>
<td>30-60 minutes</td>
<td>Convenient</td>
<td>Slow, irregular</td>
</tr>
<tr>
<td>Inhalation</td>
<td>Nicotine</td>
<td>8 seconds</td>
<td>Fast</td>
<td>Lung damage</td>
</tr>
<tr>
<td>Intravenous Injection</td>
<td>Heroin</td>
<td>15 seconds</td>
<td>Fast</td>
<td>Overdose/infections</td>
</tr>
<tr>
<td>Mucous membrane</td>
<td>Cocaine</td>
<td>1-2 minutes</td>
<td>Convenient</td>
<td>Local tissue damage</td>
</tr>
<tr>
<td>Subcutaneous injection</td>
<td>Heroin</td>
<td>5-10 minutes</td>
<td>Safer &amp; easier than IV</td>
<td>Infection</td>
</tr>
<tr>
<td>Intramuscular Injection</td>
<td>Morphine</td>
<td>10-15 minutes</td>
<td>Controlled</td>
<td>Painful</td>
</tr>
<tr>
<td>Transdermal</td>
<td>Nicotine</td>
<td>15-20 minutes</td>
<td>Convenient</td>
<td>Limited application/potential misuse</td>
</tr>
</tbody>
</table>
Drug Consumption

Q: Is it time to end the war on drugs?

NO. NO. NO.
Main problem drugs as reflected in treatment demand, 2010 (or latest year available)

Notes: Percentages are unweighted means of treatment demand from reporting countries.
Number of countries reporting: Europe (44), Africa (26), North America (3), South America (21), Asia (42), Oceania (3).
Data generally account for primary drug use. Polydrug use may increase totals beyond 100%.
The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

https://en.wikipedia.org/wiki/Alcohol_consumption_in_Russia#/media/File:Alcohol_consumption_per_capita_world_map.PNG
### Student Drug Use By Province (Grades 7-12)

<table>
<thead>
<tr>
<th>Province</th>
<th>British Columbia</th>
<th>Alberta</th>
<th>Manitoba</th>
<th>Ontario</th>
<th>Quebec</th>
<th>New Brunswick</th>
<th>Prince Edward Island</th>
<th>Nova Scotia</th>
<th>Newfoundland</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Depressants</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcohol</td>
<td>50.4%</td>
<td>48.5%</td>
<td>54.8%</td>
<td>61.8%</td>
<td>59.7%</td>
<td>50.3%</td>
<td>46.3%</td>
<td>51.7%</td>
<td>52.0%</td>
</tr>
<tr>
<td>Alcohol - binge drinking</td>
<td>23.6%</td>
<td>19.3%</td>
<td>26.7%</td>
<td>26.9%</td>
<td>*</td>
<td>25.3%</td>
<td>26.1%</td>
<td>27.7%</td>
<td>29.7%</td>
</tr>
<tr>
<td>Inhalants</td>
<td>3.8%</td>
<td>5.3%</td>
<td>2.2%</td>
<td>8.7%</td>
<td>0.8%</td>
<td>2.6%</td>
<td>3.6%</td>
<td>4.4%</td>
<td>4.4%</td>
</tr>
<tr>
<td>Heroin</td>
<td>1.3%</td>
<td>0.8%</td>
<td>0.8%</td>
<td>1.1%</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td><strong>Stimulants</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amphetamines/ Methamphetamine</td>
<td>2.2%</td>
<td>1.5%</td>
<td>2.8%</td>
<td>1.9%</td>
<td>7.3%</td>
<td>2.1%</td>
<td>1.2%</td>
<td>1.6%</td>
<td>2.4%</td>
</tr>
<tr>
<td>Cocaine</td>
<td>4.4%</td>
<td>3.3%</td>
<td>3.9%</td>
<td>4.2%</td>
<td>3.4%</td>
<td>2.9%</td>
<td>3.4%</td>
<td>4.3%</td>
<td>5.3%</td>
</tr>
<tr>
<td>Tobacco</td>
<td>3.0%</td>
<td>4.0%</td>
<td>5.0%</td>
<td>4.0%</td>
<td>5.0%</td>
<td>9.0%</td>
<td>7.0%</td>
<td>5.0%</td>
<td>6.0%</td>
</tr>
<tr>
<td><strong>Hallucinogens</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cannabis (past month use)</td>
<td>17.1%</td>
<td>9.3%</td>
<td>13.4%</td>
<td>16.8%</td>
<td>27.2%</td>
<td>11.3%</td>
<td>9.2%</td>
<td>13.7%</td>
<td>12.2%</td>
</tr>
<tr>
<td>Cannabis (daily)</td>
<td>3.6%</td>
<td>*</td>
<td>4.3%</td>
<td>2.6%</td>
<td>2.6%</td>
<td>4.0%</td>
<td>2.2%</td>
<td>5.3%</td>
<td>4.6%</td>
</tr>
<tr>
<td>LSD</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>4.3%</td>
<td>2.5%</td>
<td>3.7%</td>
<td>4.2%</td>
</tr>
<tr>
<td>MDMA (Ecstasy)</td>
<td>7.1%</td>
<td>5.7%</td>
<td>4.5%</td>
<td>4.4%</td>
<td>5.7%</td>
<td>5.2%</td>
<td>3.4%</td>
<td>6.9%</td>
<td>7.2%</td>
</tr>
<tr>
<td>Psyilocybin/Mescaline</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>5.5%</td>
<td>4.9%</td>
<td>7.7%</td>
<td>4.2%</td>
</tr>
</tbody>
</table>

