

# Logbook

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## Schedule

Time	Must Be Completed
October - December	Get all my research done and start putting it on my tri-fold.
December - February	Finish putting stuff on tri-fold and start practicing presenting.
March	Make any last edits and finish up project.

October 26, 2025

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## Choose a Topic:

- Cannabis use (since it's become legalized) and how it affects mental health (Schizophrenia) and your overall health.
- ↳ How cannabis affects rats/mice/any animal studies leading up to legalization and after

I came up with this topic at last year's science fair. Two grade 11 students made a project called AMPAR and NMDAR Related Glutamatergic Neuroadaptations in the Amygdala as a Result of Alcohol Use Disorder. These students were sitting beside my sister and explained the project to my family and I. Part of their project was exploring a study where rats were exposed to ethanol and they observed their behavior. In 2018 Cannabis was legalized in Canada but a 2024 survey found that only 11% of Canadians know that daily/almost daily Cannabis use increases the risk of mental health problems. In 2024 Canada's population was 41.29 million. This means that approximately eleven million nine hundred seventy-four thousand one hundred people in Canada do not know how cannabis affects mental health. This is why I believe it is important for people to know the mental health and overall health effects of cannabis whether you are consuming or not.

## Citations:

<https://www.canada.ca/en/health-canada/services/drugs-medication/cannabis/research-clinical/canadian-cannabis-survey-2024-summary.html>

January 4, 2026

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# Background Research:

## • Cannabis effects health

↳ long-term

↳ short-term

### • Main risks:

- cognitive, psychomotor, memory impairments
- hallucinations
- impaired perception (can cause impaired driving)
- mental health problems (psychosis included)
- Cannabis use disorder
- respiratory problems
- reproductive problems

Consuming  
cannabis  
in high-risk  
way (most)

↳ mental or cognitive impairment

- increased heart rate
- increased appetite
- red eyes
- dry mouth
- decreased coordination and balance

↳ negative impact on brain development (under age 25)

- worsening mental health
- addiction
- harmful to respiratory health
- harmful to cardiovascular health
- harmful to reproductive health

## Citations:

- myhealth.alberta.ca → effects of cannabis
- healthcanada → lower risk cannabis use guidelines
- government of canada → cannabis in canada

Study

January 5, 2026

(4)

## Testable Question / Purpose:

The purpose of my project is to examine the health effects (including mental health effects) of cannabis consumption.

My main question is:

How does cannabis consumption affect human's mental and overall health?

## Hypothesis:

I believe that cannabis consumption will negatively affect human's mental and overall health. I believe that it will have a major negative impact on a person's mental health.

Final hypothesis:

The consumption of cannabis in humans will cause a decline in a person's mental and physical health because of the negative effects cannabis has on the human body.

January 11, 2026

- Wrote problem on CYSF Platform
- ↳ Many not aware of health effects due to cannabis consumption
- ↳ Negative effects on youth under 18
- ↳ Importance of knowing health effects
- Inputted thesis (in research section)

# Research

February 8, 2026

## Types of Cannabis Consumption:

- Inhalation (smoking, vaping)
  - Ingestion (edibles and drinks)
  - Topical (creams and balms) → on the skin
  - Sublingual (under the tongue)
- most common forms

- Most harmful → smoking, using high-potency products, using synthetic products, consuming frequently

## Resources:

- Government of Canada → Canada's lower-risk cannabis use guidelines
- healthline.com/health/healthiest-way-to-smoke-weed
- Cannabis use disorder
- my.clevelandclinic.org/health/articles/4392-marijuana-cannabis

February 12, 2026

- Two types of consuming Cannabis
  - ↳ high-risk
  - ↳ low-risk

## Cannabis Use disorder:

- addiction to cannabis
  - ↳ high-risk consumption
  - ↳ also Cannabis addiction
  - ↳ more severe

## Multiple symptoms of cannabis use disorder:

- taking cannabis in larger amounts and for a longer amount than intended
- having a strong desire or urge to use Cannabis

etc. (refer to resource: my.clevelandclinic.org/health/disease/cannabis-use-disorder)

History

• Factors contributing to substance use disorder

- THC
  - ↳ affects reward center of brain
- Genetics
  - ↳ vulnerability to disorder
- Mental Health Conditions
  - ↳ dual diagnosis
  - ↳ connection to genetic vulnerability
- Access and Exposure
  - ↳ use of cannabis by family or friends

February 13, 2026

- Cannabis in adolescents:
  - harm to developing brain
  - mental health problems
  - psychosis increased risk etc.
- Others see the same as adults
  - Cannabis use disorder

↳ more prone  
Resources:

- Aca cap, 2023
- CDC, 2024
- Cannabis use disorder, 2025

Mental Health Effects:

Mental Health Effects:

- Higher the THC content the more risk

February 14, 2025

- Mental Health Effects
  - ↳ high THC content
  - ↳ history of mental health disorders (in family)
  - ↳ high-risk cannabis consumption
- psychosis and schizophrenia occur in severe cases

