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**Cannabis and Canadian Youth:  
Rolling the Joint or the Dice?**

Dr. Oyedeggi Ayonrinde  
MBBS, FRCPsych, MSc, MBA

Providence Care 

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**Learning Objectives**

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| <p><b>1</b></p> <p>Gain insight into cannabis use by youth in Canada (pre and post legalization)</p> | <p><b>2</b></p> <p>Observe the role of cannabis in an early psychosis intervention programme for youth and young adults.</p> | <p><b>3</b></p> <p>Appreciate the need for innovative cannabis literacy across different sectors</p> |
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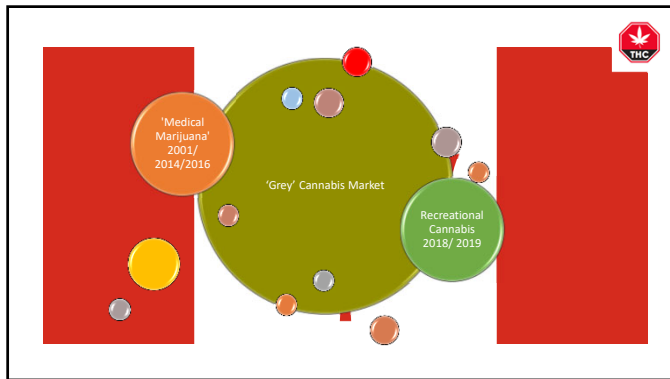
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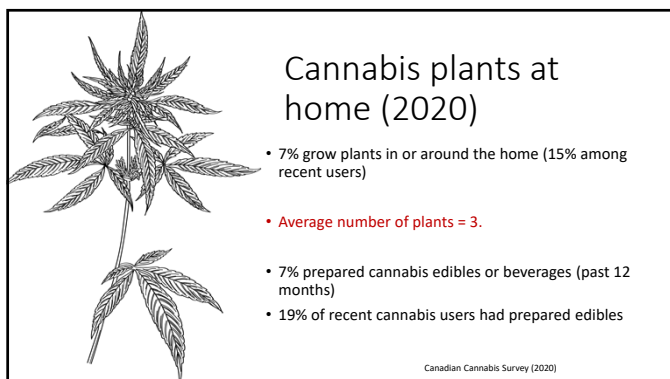
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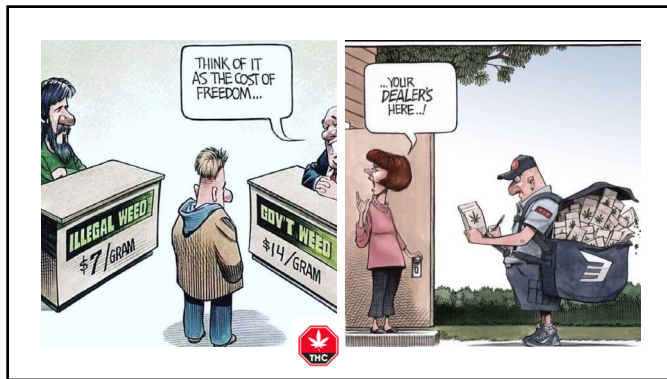
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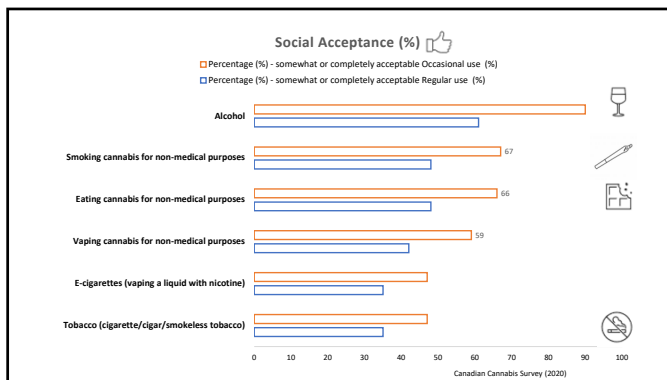
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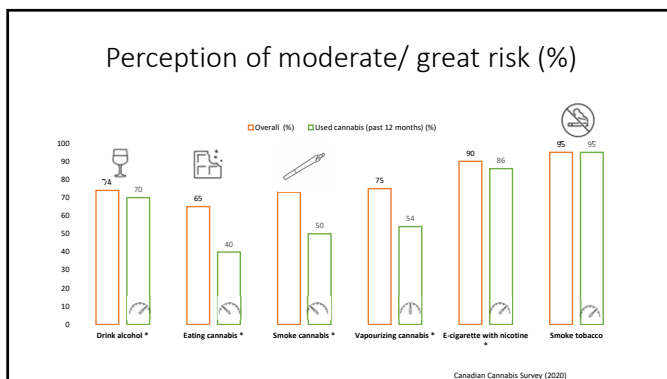
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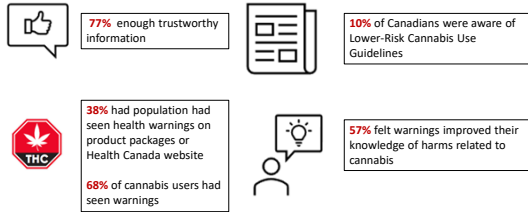
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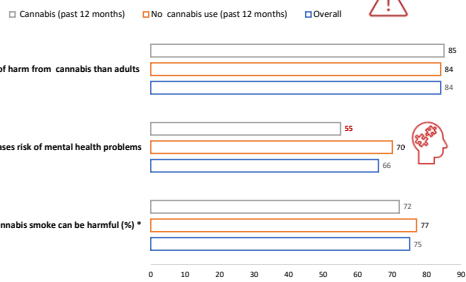
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### Access to trustworthy information/ health warnings



