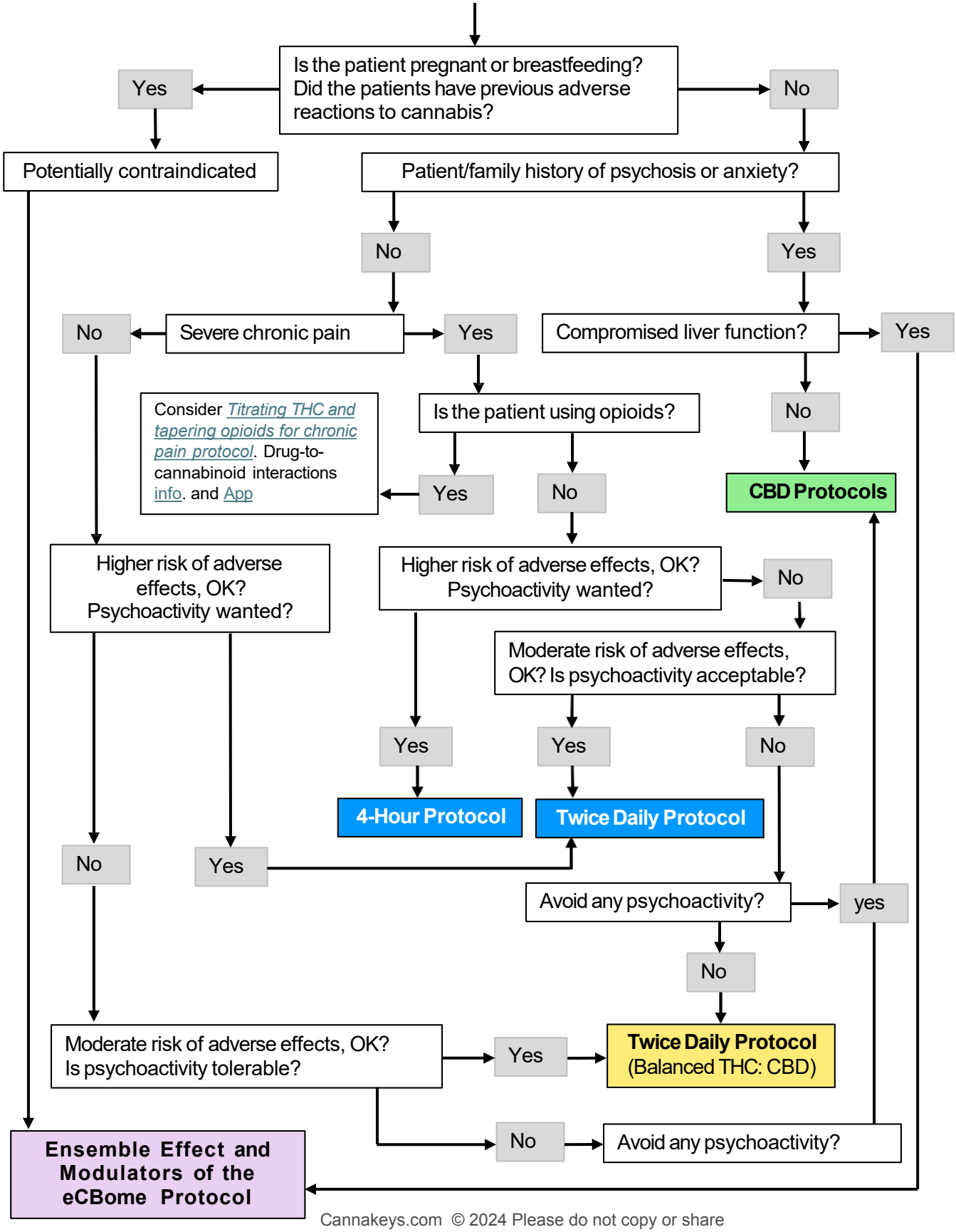
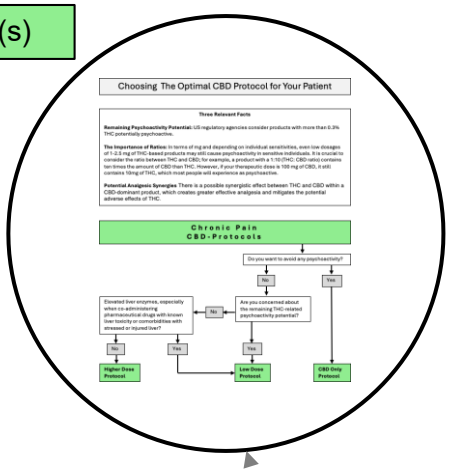
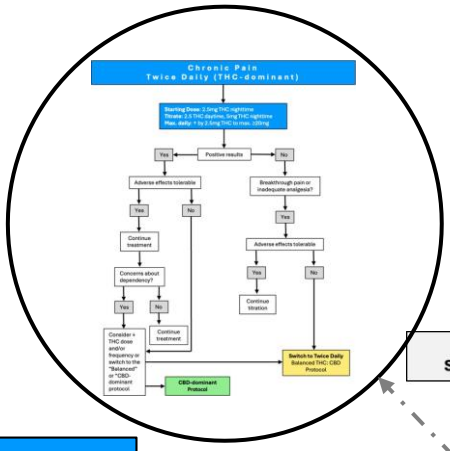
Chronic Pain
Screening Process & Patient Preferences



