

## Examining Cannabis Use and the Overall Impact on Public Health

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### CHESTNUT SERVICE LINES



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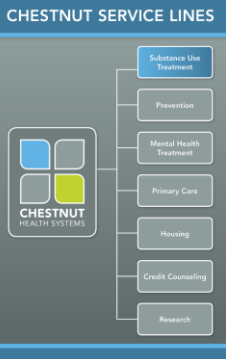
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## Substance Use Treatment



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Basic Facts about Cannabis

- Plant that contains mind-altering THC and other compounds
- Extracts can be made from the plant
- Methods include:
  - Joints, bong, blunts, vaporizers, resins, edibles, etc.
- Resins/extracts growing in popularity
- Extracts can deliver extremely large amounts of THC
  - Can lead to ER or explosions (using butane lighters) in severe cases

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Synthetic Cannabinoids

- Illicit synthetic cannabis (K-2, fake weed, spice, etc) has markedly different effects than cannabis and is much more potent (4-100 times).
- Usage of research chemicals can lead to an array of mental health effects, even after quitting.
- High usage rates among heavy cannabis users.
- Link between people who use spice exhibiting psychosis with no prior history of psychosis.
- Because the chemicals are relatively new the long-term effects of usage are relatively unknown.

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**Current Trends in Cannabis Usage**

- Cannabis is the most popular illicit drug in the United States.
- Estimated 8.3 % of people 12 years and older have used it in the past month.
- Most prevalent among young people between 18 and 25 (~20%)
- Since 2002 its use has declined in ages 12-17 and increased sharply in the senior population (55+)
- Noticeable increased intensity of heavy users (smoking daily) equals about one third of active users.
- Public perception of cannabis has steadily shifted.
- Estimated market for legal cannabis is \$7.1 billion as of 2016

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**Challenges in Cannabis Research**

- Many issues prevent researchers from answering questions tied to the health effects of cannabis use.
- Lack of diversity in research funding creates a gap in understanding.
  - In 2015, nearly 60% of all studies on cannabis through NIH were done by NIDA.
  - Less than 17 % of NIDA's studies investigated potential therapeutic effects of cannabis.
- Methodological Issues
  - Administration (Smoking, edible, vaporization, etc)
  - Placebo Issue
  - Over-reliance on self-report
- Case example
  - Colorado Researchers

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**Effects of Cannabis on the Brain**

- Short-term possible effects
  - Altered senses, altered sense of time, changes in mood
  - Impaired body movement, difficulty problem-solving
  - Impaired memory, hallucinations, delusions, psychosis
- Long-term possible effects
  - Using heavy amounts of cannabis at an early age may impair thinking, memory, and learning functioning.
  - Still studying potential long-term effects

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### Gauging Impairment

- Incredibly difficult to gauge a level of impairment based solely off a test (urine screen levels) or set amount of a substance.
- Many different variations of cannabis, including different strains with varying levels of THC.
- Some methods on ingesting cannabis can deliver inconsistent levels of THC
- Method of ingestion can affect how quickly it is absorbed and how long the effect lasts.

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### Potential Health Effects

- Breathing problems
- Increased heart rate
- Problems with child development during and after pregnancy
- Intense nausea and vomiting
  - Cannabinoid Hyperemesis Syndrome
- Wide range of cannabis-related products, varying ways it is taken, and levels of THC make it hard to pin-point what can lead to these symptoms.

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### Further Areas of Concern

- Rising THC levels in products
  - Increasing steadily over past few decades
  - Danger of edibles with delayed reaction in users
  - Popularity of edibles increases risk
  - Greater risk of addiction if exposed to high doses
- Vaping
  - FDA recently alerted the public to deaths related to vaping
  - Many suspected products contained THC or a combination
  - Still unclear, more research is needed.

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### Comorbidity...It's Complicated

- Common for those with mental health issues to use substances of abuse
- Many who have substance use disorders also meet criteria for mental health disorders
- Possible Explanations
  - Substance use as a risk factor for developing mental health issues
  - Mental health disorders as a risk factor for developing substance use disorders.
  - Shared predisposing risk factors for both mental health issues and substance use disorders.
- Explanation is still unclear
- Comorbidity makes determining causality difficult.

