

How to help patients find a safe and effective dose

Use this guide to begin supporting patients on appropriate and individualized titration and administration.



Background:

- Cannabis is available to patients in many strains and formulations, with varying THC and CBD concentrations
- Due to limited evidence on dosage and interval, there are no validated dosage recommendations
- Prescribers might not include suggested THC and CBD amounts, dosage regimens or method of administration on medical authorization
- Many variables can influence the efficacy and safety
- Slow titration with careful assessment in collaboration with the patient and prescriber is recommended

Patient response to cannabis can vary by:

- Patient's other medications, conditions, prior exposure, age, genetics, food
- Route of administration: inhalation, ingestion, product formulation
- THC and CBD concentrations

The therapeutic effects of other compounds found in cannabis material, such as terpenes, are not yet well understood.

Finding the right therapeutic dosage is a very individualized process for each patient!

Pharmacists can:

- **ASSESS** if patient is taking an appropriate cannabinoid
- **ADVISE** on appropriate dosing, titration and the use of a symptom log
- **COUNSEL** and **EDUCATE** on side effects



Dosage guidance provided in this document is extrapolated from evidence on cannabinoid-based prescription medications and best-available evidence.

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Remember Roberta?

Roberta is a 77-year old female with type 2 diabetes and diabetic neuropathic pain who sought your advice on the possibility of taking cannabis to help her pain. After appropriate assessment and discussion, you advised a trial of a high CBD/low THC edible oil and scheduled a follow-up in 1 week.

After consulting with you, Roberta's physician prepared a medical authorization advising Roberta to initiate treatment with an edible oil containing 1 mg/mL THC:20 mg/mL CBD, for a trial of 3 months, and stating she may obtain up to 1 g/day of medical cannabis from a Licensed Producer (LP). Roberta brings her bottle of oil to her follow-up appointment with you.

ASSESS

Is this an appropriate cannabinoid for Roberta?

A high CBD/low THC edible oil minimizes Roberta's exposure to THC and is easily titrated.



Onset of physiological effects of ingested cannabis can take anywhere from 30 minutes to 4 hours, with peak effects anywhere from 2 to 4 hours. Duration typically lasts 6 to 8 hours, but may last up to 24 hours.¹

ADVISE

What is an appropriate starting dose and titration approach?

You advise Roberta to begin with a low starting dose of 0.1 mL of this oil (i.e., 2 mg CBD) once a day, and titrate **slowly** over the next 2 weeks.



Common short-term potential adverse effects:

- Dry mouth
- Drowsiness, dizziness, headache
- Reduced attention span, reactivity, judgment, problem-solving ability
- Psychomotor impairment
- Feeling high (relaxed, euphoric, distorted perception)



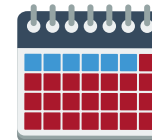
Days 1-3:

- Take one dose of 0.1 mL (i.e., 2 mg CBD) orally, in the early evening
- Assess: What did you feel, when? How long did effects last? (Consider providing a validated functional assessment tool to the patient)
- Record:
 - Date and time of dose
 - Amount of dose in mL and/or mg
 - Time of onset of effects
 - Effects on pain symptoms (use pain scale)
 - Any adverse effects
 - Duration of effects



Days 4-6:

- Take one dose of 0.2 mL (i.e., 4 mg CBD), orally, in the early evening
- Continue to assess and document effects
- Problematic effects at any point: stop titration and consult physician



Days 7-10 and beyond:

- Take one dose of 0.3 mL (i.e., 6 mg CBD), orally, in the early evening. Every 3 days, increase this dose by 0.1 mL (i.e., by 2 mg)
- Once an effective single dose is determined, repeat that dose 2 or 3 times per day as needed



There are minimal risks of fatal overdose with CBD, and no published daily maximums (except for psychosis and some seizure disorders).²

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COUNSEL



The mg/mL of CBD and THC (i.e., the concentration) in any oil formulation will vary! Patients will need advice on correct volume of oil to administer, based on concentration. LPs often include a 1 mL oral syringe, allowing patients to titrate in 0.1 mL increments.

You review this titration approach with Roberta, demonstrating the appropriate volume to administer at each step. You provide her with a log to record symptoms and effects, and counsel her on potential adverse effects. You suggest she take her cannabis with food as it may increase its absorption, advise her on typical duration of effects and instruct her to refrain from driving for at least 6 hours after consuming her cannabis.^{2,3} You further remind Roberta to keep her cannabis in a locked box, out of reach of children and pets. You send her physician a note documenting your discussion with Roberta and agree to a follow-up in 2 weeks, before she returns to her physician.