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### Knowledge or beliefs regarding cannabis-associated harms (%)



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### Health Canada – Former Warning Labels (2018-2019) – now changed

- Regular use of cannabis can increase the risk of psychosis and schizophrenia. Higher THC content can increase the risk of psychosis and schizophrenia.
- Regular use of cannabis can increase the risk of psychosis and schizophrenia. Higher THC content can lower the age of onset of schizophrenia.
- Regular use of cannabis can increase the risk of psychosis and schizophrenia. Young people are especially at risk.
- Adolescents are at greater risk of harms from cannabis. Early and regular use increases the risk of psychosis and schizophrenia.
- Adolescents are at greater risk of harms from cannabis. Using cannabis as a teenager can increase your risk of becoming addicted.
- Adolescents are at greater risk of harms from cannabis. 1 in 6 people who start using cannabis in adolescence will become addicted.

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WARNING: The smoke from cannabis is harmful.



WARNING: Do not drive or operate heavy equipment after using cannabis.

WARNING: Do not use if pregnant or breastfeeding.

WARNING: It can take up to 4 hours to feel the full effects from eating or drinking cannabis.

WARNING: The effects from eating or drinking cannabis can be long-lasting.

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**WARNING: Frequent and prolonged use of cannabis containing THC can contribute to mental health problems over time.**

Daily or near-daily use increases the risk of dependence and may bring on or worsen disorders related to anxiety and depression.

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**WARNING: Adolescents and young adults are at greater risk of harms from cannabis.**

Daily or near-daily use over a prolonged period of time can harm brain development and function.

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**WARNING: The higher the THC content of a product, the more likely you are to experience adverse effects and greater levels of impairment.**

THC can cause anxiety and impair memory and concentration.

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Relative levels of **THC** and CBD in cannabis recreational products

- 29% **higher THC** and lower CBD
- 11% higher CBD and lower THC
- 10% equal levels of THC and CBD
- 6% THC only
- 2% CBD only
- 16% mix of products.
- 25% levels of THC and CBD unknown



Canadian Cannabis Survey (2020)

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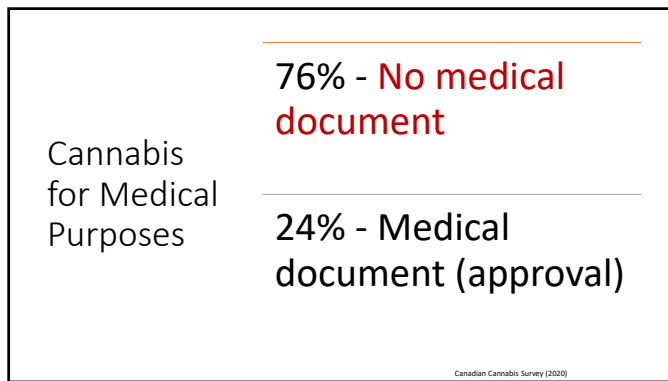
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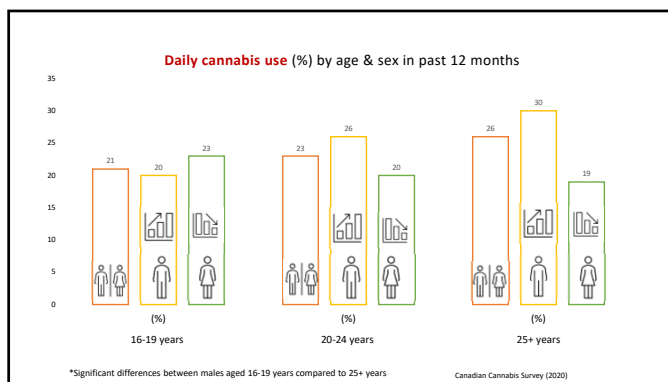
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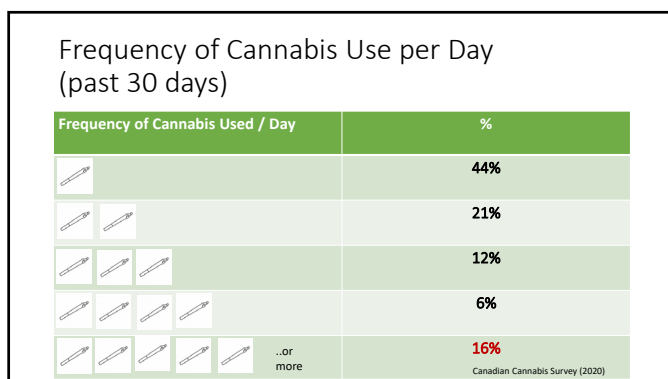
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Number of hours 🕒 “stoned” or “high”/ day  
(past 30 days)