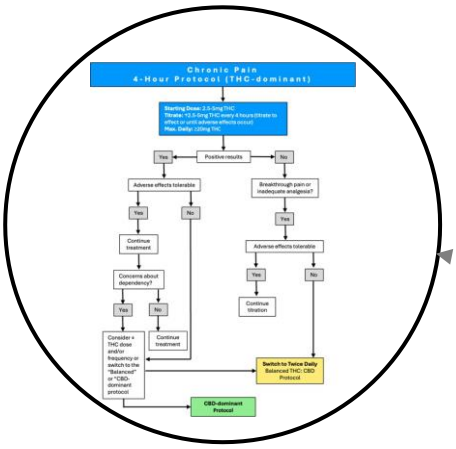
CBD-dominant Protocol(s)

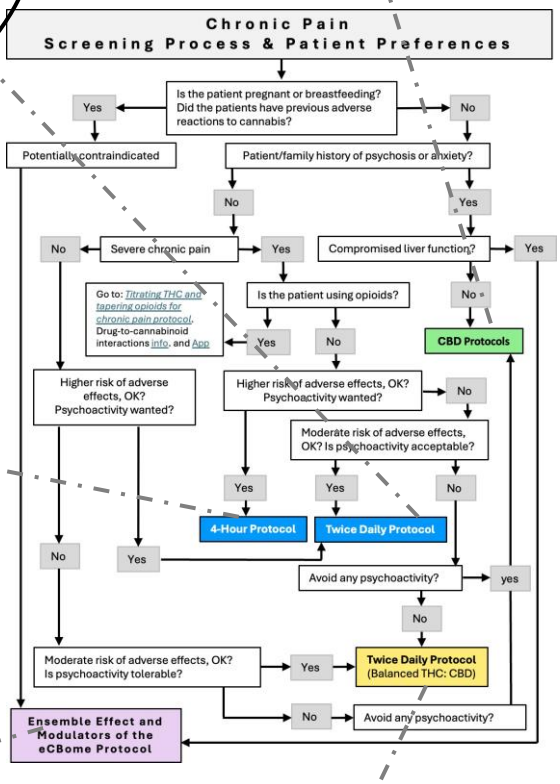


Twice Daily THC-dominant Protocol

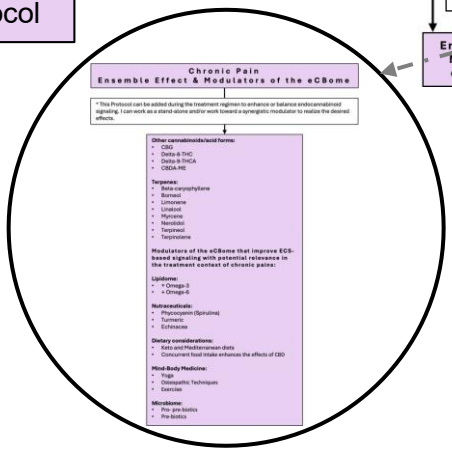