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### Mental Health Associations with Cannabis Use

- PTSD, depression, and anxiety do not appear to be more likely to *develop* in cannabis users.
- Compared to non-users, heavy cannabis users are more likely to have thoughts of suicide.
- Risk of developing social anxiety disorder is elevated with regular cannabis use.
- Bipolar Disorder
  - Limited evidence to suggest higher risk among cannabis users, greater risk among heavy users.
  - Moderate evidence suggest elevated symptoms of hypomania and mania, especially among heavy users.

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### Mental Health and Cannabis Use (continued)

- Schizophrenia and other psychoses
  - Heavy users of cannabis likely have increased risk of developing these issues.
  - Higher the use, greater the *risk*.
  - Greater risk if heavy cannabis use begins in adolescence
  - Moderate evidence of better performance on learning and memory tasks with history of cannabis use.

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### The Gateway Theory

- Moderate evidence exists that suggests cannabis leads to the use of other illicit substances.
- Studies also show most users of illicit substances first experiment with alcohol or tobacco.
- Large majority of people who use cannabis do not go on to use other illicit substances.
- Cross-sensitization is not unique to cannabis.
- Rather recent research suggests the "Exit" Theory.
- Important to note other key factors that can influence development of substance use disorders in addition to cannabis.

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### Is Cannabis Addictive?

- A recent survey in 2015 found that 22.2 million Americans identified as users of cannabis.
- Less than 19% reported having symptoms that would qualify as a substance use disorder.
- DSM-V substance use disorders are more of a spectrum (mild, moderate, severe).
- DSM-V removed legal problems as a criterion.
- Lack of official distinction between "risky" or "problem" use of cannabis.
- Research suggests 9% of users will become "addicted" to cannabis.

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### Cannabis Use Disorder (Severe) Example

- Meet Alex




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**Risk Factors for Problem Use of Cannabis**

Moderate Risk Factors

- Major depressive disorder
- Male
- Smoking cigarettes
- Exposure to combined use of abused drugs

Substantial Risk Factors

- Male smokers
- Beginning cannabis usage at an earlier age

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**Medical Marijuana**

- Term medical marijuana refers to treating symptoms of illness and other conditions with the whole, unprocessed plant or its basic extracts (cannabinoids).
- FDA has not recognized or approved the marijuana plant itself as medicine.
- Research of cannabinoids has led to two FDA-approved medications in pill form used to treat nausea and create appetite.
- THC and cannabinal (CBD) are of the most interest for treatment.
- Research is being done with marijuana and its extracts (over 100) to treat a variety of potential medical issues.

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**Why isn't the marijuana plant approved by FDA?**

- Need for large scale clinical trials in hundreds to thousands of human subjects.
- Not enough current clinical trials to show the benefit of the plant itself as opposed to some of the specific cannabinoids.
- Barriers to conducting research given its status as a Schedule 1 substance.
- More discussion is needed to examine these issues so the possible health impacts or health benefits can be more accurately determined.

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### Cannabis and Opioids

- Medical marijuana laws and prescription opioid use outcomes
  - Early research suggested possible relationship between availability of legal cannabis and reduction in overdose deaths.
  - NIDA Study in 2014 suggested from 1999-2010 overdose deaths in states that had legalized cannabis dropped by 21%
  - However, a 2019 study also conducted by NIDA found that the trend changed to an increase in overdose deaths by 22.7%
  - Difficult to examine causal relationship
  - More factors need to be researched to better understand the relationship.

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### Treatment

- Chestnut offers treatment for both adolescents and adults
  - Outpatient
  - Residential
- Treatment is:
  - Evidence-based
  - Individualized
  - Designed to work on both addiction and mental health
  - Gender-specific
- Family involvement is encouraged

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### How to Get Help

- Call (888) 924-3786
- Visit [www.chestnut.org](http://www.chestnut.org)
- SAMHSA Behavioral Health Treatment Services Locator
  - [www.findtreatment.samhsa.gov](http://www.findtreatment.samhsa.gov).

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### Conclusion

- Cannabis use covers an entire spectrum of products and chemicals used in a variety of ways.
- Research on cannabis is made difficult by a number of factors.
- More research is needed on the link between physical health, mental health, and cannabis use.
- Marijuana as a plant is not approved by the FDA, but two of its cannabinoids are approved.
- Cannabis has the *capacity* to become addictive, especially with increasing THC levels in products and the popularity of delivery methods like edibles.
- More discussion is needed on how to address potential dangers and potential opportunities related to the legalization of cannabis.

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### Questions/Discussion

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