| Hours “stoned” or “high”/ day | %   |
|-------------------------------|-----|
| < 🕒                           | 14% |
| 🕒 🕒                           | 35% |
| 🕒 🕒 🕒 🕒                       | 36% |
| 🕒 🕒 🕒 🕒 🕒 🕒                   | 9%  |
| > 🕒 🕒 🕒 🕒 🕒 🕒 🕒 🕒             | 7%  |

Canadian Cannabis Survey (2020)

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**Perceived benefits**  
of cannabis (%) in  
past 12 months



Work and education (14%)



**Mental health (46%)**



Physical health (25%)



Friendships/ social life (35%)



Quality of life (50%)



Home life/ marriage (27%)

Canadian Cannabis Survey (2020)

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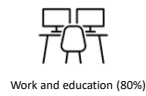
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**"No effect or harm"**  
from cannabis (%) in  
past 12 months



Work and education (80%)



**Mental health (47%)**



Physical health (66%)



Friendships/ social life (69%)



Quality of life (46%)



Home life/ marriage (27%)

Canadian Cannabis Survey (2020)

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### Professional help for cannabis use (treatment/ counselling)

97% of persons who had ever used cannabis did feel they needed professional help

Only **2%** had received professional help



Canadian Cannabis Survey (2020)

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### Spice and K2 (Synthetic)



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### Methods of Consumption



Smoked  
↓ 79%



Edible  
↑ 52%



Vape Pen  
↓ 24%



Vaporizer  
↓ 12%

Canadian Cannabis Survey (2020)

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## Cannabis use in Canadian youth (pre and post legalization)

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### Trends in youth cannabis use across cannabis legalization: Data from the COMPASS prospective cohort study

Alexandra M.E. Zuckermann<sup>a,c</sup>, Katelyn V. Battista<sup>a</sup>, Richard E. Bélanger<sup>b,c,d</sup>, Slim Haddad<sup>b,d</sup>, Alexandra Butler<sup>a</sup>, Mary Jean Costello<sup>a</sup>, Scott T. Leatherdale<sup>a</sup>

<sup>a</sup> University of Waterloo, School of Public Health and Health Systems, 200 University Avenue, Waterloo, ON N2L 3G1, Canada  
<sup>b</sup> Centre de recherche sur les addictions et la santé de l'Université Laval, 2305 Avenue de la Médecine, Québec City, QC G2L 0A4, Canada  
<sup>c</sup> Department of Psychiatry, Faculty of Medicine, Université Laval, 1057 Avenue de la Médecine, Québec City, QC G2V 0A4, Canada  
<sup>d</sup> Department of Social and Preventive Medicine, Faculty of Medicine, Université Laval, 1057 Avenue de la Médecine, Québec City, QC G2V 0A4, Canada

“Recreational cannabis legalization has not been followed by the slowing or reversing of concerning trends in youth cannabis use”

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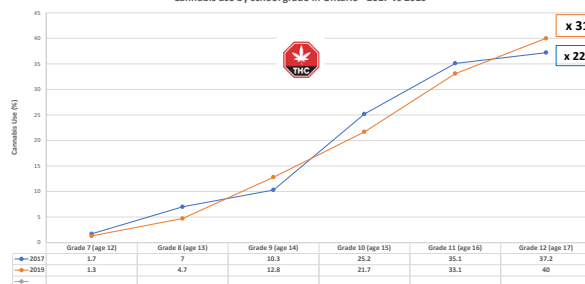
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Cannabis use by school grade in Ontario - 2017 vs 2019



Ontario Student Drug Use and Health Survey (OSDUHS) (2017, 2019)