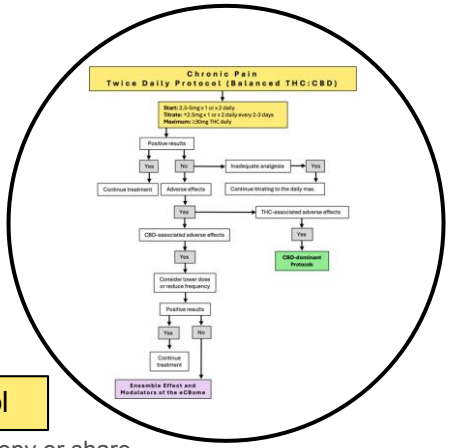
4-Hour THC-dominant Protocol





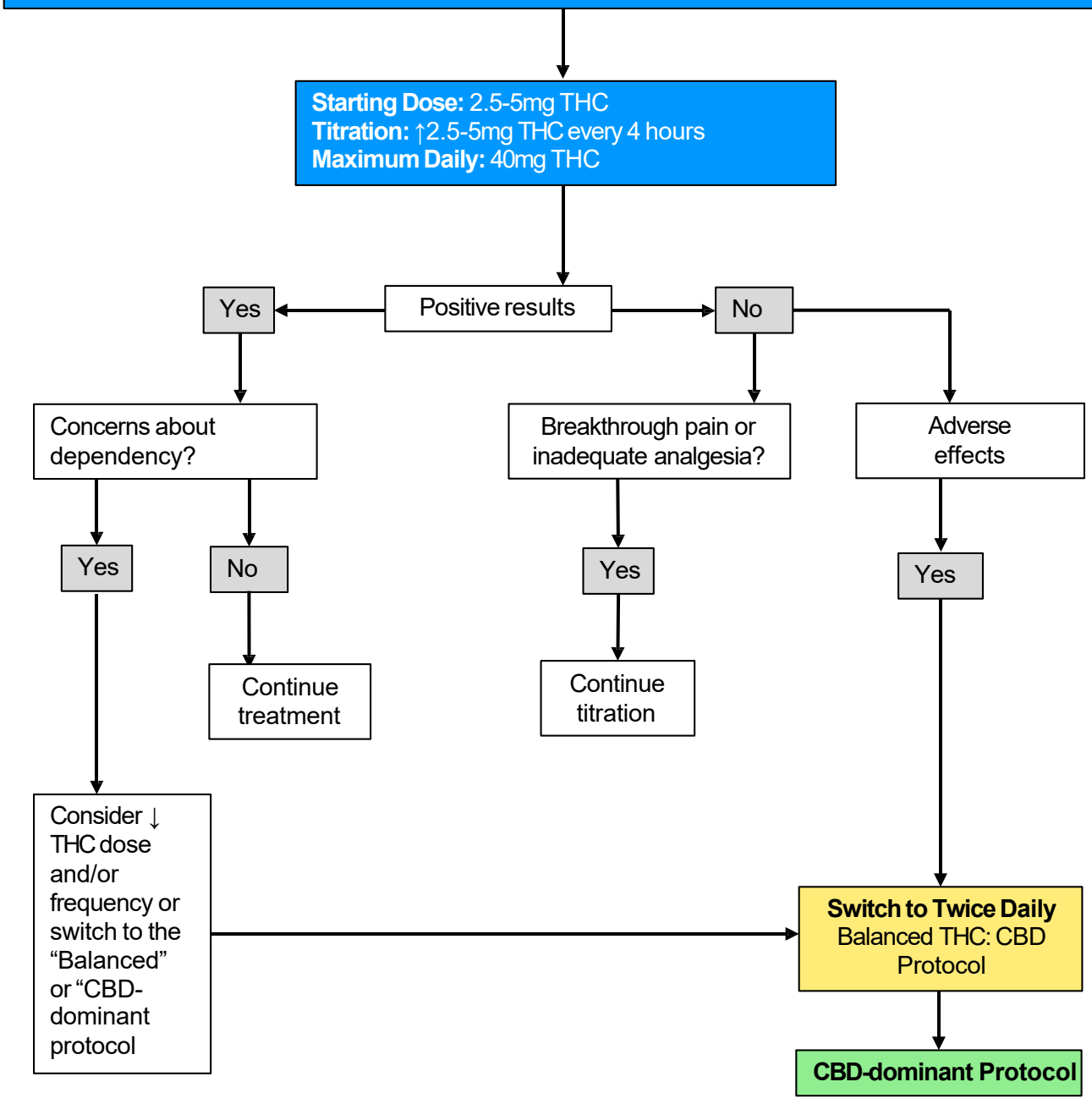
eCBome Protocol

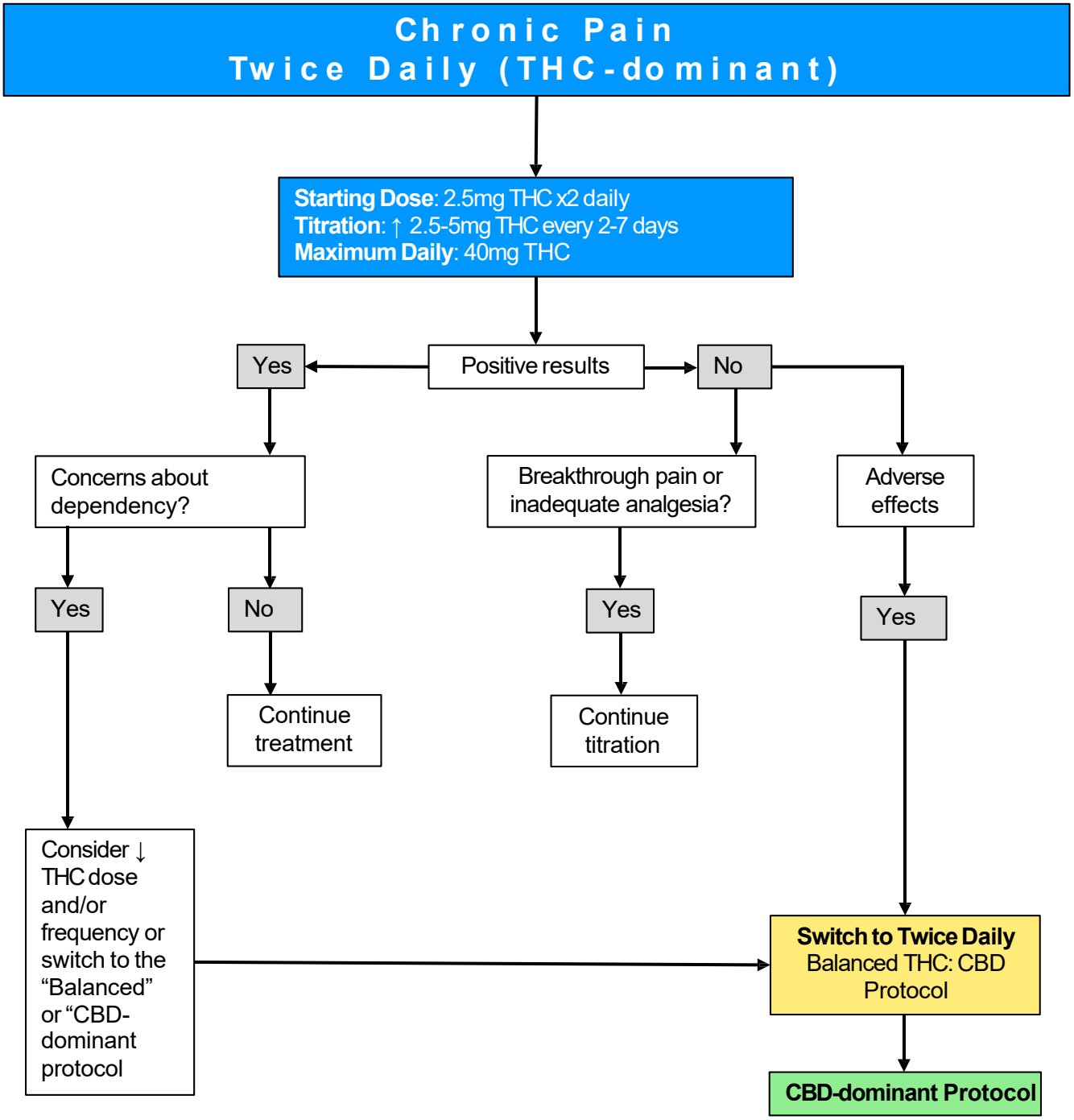