Remember Amar?

Amar is a 36-year old male lung cancer patient whose physician has now prescribed 1 mg nabilone twice a day to manage his chemotherapy-induced nausea and vomiting (CINV). Amar began taking his nabilone the night before his chemotherapy cycle.

Two weeks later, you get a call from Amar. He tells you he stopped taking his nabilone as it made him feel drowsy and “down”, and didn’t relieve his nausea. Instead he purchased some dried cannabis from an authorized retailer and has been smoking it in addition to taking his other anti-emetics. He wants your advice on how to continue taking cannabis.

ASSESS

Is this an appropriate cannabinoid for Amar?

Cannabis can be considered as an adjunctive treatment for CINV if other therapies, including prescription cannabinoids, have failed.⁴ Inhaled cannabis takes effect more quickly than ingested cannabis. Smoking cannabis is not generally recommended due to harmful products of combustion, but vaporization (which produces vapour without combustion) could be considered. The long-term risks of vaporization are unknown.^{1,2}



A typical joint may contain 0.5 g to 1.0 g of dried cannabis material, which might contain 10% THC. Bioavailability of inhaled cannabis is estimated to be anywhere from 15% to 50%. Amar could be getting 7.5 mg to 50 mg THC per joint.^{1,3}

ASK

- “How many joints are you smoking per day?”
- “What are the THC and CBD concentrations of your cannabis?”
- “What are the effects and how long do they last?”

Amar tells you he is smoking 1 to 2 joints per day but doesn’t know the THC or CBD concentration. He starts to feel less nauseated within 30 minutes. He can keep his food down and is sleeping better, but inhaling makes him cough, which leaves him weakened. He also feels “high” after smoking.

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Amar is getting rapid symptom relief from his smoked cannabis and wants to keep taking it. Inhalation irritates his airways, so vaporization may not be appropriate, but he appears to tolerate cannabis. You suggest a **balanced THC/CBD edible oil formulation**.



A higher starting dose and more rapid titration may be considered in younger patients who have demonstrated they can tolerate cannabis.



Combining THC with CBD can help reduce THC-mediated side effects.²

ASSESS

What is an appropriate initiating dose and titration approach?

- Choose an oil formulation such as 10 mg THC/mL: 10 mg CBD/mL



Day 1:

- Take one dose of 0.2 mL (i.e., 2 mg THC and 2 mg CBD of this oil), orally, in the early evening to assess effect; document effects in log



Days 2-7:

- Increase the single daily dose by 0.2 mL, until an effective dose is reached
- Once effective dose has been determined without problematic effects, consider repeating it 2 to 3 times per day



Days 7-10 and beyond:

- Once effective dose has been determined without problematic side effects, consider repeating it 2 to 3 times per day

You document your assessment and recommendation, and send them to Amar's physician.

COUNSEL

You further counsel Amar on some things to expect if his physician agrees with switching from nabilone to THC/CBD edible oil. THC has a sedating effect, so it might be preferable in evening, but well before bedtime to assess effects. THC is responsible for the euphoric effects of cannabis, so he may continue to experience a high. You remind Amar that oral cannabis will not start working as rapidly as smoked cannabis, but the effects should last longer. Tolerance to THC is possible, so you further advise Amar to not self-titrate beyond exceed 1 mL per dose (i.e., 10 mg THC) and 3 doses per day without further shared discussion.



Exceeding 20 mg to 30 mg of THC per day may increase adverse events without improving efficacy.²

1. RxTx/CPS online: Cannabis. Ottawa (ON): Canadian Pharmacists Association; 2018. Available : www.myrxtx.ca (accessed Dec. 4, 2018).
2. MacCallum CA, Russo EB. Practical considerations in medical cannabis administration and dosing. *Eur. Journal of Int Med.* 2018 Mar; 49:12-19.
3. Government of Canada. Information for Health Care Professionals: Cannabis and the Cannabinoids. October 2018. Available: www.canada.ca/en/health-canada/services/drugs-medication/cannabis/information-medical-practitioners/information-health-care-professionals-cannabis-cannabinoids.html (accessed Dec. 4, 2018).
4. Allan M, Finley C, Ton J, et al. Simplified guideline for prescribing medical cannabinoids in primary care. *Can Fam Physician.* 2018 Feb; 64(2):111-120.

This document is only intended to provide evidence-based guidance to clinicians in discussing cannabinoids with their patients and should not replace clinical judgment based on individual patient's needs and circumstances.

For more information, consult CPhA's series of practice development resources on using cannabis as a therapeutic agent at www.pharmacists.ca/cannabis
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