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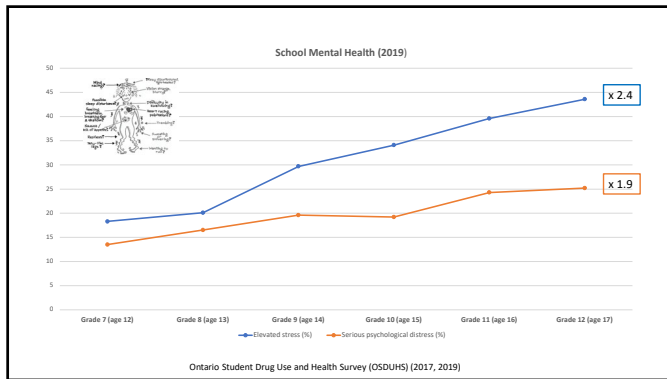
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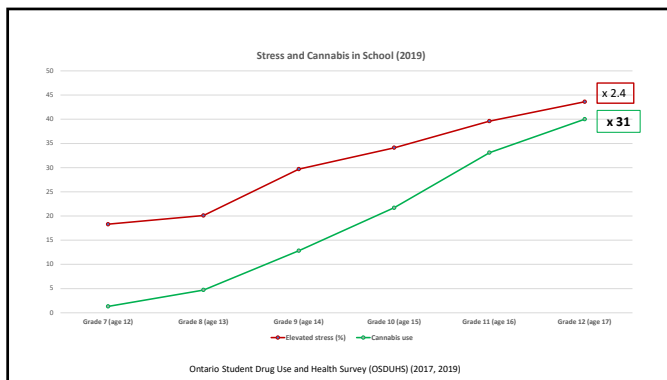
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|   |      |           |   |                           |
|---|------|-----------|---|---------------------------|
| % mental health care visit (past year)          | 7-12 | 1999-2019 | ↑ | Increased from 12% to 27% |
| % medical use of ADHD prescription drugs        | 7-12 | 2007-2019 | ↑ | Increased from 2% to 4%   |
| % prescription for anxiety, depression, or both | 9-12 | 2001-2019 | ↑ | Increased from 3% to 7%   |
| % fair or poor self-rated mental health         | 7-12 | 2007-2019 | ↑ | Increased from 11% to 27% |
| % elevated level of stress                      | 7-12 | 2015-2019 | ↑ | Increased from 29% to 33% |
| % moderate-to-serious psychological distress    | 7-12 | 2013-2019 | ↑ | Increased from 24% to 44% |
| % serious psychological distress                | 7-12 | 2013-2019 | ↑ | Increased from 11% to 21% |
| % suicidal ideation (past year)                 | 7-12 | 2001-2019 | ↑ | Increased from 11% to 16% |
| % suicide attempt (past year)                   | 7-12 | 2007-2019 | ▬ | Stable                    |

Ontario Student Drug Use and Health Survey (OSDUHS) (2017, 2019)

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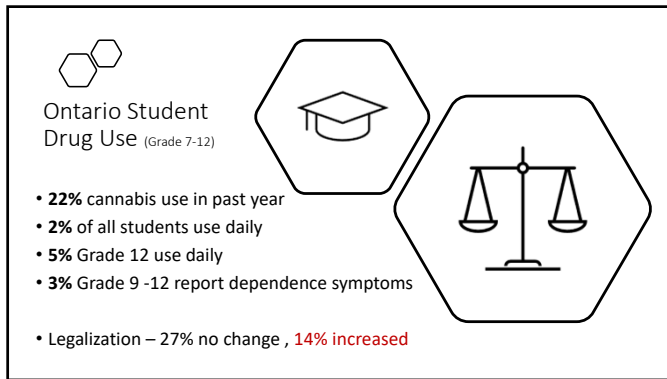
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**Ontario Student Drug Use** (Grade 7-12)

- 22% cannabis use in past year
- 2% of all students use daily
- 5% Grade 12 use daily
- 3% Grade 9 - 12 report dependence symptoms
- Legalization – 27% no change , 14% increased

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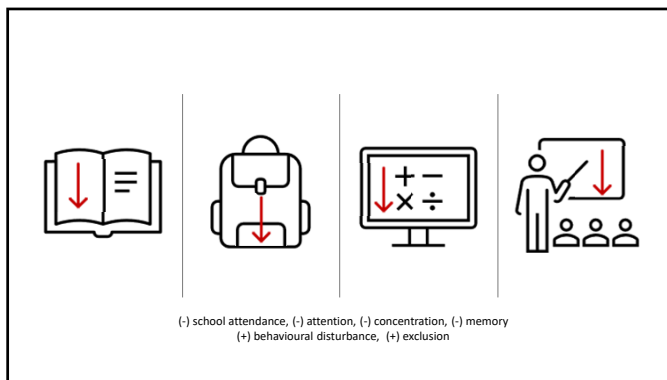
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(-) school attendance, (-) attention, (-) concentration, (-) memory  
(+) behavioural disturbance, (+) exclusion