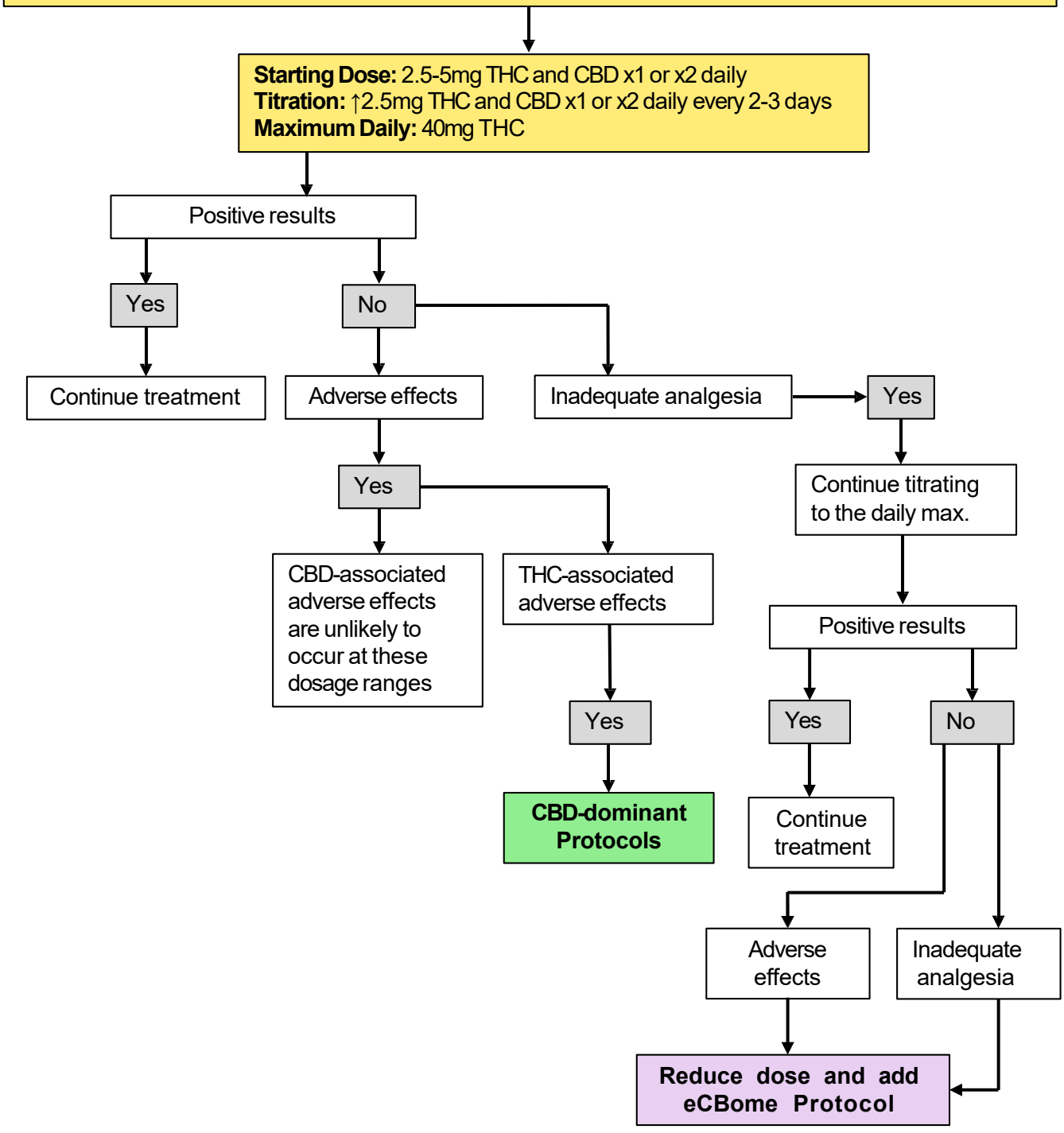
Twice Daily Balanced THC: CBD Protocol

Chronic Pain
4-Hour Protocol (THC-dominant)





Chronic Pain
Twice Daily Protocol (Balanced THC:CBD)



