

## Edibles - Cannabis-infused food products

### Why edibles? - Risks of smoking

- Toxins produced during smoking have negative effects on the respiratory system (National Academies, 2017)
- Cannabis is often smoked in a joint along with tobacco, which:
  - Has an addictive potential of 68% at first use (Drugcom, 2011)
  - Is a carcinogen and can cause other diseases (TK, 2020)

### Production & effects of edibles

- Cannabis-infused edibles and beverages have been consumed since 1000 BC (e.g. the drink "Bhang") and are deeply embedded in cannabis culture (Godlaski, 2012)
- THC source material has already been heated/decarboxylated and is active
- Examples of common edibles include THC-enriched cookies, brownies, chocolates, wine gums, candies, or beverages
- After oral ingestion, the active ingredients are absorbed via the digestive tract
- Effect occurs at the earliest after approx. 30 min and reaches peak after approx. 2-4 hours (depending on dose, body weight, stomach filling) (Grotenhermen, 2003)
- Long shelf life, even frozen (depending on MHD of ingredients)
- Easy to take, odorless and discreet
- No inhalation of smoke (thus compliance with non-smoker protection law)
- No expensive vaporization device necessary



### Risks of self-produced edibles

- Unintentional overdose (Barrus et al. 2016)
  - No information about THC content
  - Overestimation of the amount of cannabis source material used
  - Later onset of effects and good taste can lead to overconsumption
- (Accidental) use by children and adolescents (Richards et al., 2017)
  - No child-resistant packaging
  - No warning labels
  - Tendentially found in household bakery and/or candy form.
- Contamination with mycotoxins, salmonella, heavy metals, pesticides, etc. possible if not tested to food standards
- Potential sale in the illegal market without traceability of ingredients

### Advantages of edibles from industrial production

- High dosage control due to precise indication of THC content and uniform dosage units
- Child-resistant packaging and visible warnings
- Certified raw material with transparent manufacturing chain
- Verifiable hygiene during production and analysis for contamination according to food standards and HACCP
- Best before date prevents food poisoning after expiration of ingredients
- List of ingredients prevents incompatibilities and allergic reactions (nut, egg, gluten, etc.)

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### Possible regulation of edibles

- Production according to food standards, HACCP
- Uniform dosage units with defined THC content and traffic light system (very light=2.5 mg THC (green), light=5 mg (yellow), medium=10 mg (orange) , strong=20 mg (red))
- Sale in child-resistant packaging, or refilling of a reusable child-resistant packaging in the store
- Communicate safer-use guidelines to consumers

### Safer-use guidelines for edibles (Canadian Centre on Substance Use and Addiction, 2019)

1. Read label carefully (for THC and CBD concentration and directions for use).
  - Inexperienced users should not consume more than 2.5 mg of THC and wait for the effects to be felt first
2. The effect of ingesting cannabis lasts longer than inhaling cannabis
  - Effects can last up to 12 hours, with residual effects lasting up to 24 hours
  - Inexperienced users should use edibles in a place where they feel safe and comfortable, accompanied by friends or family members who have experience using these products
3. The effects of oral cannabis ingestion can be more intense than those of inhalation
  - Liver converts THC into a stronger form when taken orally
  - Therefore, inexperienced users should not consume more than 2.5 mg of THC
4. It takes time for the full effect to set in
  - Intoxicating effect starts after about 30 minutes at the earliest and reaches its peak after about 2-4 hours
  - At high doses, residual effects can last up to 12-24 hours after consumption
5. Correct storage of edibles and cannabis products
  - Proper labeling and child-resistant containers which are out of reach and sight of children and pets thereby preventing accidental ingestion
6. No mixed use with alcohol or other substances
  - Simultaneous use of cannabis with alcohol or other substances can significantly increase the risk of over-intoxication and impairment
7. Regular cannabis use may adversely affect mental health
  - Daily or near-daily cannabis use increases risk of dependence and may cause or exacerbate anxiety or depression

### Sources

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