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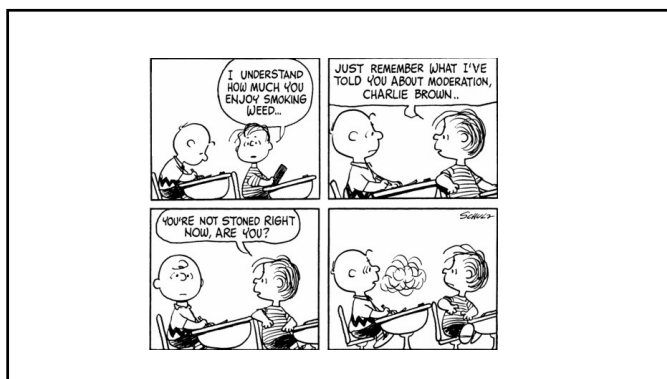
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I UNDERSTAND HOW MUCH YOU ENJOY SMOKING WEED...

JUST REMEMBER WHAT I'VE TOLD YOU ABOUT MODERATION, CHARLIE BROWN...

YOU'RE NOT STONED RIGHT NOW, ARE YOU?

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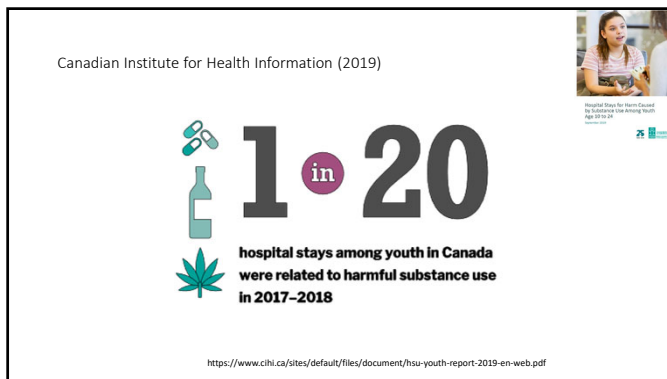
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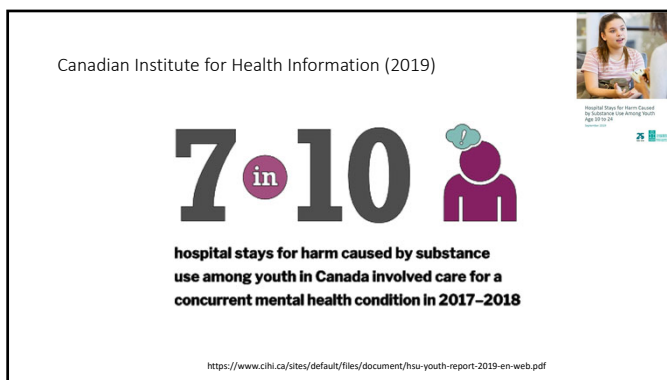
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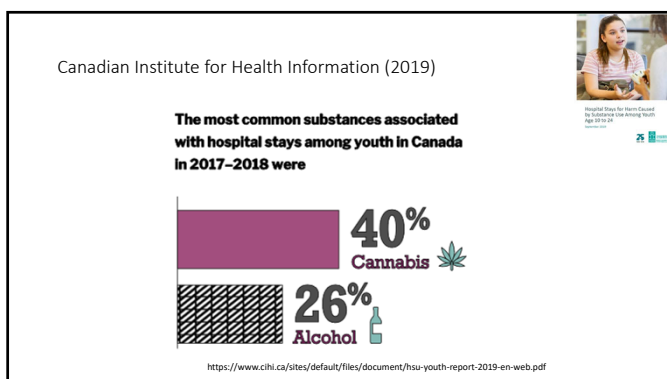
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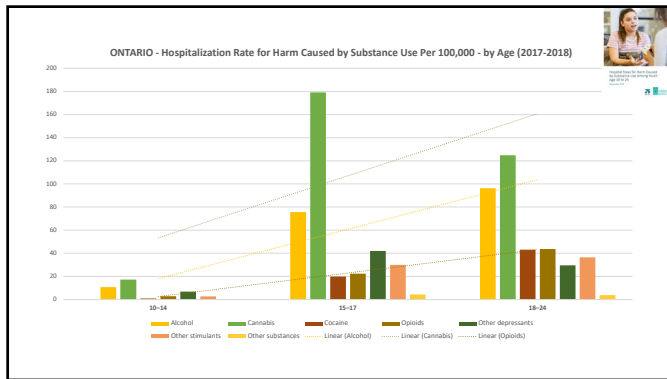
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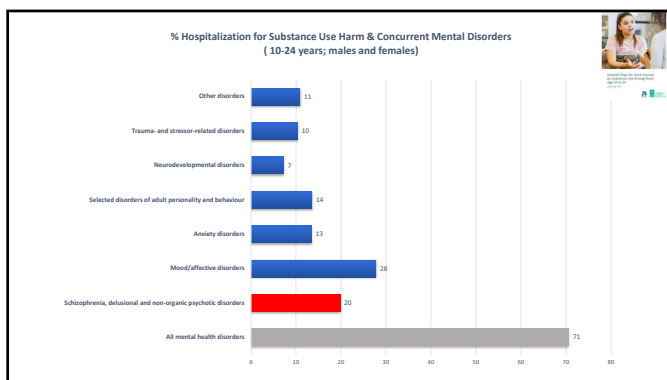
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The role of cannabis in an early psychosis intervention program for youth and young adults