Choosing The Optimal CBD Protocol for Your Patient

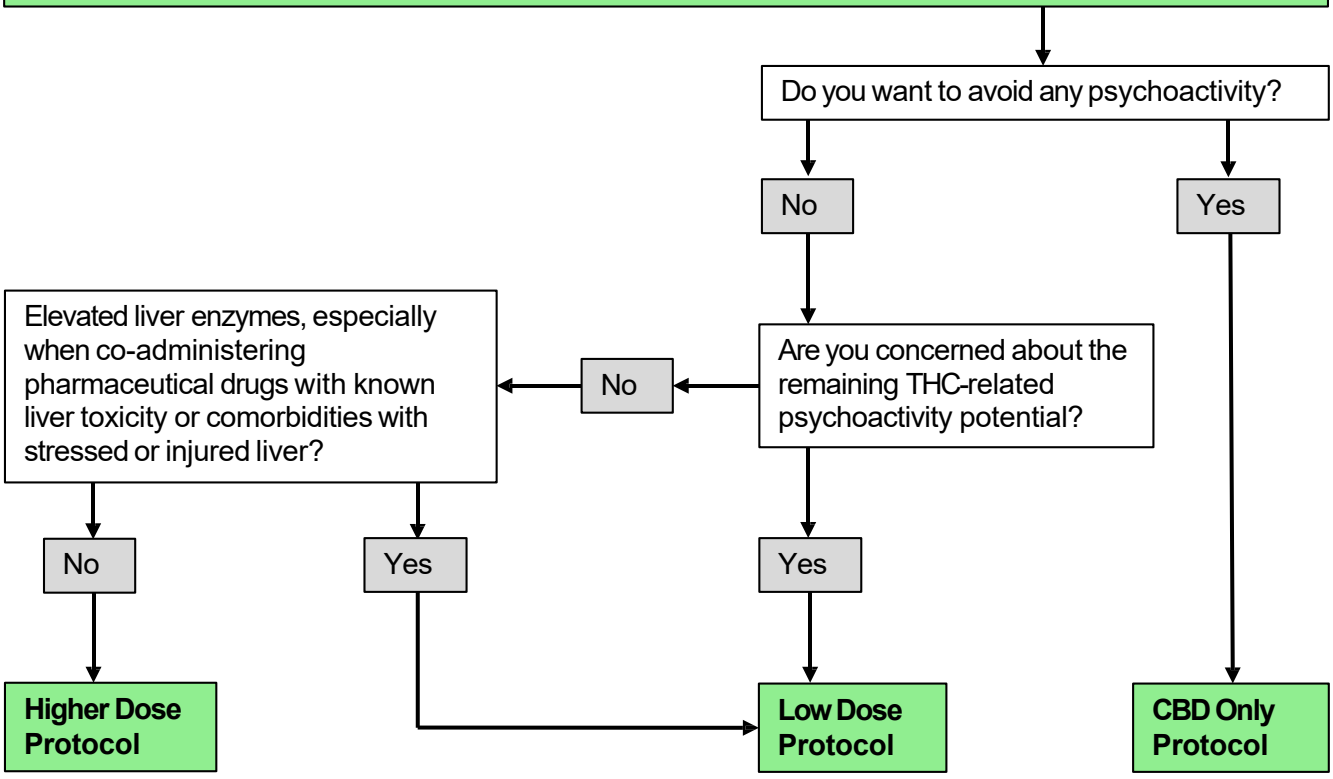
Relevant Considerations

Remaining Psychoactivity Potential: US regulatory agencies consider products with more than 0.3% THC potentially psychoactive.

The Importance of Ratios: In terms of mg and depending on individual sensitivities, even low dosages of 1-2.5 mg of THC-based products may still cause psychoactivity in sensitive individuals. It is crucial to consider the ratio between THC and CBD; for example, a product with a 1:10 (THC: CBD ratio) contains ten times the amount of CBD than THC. However, if your therapeutic dose is 100 mg of CBD, it still contains 10mg of THC, which most people will experience as psychoactive.

Potential Analgesic Synergies There is a possible synergistic effect between THC and CBD within a CBD-dominant product, which creates greater effective analgesia and mitigates the potential adverse effects of THC. In addition, when synergistic compounds and/or ratios between them have been identified you can identify types of cannabis that contain them or use isolated version of each of them to create customized remedies.

Chronic Pain CBD-Protocols



Chronic Pain
CBD-Dominant High Dose Protocol

Starting Dose: Week 1, 50mg CBD x1 daily (total 50mg/day)
Titration: Week 2, ↑ to 50mg x2 daily (total 100mg/day)
Week 3, ↑ to 50mg x3 daily (total 150mg/day)
Week 4 and beyond, ↑50mg per dose every 7 days
Maximum Daily: 900mg (mean effective dose 300mg)