* data not collected

*Sources: Propel Centre for Population Health Impact (2014); Young (2011).*
### Ontario Student Past Year Drug Use (at least one use)

*Source: Boak, Hamilton, Adlaf & Mann (2013).*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>4687</td>
<td>3270</td>
<td>4154</td>
<td>3915</td>
<td>3571</td>
<td>3990</td>
<td>3898</td>
<td>7726</td>
<td>9112</td>
<td>9288</td>
<td>10272</td>
</tr>
</tbody>
</table>

#### Depressants

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>76.3%</td>
<td>75.3%</td>
<td>69.8%</td>
<td>66.2%</td>
<td>56.5%</td>
<td>59.6%</td>
<td>63.9%</td>
<td>62.0%</td>
<td>58.2%</td>
<td>54.9%</td>
<td>49.5%</td>
</tr>
<tr>
<td>Inhalants</td>
<td>9.1%</td>
<td>5.3%</td>
<td>3.8%</td>
<td>4.2%</td>
<td>3.4%</td>
<td>3.5%</td>
<td>7.6%</td>
<td>6.0%</td>
<td>6.0%</td>
<td>5.6%</td>
<td>3.4%</td>
</tr>
<tr>
<td>Medical Barbiturates</td>
<td>14.2%</td>
<td>12.5%</td>
<td>9.0%</td>
<td>7.8%</td>
<td>5.6%</td>
<td>6.0%</td>
<td>11.8%</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Non-Med. Barbiturates</td>
<td>6.0%</td>
<td>8.1%</td>
<td>4.4%</td>
<td>2.2%</td>
<td>3.4%</td>
<td>3.5%</td>
<td>7.6%</td>
<td>6.0%</td>
<td>6.0%</td>
<td>5.6%</td>
<td>3.4%</td>
</tr>
<tr>
<td>Med Sedative-Hypnotics</td>
<td>8.6%</td>
<td>7.5%</td>
<td>4.7%</td>
<td>3.1%</td>
<td>2.2%</td>
<td>2.1%</td>
<td>3.2%</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Non-Med. Sed-Hypnotics</td>
<td>4.9%</td>
<td>4.9%</td>
<td>3.3%</td>
<td>2.4%</td>
<td>1.7%</td>
<td>2.1%</td>
<td>2.2%</td>
<td>1.6%</td>
<td>1.6%</td>
<td>1.9%</td>
<td>2.4%</td>
</tr>
</tbody>
</table>