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
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### Early Psychosis Intervention Program

- 14-35 years
- Male 2.6 : Female 1
- 82.8% self report cannabis use
- 68.9% positive urine toxicology

Ayonrinde & Alhujaili, RCPsych 2019

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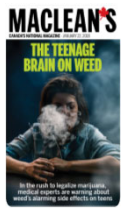



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• 13.5% failure to complete high school

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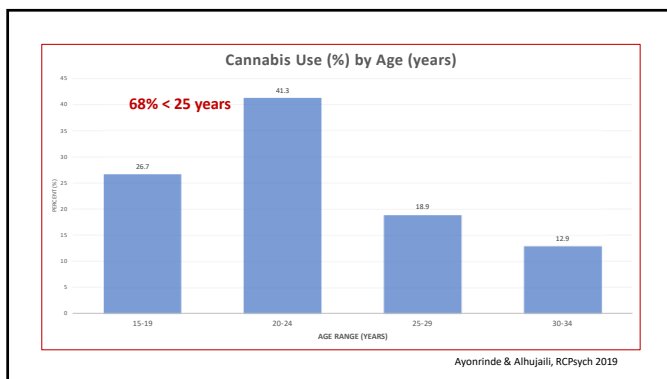
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### Cannabis Effects (dose dependent)



Recreational and use for medical purposes targeted at desired effects

- Reduced anxiety
- Sleep
- 'High'
- Pain reduction



Higher potency THC associated with greater adverse effects

- >THC

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### Cannabis Effects (dose dependent)



Adverse effects are dose dependent  
Also influenced by:

- THC : CBD ratios
- Potency
- Route
- Quantity consumed
- Rate of consumption
- Tolerance



- Frequency of consumption
- Endocannabinoid system
- Genetic factors
- Age
- Gender
- Experience
- Other chemicals in product

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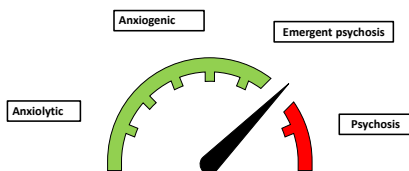
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### Schematic THC Potency Effect



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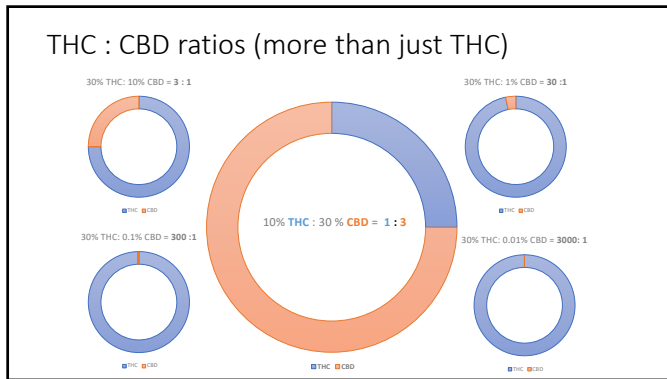
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**Psychosis Risk**

- Frequent
- Heavy use
- High potency (THC)
- Early age
- Developing brain (<25 years)
- History of mental illness
- Family history of mental illness

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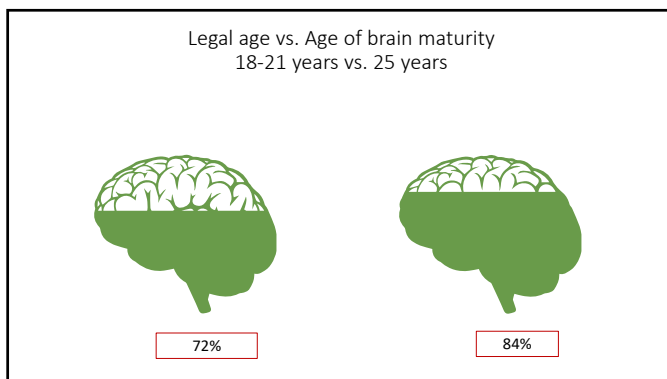
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Adolescence