Positive results

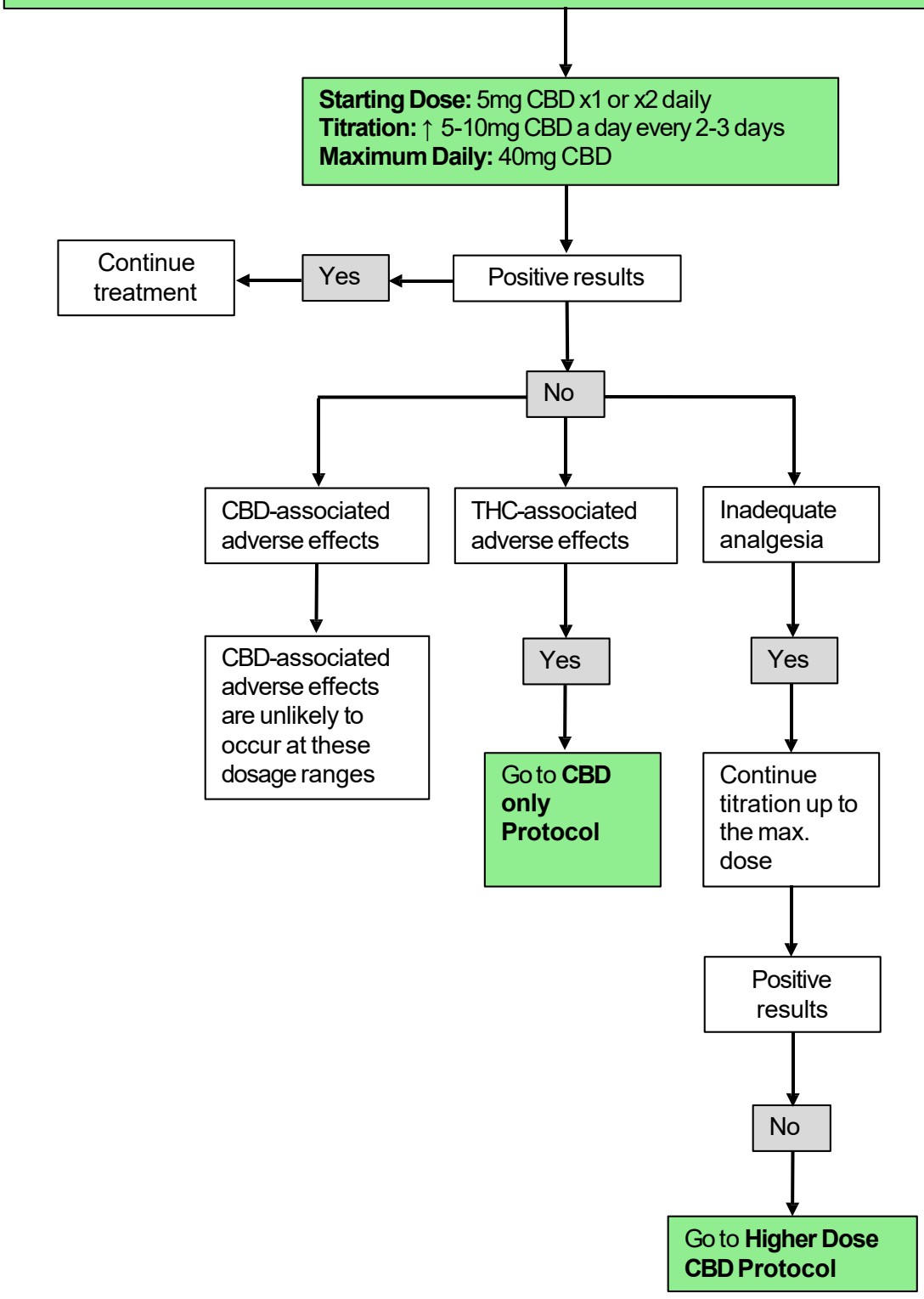
- Yes → Continue treatment → Initiate evaluation of liver enzymes*, especially when using higher CBD dosages (>400mg)
- No → Inadequate analgesia → Yes → ↑ CBD and titrate to effect → Positive results
  - Yes → Continue treatment
  - No → **Continue Treatment and add eCBome Protocol** → Positive results
    - Yes → Continue treatment
    - No → * Consider adding the **Start Low, Go-Slow Protocol** if inadequate analgesia persists after the maximum CBD dose is reached.
- No → CBD-associated adverse effects → Yes → Go to the **Low-Dose Protocol**
- No → THC-associated adverse effects → Yes → Switch to **CBD only Protocol**