#### Opioids

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Heroin</td>
<td>2.0%</td>
<td>1.5%</td>
<td>1.5%</td>
<td>1.2%</td>
<td>1.2%</td>
<td>1.8%</td>
<td>1.1%</td>
<td>0.9%</td>
<td>0.7%</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Non-Medical Opioids</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>17.8%</td>
<td>14.0%</td>
<td>12.4%</td>
<td></td>
</tr>
<tr>
<td>Oxycontin/Oxyneo</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>1.0%</td>
<td>1.6%</td>
<td>1.2%</td>
<td>1.6%</td>
<td>1.6%</td>
</tr>
</tbody>
</table>

#### Stimulants

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ADHD Drugs</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>1.6%</td>
<td>1.0%</td>
</tr>
<tr>
<td>Cocaine</td>
<td>3.8%</td>
<td>4.8%</td>
<td>4.5%</td>
<td>2.7%</td>
<td>1.5%</td>
<td>2.7%</td>
<td>4.4%</td>
<td>4.4%</td>
<td>2.6%</td>
<td>2.1%</td>
<td>2.4%</td>
</tr>
<tr>
<td>Crack</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>1.0%</td>
<td>1.0%</td>
<td>2.2%</td>
<td>2.1%</td>
<td>2.0%</td>
<td>1.0%</td>
<td>0.7%</td>
<td>0.7%</td>
</tr>
<tr>
<td>Medical Stimulants</td>
<td>6.6%</td>
<td>6.1%</td>
<td>4.3%</td>
<td>3.3%</td>
<td>4.0%</td>
<td>3.7%</td>
<td>7.0%</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Non-Medical Stimulants</td>
<td>7.2%</td>
<td>12.1%</td>
<td>11.8%</td>
<td>6.5%</td>
<td>5.4%</td>
<td>6.6%</td>
<td>6.3%</td>
<td>4.8%</td>
<td>4.8%</td>
<td>4.1%</td>
<td>*</td>
</tr>
<tr>
<td>Methamphetamine</td>
<td>2.7%</td>
<td>3.0%</td>
<td>3.1%</td>
<td>2.5%</td>
<td>2.0%</td>
<td>3.6%</td>
<td>3.9%</td>
<td>2.2%</td>
<td>1.6%</td>
<td>1.0%</td>
<td>1.0%</td>
</tr>
<tr>
<td>Tobacco</td>
<td>30.4%</td>
<td>30.3%</td>
<td>24.5%</td>
<td>23.3%</td>
<td>23.8%</td>
<td>27.6%</td>
<td>23.1%</td>
<td>14.4%</td>
<td>11.7%</td>
<td>8.7%</td>
<td>8.5%</td>
</tr>
</tbody>
</table>

#### Hallucinogens

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cannabis</td>
<td>25.0%</td>
<td>29.9%</td>
<td>21.2%</td>
<td>14.1%</td>
<td>12.7%</td>
<td>24.9%</td>
<td>28.6%</td>
<td>26.5%</td>
<td>25.6%</td>
<td>22.0%</td>
<td>23.0%</td>
</tr>
<tr>
<td>Jimson Weed</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>2.3%</td>
<td>1.7%</td>
<td>1.3%</td>
</tr>
<tr>
<td>Ketamine</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>1.3%</td>
<td>1.6%</td>
<td>0.9%</td>
</tr>
<tr>
<td>LSD</td>
<td>6.1%</td>
<td>10.2%</td>
<td>7.4%</td>
<td>5.9%</td>
<td>6.9%</td>
<td>7.6%</td>
<td>4.8%</td>
<td>1.7%</td>
<td>1.8%</td>
<td>1.2%</td>
<td>1.5%</td>
</tr>
<tr>
<td>MDMA (Ecstasy)</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>PCP</td>
<td>*</td>
<td>2.5%</td>
<td>1.7%</td>
<td>1.1%</td>
<td>0.6%</td>
<td>2.0%</td>
<td>2.8%</td>
<td>1.1%</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Psilocybin/ Mescaline</td>
<td>4.3%</td>
<td>4.7%</td>
<td>4.8%</td>
<td>4.3%</td>
<td>3.1%</td>
<td>10.1%</td>
<td>11.1%</td>
<td>6.7%</td>
<td>5.0%</td>
<td>3.8%</td>
<td>3.7%</td>
</tr>
<tr>
<td>Salvia Divinorum</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>4.4%</td>
<td>3.7%</td>
<td>2.6%</td>
</tr>
</tbody>
</table>
“One-thumb Eddie has three ounces of snow... He sells an eight-ball to Big-Daddy Lipscomb for $280.00 and two-grams to Large Lita for $80.00 per gram. What is the street value of the balance of the cocaine if Eddie doesn’t cut it?”
## Economic Costs of Alcohol Abuse by Nation