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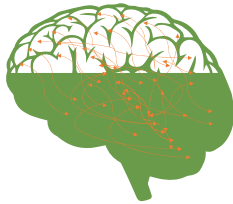
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Developing brain – proliferation, synaptogenesis, rewiring



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Developing brain – Endocannabinoid changes, dendritic pruning, myelination



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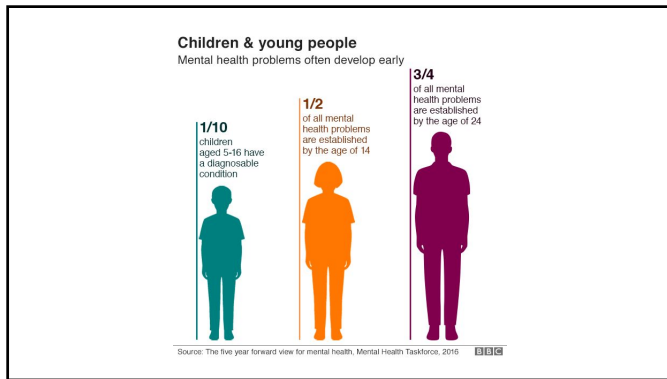
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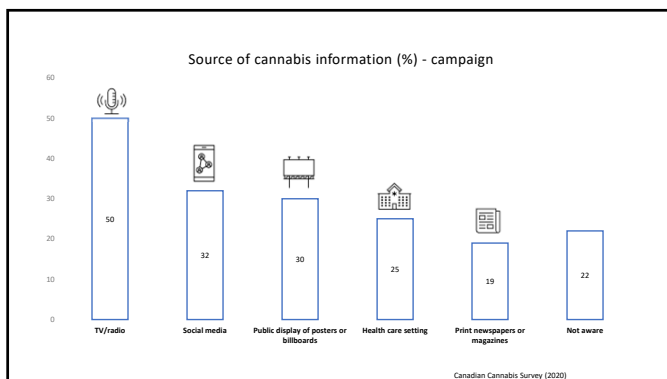
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THE HILL TIMES | MONDAY, JANUARY 21, 2019

## MJ-101: time for 'higher' knowledge about cannabis

What is ideal age for cannabis literacy to start and when should it stop, if ever? Start young and don't stop. Many youth may face challenges with employment screening, insurance and professional regulatory bodies e.g. Armed Forces, police, public transport drivers, health and construction, to mention a few. What does a positive cannabis test mean, without a criminal record?

**Charles Kennedy**  
Cannabis Literacy

**LIBERALS' ANSWER TO DRUGS: PRECIOUS LITTLE**

**GOVERNMENT: MARIJUANA OUT OF CANNABIS PUBLIC EDUCATION**

**LOOK AHEAD AT CANNABIS LEGALIZATION IN 2019**

**MUNICIPALITIES: TO SAVE EFFECTIVE CANNABIS LEGALIZATION**

**CANNABIS LEGALIZATION IN CANADA**

**MJ-101: THE FOG OF KNOWLEDGE ABOUT CANNABIS**

THE HILL TIMES | MONDAY, APRIL 29, 2019

## Policy Briefing Health

### Edible cannabis: countdown to the rocket launch

Health Canada has proposed regulating edibles that allow a maximum of 10 mg of THC per portion. However, it will take considerable literacy and self-awareness to gauge individual dose responses.

**Charles Kennedy**  
Cannabis Literacy

**LIBERALS' ANSWER TO DRUGS: PRECIOUS LITTLE**

**GOVERNMENT: MARIJUANA OUT OF CANNABIS PUBLIC EDUCATION**

**LOOK AHEAD AT CANNABIS LEGALIZATION IN 2019**

**MUNICIPALITIES: TO SAVE EFFECTIVE CANNABIS LEGALIZATION**

**CANNABIS LEGALIZATION IN CANADA**

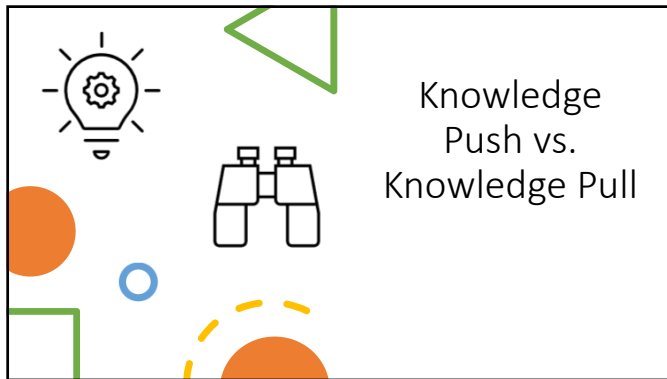
**MJ-101: THE FOG OF KNOWLEDGE ABOUT CANNABIS**