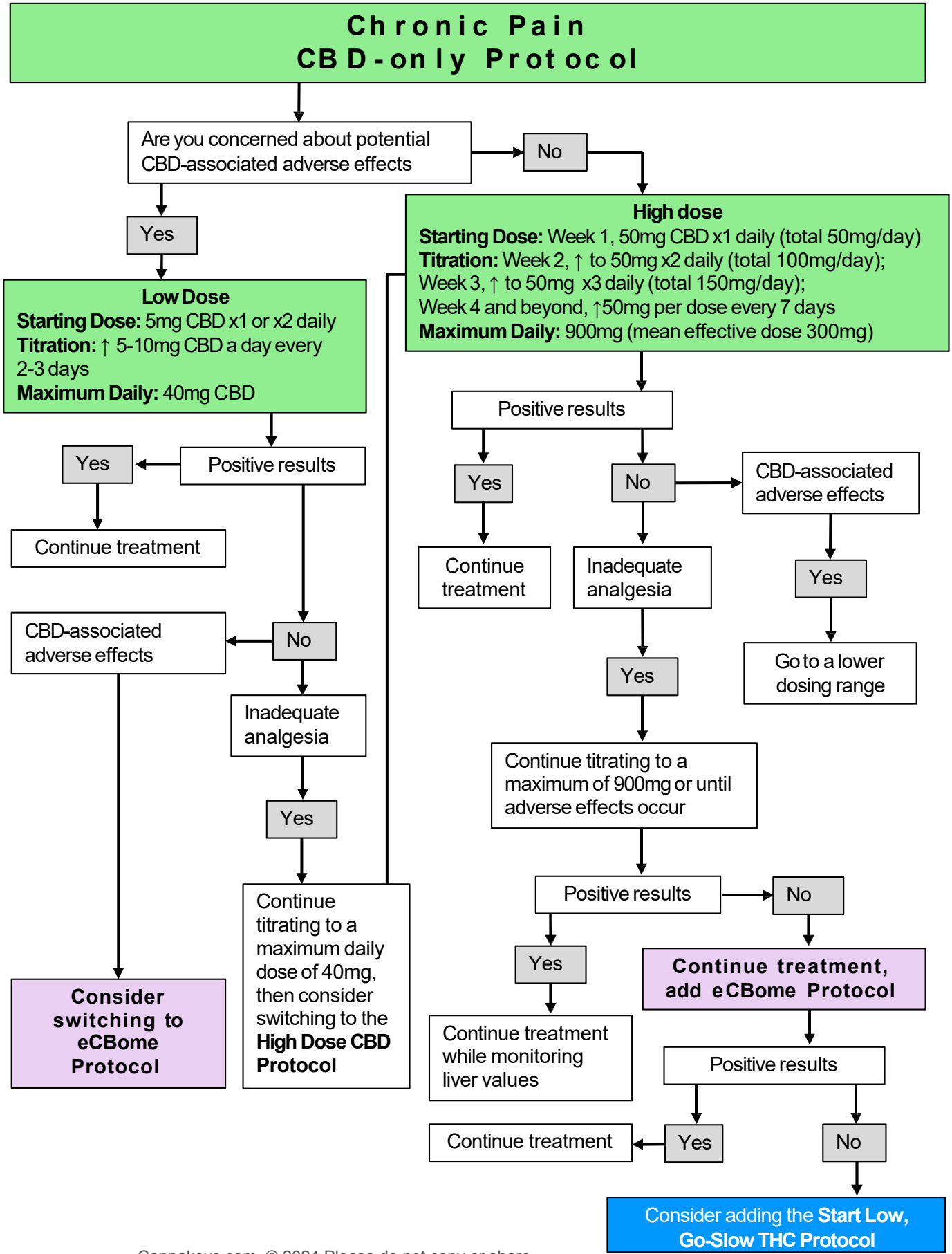
*Consider testing for the elevation of two liver enzymes that indicate liver stress/injury, i.e., Alanine aminotransferase (ALT) and Aspartate aminotransferase (AST).

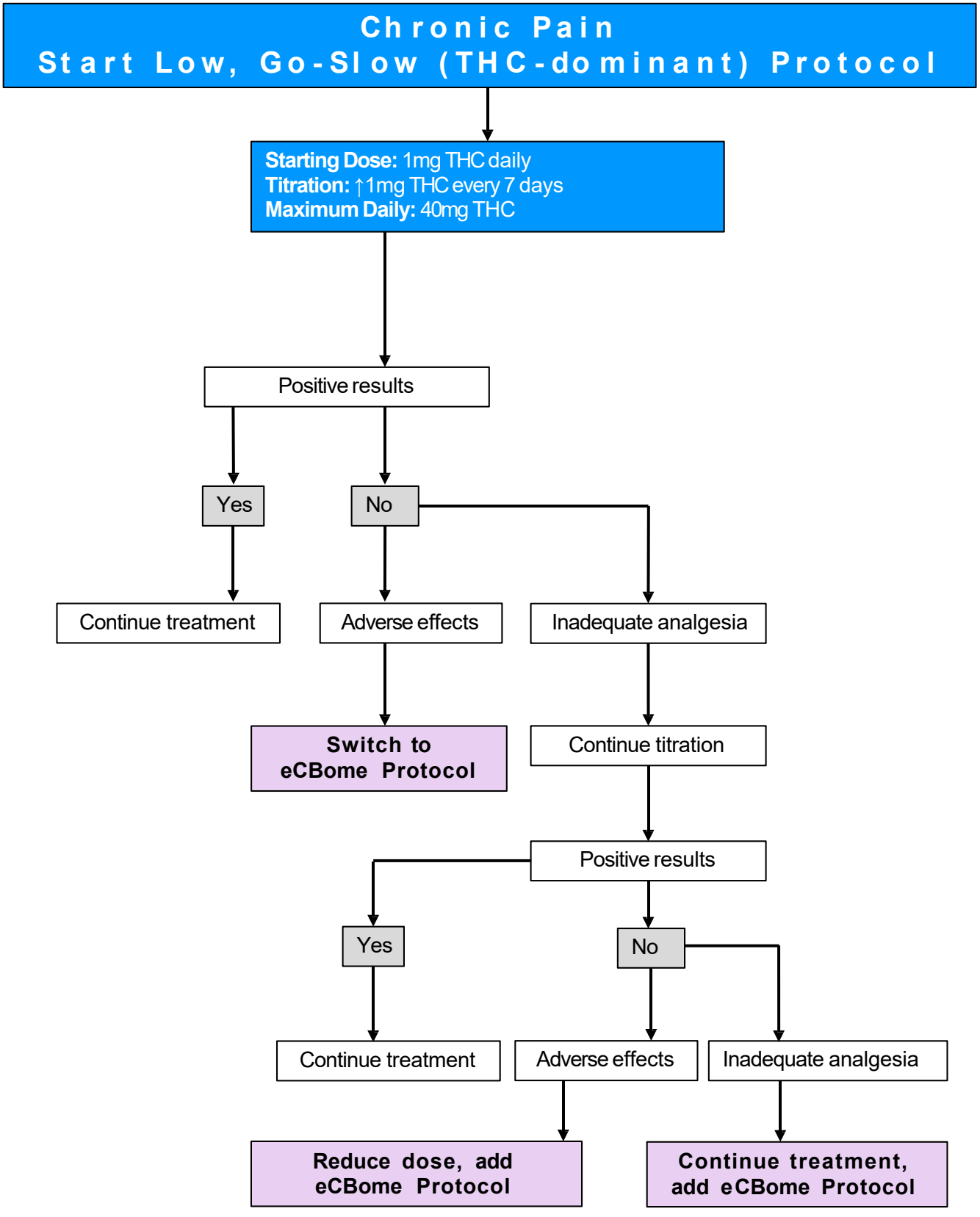
- Normal ALT is 7-56 U/L
- Normal AST is 0 to 35 U/L