<table>
<thead>
<tr>
<th>Country</th>
<th>Year of Study</th>
<th>Population (millions)</th>
<th>Total Cost Estimate (USB Billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>1998-1999</td>
<td>18.7</td>
<td>7.5</td>
</tr>
<tr>
<td>Canada</td>
<td>1992</td>
<td>28.3</td>
<td>7.5</td>
</tr>
<tr>
<td>Canada</td>
<td>2002</td>
<td>31.3</td>
<td>14.6</td>
</tr>
<tr>
<td>Chile</td>
<td>2000</td>
<td>15.2</td>
<td>3.0</td>
</tr>
<tr>
<td>Finland</td>
<td>1990</td>
<td>5.0</td>
<td>4.0</td>
</tr>
<tr>
<td>Germany</td>
<td>2002</td>
<td>82.5</td>
<td>27.4</td>
</tr>
<tr>
<td>Ireland</td>
<td>2000</td>
<td>3.8</td>
<td>2.4</td>
</tr>
<tr>
<td>Italy</td>
<td>2003</td>
<td>57.3</td>
<td>7.6</td>
</tr>
<tr>
<td>Japan</td>
<td>1987</td>
<td>122.1</td>
<td>5.7</td>
</tr>
<tr>
<td>Netherlands</td>
<td>2001</td>
<td>15.8</td>
<td>4.0</td>
</tr>
<tr>
<td>Scotland</td>
<td>2005-2006</td>
<td>5.1</td>
<td>2.25</td>
</tr>
<tr>
<td>South Korea</td>
<td>2000</td>
<td>47.0</td>
<td>.15</td>
</tr>
<tr>
<td>Thailand</td>
<td>2006</td>
<td>65.9</td>
<td>4.75</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>2000</td>
<td>59.4</td>
<td>23.6</td>
</tr>
<tr>
<td>United States</td>
<td>2011</td>
<td>311.6</td>
<td>193.5</td>
</tr>
</tbody>
</table>

International Drug Routes

Marijuana and Hashish Trade

http://www.deamuseum.org/ccp/cannabis/production-distribution.html
Changes in Afghanistan farm-gate prices of select licit and illicit crops, 2009-2013

<table>
<thead>
<tr>
<th>Agricultural Product</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh Opium</td>
<td>48</td>
<td>128</td>
<td>180</td>
<td>163</td>
<td>143</td>
</tr>
<tr>
<td>Dry Opium</td>
<td>64</td>
<td>169</td>
<td>241</td>
<td>196</td>
<td>172</td>
</tr>
<tr>
<td>Cannabis (prime grade)</td>
<td>35</td>
<td>86</td>
<td>95</td>
<td>68</td>
<td>n.a.</td>
</tr>
<tr>
<td>Cannabis (third grade)</td>
<td>12</td>
<td>39</td>
<td>39</td>
<td>26</td>
<td>n.a.</td>
</tr>
<tr>
<td>Rice</td>
<td>1.0</td>
<td>1.1</td>
<td>1.1</td>
<td>1.2</td>
<td>n.a.</td>
</tr>
<tr>
<td>Wheat</td>
<td>0.6</td>
<td>0.3</td>
<td>0.4</td>
<td>0.5</td>
<td>n.a.</td>
</tr>
<tr>
<td>Maize</td>
<td>0.4</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

*Source: International Narcotics Control Board (2014)*