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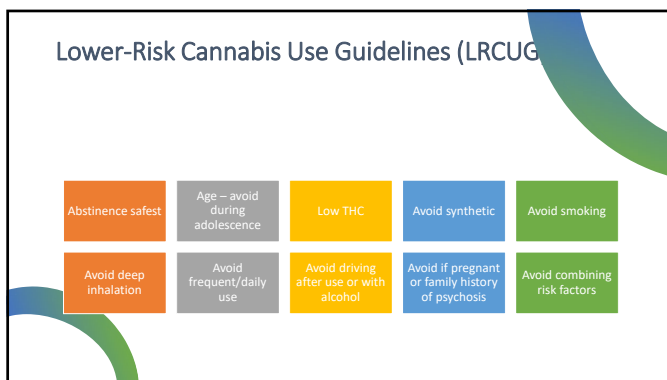
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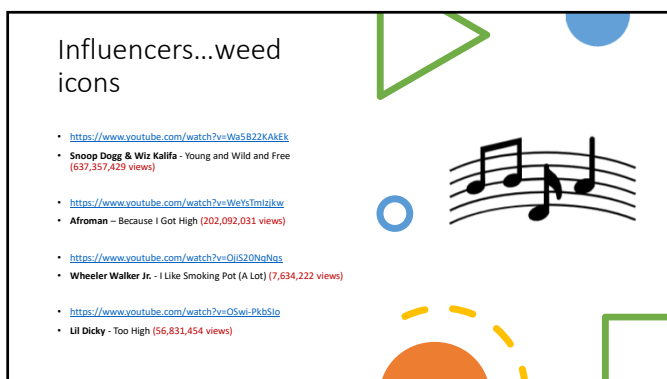
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vs. Logic (mental health icon) – Suicide help

- <https://www.youtube.com/watch?v=Kb24RrHlbFk>
- **Logic** - 1-800-273-8255 ft. Alessia Cara, Khalid
- **423,524,162 views**
- 402,535 comments



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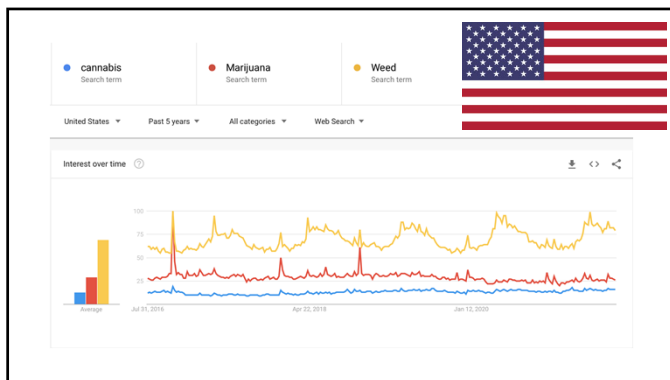
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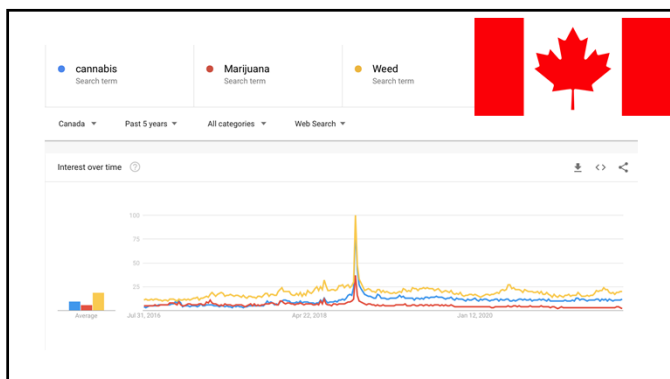
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COVID & Cannabis


**52%** of cannabis users increased consumption during first wave of COVID-19 (CAMH, 2021)

**40%** cannabis users report increased use (Mental Health Commission, 2021)

**40%** cannabis users report problematic use (Mental Health Commission, 2021)

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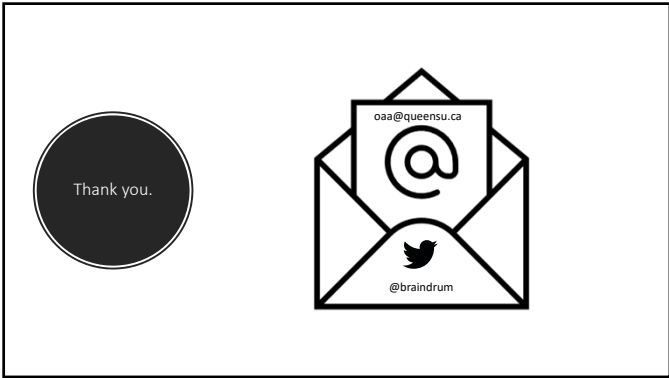
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