For more information, click here:

Chronic Pain
CBD-Dominant Low Dose Protocol







Chronic Pain: eCBome Protocol

Add modulators of the endocannabinoidome (eCBome) to enhance or balance ECS-signaling

Other cannabinoids/acid forms

- **Cannabigerol (CBG):** CBG can mitigate pain (U. Anand et al., 2021), (N. M. Kogan et al., 2021).
- **Delta-8-THC:** Can induce effective pain relief (J. S. Kruger et al., 2022), (D. Thapa et al., 2018).
- **Delta-9-THCA:** The acid form of THC can induce analgesia (S. Mirlohi et al., 2022).
- **Cannabidiolic Acid (CBDA):** The acid form of CBD produces analgesic effects (D. Vigli et al., 2021).

Terpenes

- **Beta-caryophyllene (BCP):** BCP offers diverse ways to mitigate chronic pain (K. Fidyt et al., 2016). Most notably, BCP binds to CB2 with about half the strengths of THC (J. Gertsch et al., 2008). BCP is an FDA-approved food additive. Several herbal formulations high in BCP have been developed. For a sample list, consider visiting this trial text, looking just above the conclusion (C. Ricardi et al., 2024).
- Additional cannabis-associated terpenes with potential relevance for the treatment of chronic pain include **borneol, limonene, linalool, myrcene, nerolidol, terpineol, and terpinolene**.

Lipidome

- ↑ **Omega-3:** Increasing O3s may help reduce chronic pain (C. Carlisle et al., 2023). FDA recommends that daily intake not exceed 3 gm a day of eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) combined, with no more than 2gm a day deriving from supplements (K. N. Kruppa et al., 2024).
- ↓ **Omega-6:** Reducing the intake of O6s to a ratio of 4:1 (O6: O3) may help mitigate some of the underlying pathologies of chronic pain (S. Dyall 2017).

Nutraceuticals

- **Phycocyanin (Spirulina):** Clinical trial shows the intake of 2.3gm of PC a day produced "…robust relief of chronic pain" (G. S. Jensen et al., 2012). PC binds with CB2 receptors and as such mitigates chronic pain associated with inflammation (W. H. El-Maadawy et al., 2022).
- **Turmeric (Curcumin):** Various trials highlight the diverse pathways by which curcumin can produce effective analgesia (D. D. Aguiar et al., 2022). A review of clinical trials using turmeric extracts or curcumin for arthritis pain concluded that 1gm of curcumin per day was efficacious (J. W. Daily et al., 2016). Curcumin is considered safe (GRAS) by the FDA. For more information on dosages, adverse effects, etc., visit GRAS notice 822.
- **Echinacea:** Compounds found in this herb bind with CB2 receptor sites (S. Raduner et al., 2006) with about the same strengths as THC and, as such, may mitigate chronic pain associated with inflammation.
- **Palmitoylethanolamide (PEA):** A review of clinical trials concluded that a 60-day supplementation with PEA led to a significant reduction in chronic pain (V. Schweiger et al., 2024).

Dietary considerations

- **Keto diet:** A review of clinical trials concluded that KD may reduce chronic pain (T. Ryan et al., 2023).
- **Mediterranean diet:** MD modulates the ECS with relevance to treating chronic pain (F. Armeli 2021).
- **Pre-fed stomach:** Eating healthy, fatty foods with CBD enhances its effects (K. Mozaffari et al., 2021).

Mind-Body Medicine

- **Yoga:** A 4-day Isha Yoga retreat resulted in increased levels of endocannabinoids with potential relevance to patients with chronic pain (S. Sadhasivam et al 2020).
- **Osteopathic Techniques:** A review of clinical trials found that OT can increase endocannabinoid levels with associated analgesic effects (A. Buscemi et al., 2020).
- **Exercise:** 15 weeks of exercise ↑ endocannabinoid levels and reduced pain (N. Stensson et al., 2020).

Microbiome

- ↑ **Pro-biotics,** ↑ **Pre-biotics:** Beneficial bacteria found in cultured food (e.g., yogurt, sauerkraut, kimchi) or supplements such as *acidophilus* may help reduce inflammatory-related pain (K. Rea et al., 2021).
- ↓ **Intake of sugar and highly processed foods (HPF):** Nutrition is the top modifiable lifestyle factor for chronic pain (Ö. Elma et al., 2022).