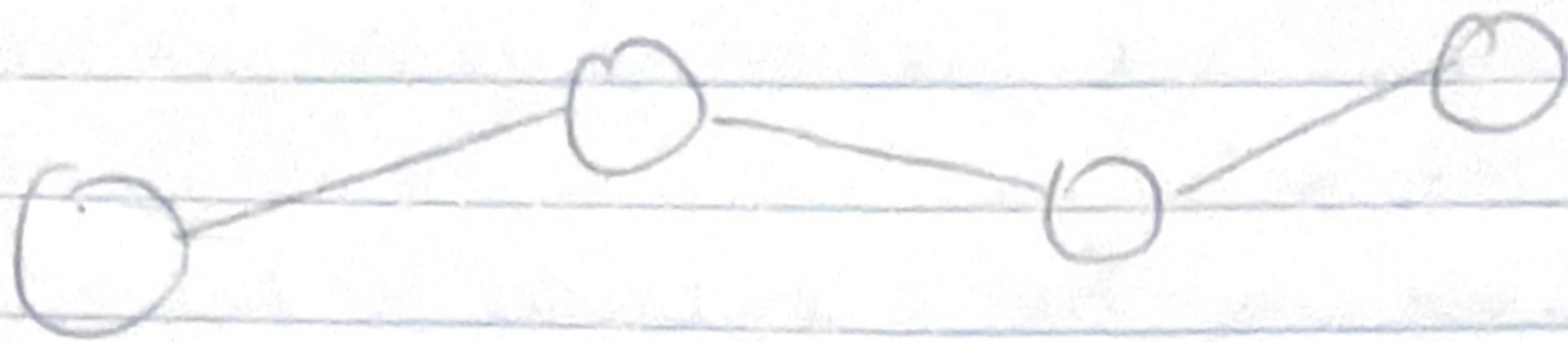
# Daily Notes and Ideas

February 8, 2026

- Cannabis Use Disorder

February 12, 2026

- On slides show the causes of cannabis use disorder like this:



- For slides (cannabis use disorder):

[my.clevelandclinic.org/health/diseases/cannabis-use-disorder](http://my.clevelandclinic.org/health/diseases/cannabis-use-disorder)

- Cannabis Effects on Children

↳ Talk about Cannabis Use Disorder

What I Need To Finish:

- Cannabis in adolescents ✓
  - Mental effects in adults ✓
  - Health effects in adults ✓
  - Effects in animals ✓
  - ↳ legalization and other ✓
  - Conclusion ✓
  - data ✓
  - method ✓
  - What's Next ✓
- could commercialize + cannabis disorder (first paragraph) ✓  
(do all together)

February 13, 2026

- Ways to combat addiction (w/ therapy, etc.) ✓
- In methad include use of AI overview ✓

# Method

Things to include:

- How I find research:
- 1) Specific questions for each section
- 2) Write a review
- 3) Find sources for that
- 4) Investigate sources and find more information

How I find studies:

- 1) Two parts → before and after legalization
- 2) Ask a question for each section
- 3) First to last reviewed
- ↳ because of varied number of studies
- more studies after legalization than before

# Data

- One graph showing increase in cannabis consumption among 18-24 year olds
- ↳ brain still developing
- ↳ may be because of Cannabis Act
- One graph showing rates of cannabis use disorder increasing based on hospitalizations
- ↳ becoming a rising issue at influencing society
- One graph showing that users of cannabis experience disorders than non-users
- ↳ mental health issues correlating to cannabis consumption

# Research (Continued)

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- ↳ depression and anxiety - harms short and long term memory
- ↳ driving impaired is illegal (affects coordination, etc.)
- ↳ Adolescents more likely to develop cannabis use disorder than adults

## Research:

- Health Canada, 2025

- Canada, 2025

## Physical Health Effects:

- Short-term

↳ increase heart rate and blood pressure

↳ bloodshot eyes

↳ dizziness

↳ headaches

↳ vomiting

↳ can't drive or operate equipment

- Long-term

↳ cause harm to lungs

↳ chronic bronchitis

↳ severe nausea

↳ increased risk of heart attack and stroke

↳ testicular cancer

## Research:

- Alberta Health Services

- Government du Québec

February 15, 2025

• Cannabis vaping

↳ increases risk of developing lung disease

↳ harms the lung cells which protect the lung

## Research:

- Bhat et al., 2023

• Effects in animals:

- Before legalization:

Hilroy

- Made rats lazy
- THC alters human brain's decision making
- Not many studies

February 16, 2025

After legalization:

- Vaporized cannabis altered neural activity in rats
  - ↳ impaired memory based on dose
- THC exposure in rats induced long lasting alterations in cognitive and motivational processes
  - ↳ regulate the pursuit of rewards
  - ↳ dependant on age
- Some rats had behavior changes

Resumes:

- Chudny, 2023
- Halbout et al., 2023

# Logs (After Research)

February 16, 2026

- Worked on method
- Worked on research

February 20, 2026

- Worked on method
- Found all data
- Edited up until the 2nd paragraph of mental Health Effects

February 22, 2026

- Finished writing
- Made my conclusion

February 27, 2026

- Had a second opinion for editing
- Worked on slideshow

March 1, 2026

- Finished slideshow
- Finished conclusion
- Finished what's next
- ~~add~~ Made powerpoint slideshow
- Made presentation video
- Finished acknowledgements
- Completed declarations

March 2, 2026

- Added my picture to the CVSE platform
- Added my presentation video to the CVSE platform

March 3, 2026

- Made and added Header image and project image to CYSF platform
- Scanned and added layouts
- Added GIF of slides
- Added citations in layouts

March - April:

- Make tri-fold
- Practice presentation

# Conclusion

~~In conclusion,~~ Cannabis consumption in human's causes harm to their mental and physical health. ~~proving my thesis to be correct.~~ The frequency and potency of cannabis ~~consumption~~ affects the <sup>impact</sup> ~~amount~~ of harm cannabis can cause a person (e.g. high-risk vs. low-risk). <sup>(2nd paragraph)</sup> Excessive cannabis use can lead to

addiction, called cannabis use disorder. ~~Although~~ This substance disorder is relatively common but not the worst form. Marijuana addiction is more harmful than cannabis use disorder and affects the mesolimbic system.

→ High-risk cannabis consumption can cause more severe ~~issues~~ <sup>issues</sup>. ~~Some~~ Psychosis, ~~and~~ schizophrenia, anxiety and depression are only a few. While ~~low~~ consuming cannabis at a high-risk can be detrimental, low-risk cannabis consumption also has negative effects.

→ The progression to cannabis use disorder is complex ~~just~~ as are the complications. However, there are treatments being made and used to combat this disorder.

→ Ultimately, high and low risk cannabis consumption can cause mental and physical health effects. This project accurately displayed the correlation between cannabis consumption and deteriorating human health.

Middle Paragraph:

Before the legalization of cannabis in Canada  
 few studies were conducted regarding this issue.  
~~Only one study~~ One study showed that  
 cannabis made rats less willing to try a "cognitive  
 demanding task." After legalization, more studies  
 were conducted. They showed that cannabis  
 altered neural activity, impaired memory, and  
 can create long-term motivational and cognitive  
 effects. This poses the question of why  
 cannabis was legalized in Canada.

# What's Next

The ~~connection~~ <sup>connection</sup> between cannabis and ~~degenerative human health~~

~~This project~~ made new questions regarding this issue. These ~~include~~ <sup>posed</sup>: Why was cannabis legalized? One major question was why cannabis was legalized in Canada, especially if it has major ~~negative~~ <sup>negative</sup> impacts on humankind.

To take this project further I would investigate the process ~~Canada~~ the Government of Canada used to legalize cannabis. ~~Depending on the results~~, this can give us information on ~~where~~ the reason for certain ~~restrictions~~ <sup>restrictions</sup> (ex. age) and if ~~more~~ <sup>they</sup> or ~~less~~ <sup>more</sup> need to be implemented or changed. These results can help us explore the reasons ~~tobacco~~ is legalized and how it impacts ~~society~~. ~~Along~~ <sup>In this project</sup>

~~with this, I would want to~~ I could explore ~~treatments for cannabis consumption~~, how cannabis is used to treat various medical conditions. ~~To further this~~, understanding the chemical composition of cannabis can aid in understanding how cannabis can treat these disorders. ~~Constructing this research could also~~ <sup>show</sup> ~~other~~ <sup>other</sup> ~~diseases~~ <sup>diseases</sup> which can be treated with cannabis.

If more diseases can be treated with cannabis, this can lead to breakthroughs in medicine. Experiments can be conducted with the hypothetical cannabis treatment. If proven successful, cannabis treatment could potentially improve and/or save people's lives. This could help address and ~~reduce~~ <sup>create</sup> ~~the~~ <sup>more</sup> ~~need~~ <sup>create</sup> ~~for~~ <sup>create</sup> ~~more~~ <sup>create</sup> ~~studies~~ <sup>create</sup> which can ~~help~~ <sup>create</sup> ~~society's~~ <sup>create</sup> ~~and~~ <sup>create</sup> ~~increase~~ <sup>create</sup> ~~interest~~ <sup>create</sup> in this topic.

Project could be ~~continued~~ <sup>continued</sup> at ~~the~~ <sup>the</sup> ~~same~~ <sup>same</sup> ~~level~~ <sup>level</sup> if the results are ~~deemed~~ <sup>deemed</sup> ~~as~~ <sup>as</sup> ~~logical~~ <sup>logical</sup>.

mainly analysis to be accurate with an experiment may be considered necessary, especially if tested on humans or animals. Level, article

Project