Cannabis and Special Risk Populations

Cannabis may not be suitable for all patients. Several publications from Health Canada, the CFPC, and others, have identified a set of special-risk populations in the context of both medical and recreational cannabis use. More Level 1 research is needed on both the therapeutic and adverse effects of cannabis for specific presentations and populations.

This resource provides an overview of the risks of cannabis use in the following commonly-cited populations:

- Women who are pregnant, breastfeeding, or planning to become pregnant
- Children and youth under 25 years
- Individuals with current, past, or family history of psychosis

Women who are pregnant, breastfeeding, or planning to become pregnant

Pregnant women and fetuses

- If a woman consumes cannabis while pregnant, she will expose the fetus to delta-9-tetrahydrocannabinol (THC)—the primary psychoactive component in cannabis—through her bloodstream.

- A 2016 systematic review and meta-analysis of evidence shows that fetuses exposed to THC are more likely to experience decreased birth weight and increased placement in NICU/ICU.

- Evidence shows that women who consume cannabis during pregnancy have a greater risk of anemia.

- Acute effects of cannabis consumption include a decrease in blood pressure, which may increase the risk of falls causing injury to both mother and fetus.

- Findings from two prospective longitudinal cohort studies show that heavy in utero exposure (at least 5 times per week) to THC can negatively affect children's neurocognitive development. These effects include but are not limited to:
  - hyperactivity
  - deficits in memory, verbal and visual reasoning, verbal skills
  - reduced academic achievement
  - increased risk of early initiation of substance abuse.

- Because cannabis use is often concurrent with alcohol and tobacco use, most research has been unable to isolate the effects of cannabis use exclusively. There are studies, however, that point to higher instances of negative effects on the fetus when cannabis and tobacco are combined during pregnancy (compared to either cannabis or tobacco alone).
Breastfeeding women

- THC is stored in fatty tissues and accumulates in breast milk. Recent studies have shown that the THC in breast milk is subsequently metabolized by breastfeeding babies.\(^6,12,15\)
- Several reports indicate that babies exposed to THC in breastmilk may experience negative short-term effects, including:\(^6,16\)
  - lethargy
  - reduced muscle tone
  - poor feeding habits

Women attempting to conceive

- There is limited evidence that suggests cannabis consumption may negatively impact a woman’s ability to conceive by:\(^6,17,18,19\)
  - disrupting hormonal regulation and menstrual cycles
  - reducing movement of ova through the oviducts
  - decreasing success of in vitro fertilization
- Research has also shown that regular (at least once weekly) cannabis consumption by males can decrease sperm count by up to 29%,\(^6,12\)
  - disrupting hormonal regulation and menstrual cycles
  - reducing movement of ova through the oviducts
  - decreasing success of in vitro fertilization

Also see The Society of Obstetricians and Gynaecologists of Canada’s Position Statement and Fact Sheet:
- Marijuana use during pregnancy
- Cannabis and Pregnancy Don’t Mix
Available on the SOGC’s website: https://sogc.org

Children and youth under 25 years

Under the age of 25

- The human brain continues to develop until the age of 25. Multiple sources have established that regular cannabis use during adolescence and early adulthood can cause functional and structural changes to the brain, impairing its development.\(^2,7,21,22,23,24\)

Children

- Cannabis is not appropriate for medical use in pediatric populations except in very specific circumstances, including certain forms of refractory epilepsy (e.g., Dravet syndrome).\(^25\)
- Cannabis use during adolescence has been associated with:
  - increased risk of cannabis use disorder (approximately one in six)\(^26,27\)
  - increased risk of developing mental health problems, including anxiety, depression, psychosis, and schizophrenia\(^21,28,29,30,31,32\)
  - increased risk of cognitive deficits and poorer school performance\(^21,33,34\)

Also see the Canadian Paediatric Society’s position statements:
- Is the medical use of cannabis a therapeutic option for children? (February 2016)
- Cannabis and Canada’s children and youth (May 2017)
Available on the CPS website: www.cps.ca
- Cannabis use increases the risk of psychosis. Individuals who have used cannabis in their lifetime have a 40% higher risk of developing a psychotic outcome than those who have not used cannabis.\(^8, 21, 35, 36, 37\)

- Research has identified several factors that increase the risk of developing psychosis or schizophrenia among cannabis users:

| Use in Adolescence | Individuals who begin using cannabis before the age of 16 have a higher risk of developing nonaffective psychosis compared to those who started cannabis use later, or who never used cannabis.\(^7, 38\)
|                   | More than 50% of youth who develop psychotic symptoms from cannabis use will develop a future psychotic disorder.\(^32\)
|                   | Psychiatric patients who use cannabis during adolescence and early adulthood experience their first psychotic episode three to six years earlier compared to those who do not use cannabis.\(^8, 19, 37, 39\)

| Frequent Use | There is a direct dose relationship between frequent cannabis use and the risk of developing psychosis and schizophrenia.\(^8, 42, 40, 42\)
|              | Individuals who use cannabis daily are two to three times more likely to be at risk of developing psychotic disorders than those who do not use cannabis.\(^8, 41\)

| High THC Potency | Individuals who use cannabis products with a high THC (16% average) potency on a daily basis are at a greater risk of experiencing a psychotic episode. They also experience their first psychotic episode earlier than both non-users and daily users of less-potent cannabis products.\(^37\)

| Genetic Predisposition to Psychotic Disorders | Cannabis use has been shown to trigger or amplify a genetic predisposition to psychotic disorders.\(^2, 7, 36, 42\)
|                                               | For individuals with a first-degree relative who has a history of psychosis, consuming cannabis daily could increase the risk of developing a psychotic disorder by up to ten times.\(^8, 42\)

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**Canadian Psychiatric Association Position Statement:**

- *Implications of Cannabis legalization on youth and young adults*

Available on the CPA website: [www.cpa-apc.org](http://www.cpa-apc.org)