REALM OF CARING

The Realm of Caring Foundation (RoC) is a 501(c)(3) non-profit that provides support services and resources to those using cannabinoid products. These statements have not been evaluated by the Food and Drug Administration (FDA). Cannabidiol (CBD), RoC, and the information in this pamphlet are not intended to diagnose, treat, cure, or prevent disease.

GUIDE TO CBD

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INTRODUCTION

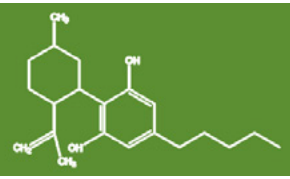
This guide is intended to be used by healthcare practitioners as well as RoC clients seeking education about cannabidiol (CBD). Included are details concerning the basic science and mechanisms associated with CBD, sourced from peer-reviewed research and Realm of Caring's collective data. Prior to initiating the use of CBD, a thorough medical evaluation of the severity and cause of current health status or symptoms, including a detailed history and physical examination, should be performed by a qualified physician.

LEGAL

Hemp products grown in compliance with the Agricultural Act of 2014 are now effectively legal under federal law due to the recent Consolidated Appropriations Act, 2016 (Omnibus Appropriations Sec. 763). As the bill states-

> "None of the funds made available by this Act or any other Act may be used— (1) in contravention of section 7606 of the Agricultural Act of 2014 (7 U.S.C. 5940); or (2) to prohibit the transportation, processing, sale, or use of industrial hemp that is grown or cultivated in accordance with subsection section 7606 of the Agricultural Act of 2014, within or outside the State in which the industrial hemp is grown or cultivated" [16].

Furthermore, some RoC-approved products are grown under Amendment 64 in Colorado that allows for the industrial production of hemp [17], and have been independently verified by the Colorado Department of Agriculture as hemp. Between the aforementioned and the Agricultural Act of 2014 (which allows for cultivation for the purpose of research under an agricultural pilot program), individuals using these products and participating in research can receive a layer of protection under these laws. Be sure to reach out to the RoC Care Team for specifics, and ask how to enroll in our Observational Research Registry (ORR) through Johns Hopkins University.



CBD (Cannabidiol)

MECHANISMS OF ACTION

The utility of CBD may be mediated in part by the endocannabinoid system (ECS), a set of cellular receptors and modulatory lipids present throughout the body. There is evidence linking the ECS to pain, memory, appetite, energy balance and metabolism, stress response (exploration, social behavior, and anxiety), immune function, female reproduction, autonomic nervous system function, thermoregulation, and sleep [1]. CBD is a major cannabinoid that appears to have a wide range of potentially therapeutic effects [2]. CBD acts as an indirect antagonist of CB1 and CB2 receptors and is an inverse agonist of CB2 [3, 4]. It also acts upon other receptors [5], including 5-HT1A receptors [6], which mediate antidepressant, anxiolytic, and neuroprotective effects, and opioid receptors, which mediate pain (analgesic) effects [7]. CBD may reduce symptoms of schizophrenia via stabilization of NMDA receptor brain circuits, which interact with GABA and Norepinephrine actions [8, 9]. In a small double-blind study, CBD was shown to be associated with changes in regional brain blood flow and reduction in social anxiety [12].

THERAPEUTIC INDICATIONS

Reported benefits of CBD are anti-emetic, anti-inflammatory, immunosuppressant, anti-convulsant, anti-anxiety, antidepressant, antipsychotic, antioxidant, anti-tumoral, neuroprotectant, anti-degenerative, and spermatogenesis [1, 2, 11, 12, 13, 14].

CANNABINOIDS

Cannabinoids are a class of diverse chemical compounds that activate cannabinoid receptors on cells throughout the body. Ligands for these receptor proteins include endocannabinoids (produced naturally in the body by humans and other vertebrates), phytocannabinoids (found in cannabis and some other plants), and synthetic cannabinoids (manufactured artificially) [26]. Tetrahydrocannabinol (THC) and CBD are the most abundant and notable cannabinoids, but there are thought to be at least 111 different cannabinoids isolated from cannabis, exhibiting varied effects. Cannabis can be selectively bred, grown, and harvested to alter its cannabinoid profile. Plants sufficiently low in THC (0.3% or less) can be legally classified as hemp in the United States [17]. Some varieties of hemp have been bred to maximize the CBD content. These varieties are the source of many quality CBD products available.

SAFETY

The Realm of Caring Foundation is dedicated to helping clients find products with superior quality and would only recommend using a product that meets our quality requirements.

CBD derived from hemp is considered a dietary supplement and is presumably safe for all ages. Therefore it can be recommended for use by various providers, including but not limited to medical doctors, doctors of osteopathy, nurse practitioners, physician assistants, doctors of physical therapy, doctors of Oriental medicine, doctors of chiropractic medicine, and naturopathic doctors. Cannabidiol studies are currently being conducted in children with epilepsy [10] as well as through ongoing Observational Research through the partnership of Johns Hopkins University and the Realm of Caring Foundation. There is currently no data regarding individuals with impaired hepatic or renal function. (See Metabolism and Interactions.)

ADMINISTERING & DOSING

There are various methods of administration including oral, sub-lingual, topical, rectal, transdermal, G-tube, GJ-tube, and vaporizing. Products are often designed with a specific method in mind; always follow the manufacturer's instructions for use. Vaporizing products not specifically intended for vaporization can be hazardous to one's health.

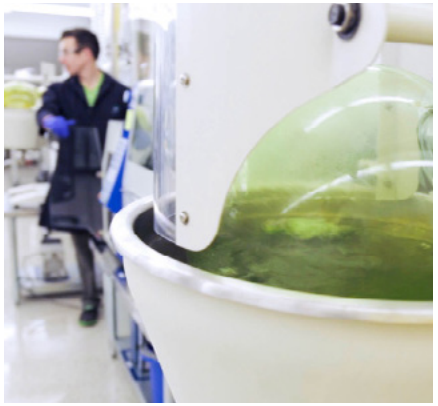
For CBD oil extracts, the RoC recommends sublingual administration, holding CBD extract under the tongue for 30 seconds or as long as tolerated. Every person is unique and dosing may vary. RoC recommended dosing regimens vary dependent upon weight. For specifics, please refer to **RoC's dosing guidelines**, accessible in both our Client and Practitioner Portals online.

CBD & CANCER

According to recent studies, cannabis is becoming a promising adjunct therapy with cancer treatment [19]. Current studies have reported that CBD is showing promise in how oncologists are looking to treat breast [20], glioma [21], Leukemia [22], thyroid [23], colon [24] and lung cancers [25]. For any type of cancer, individuals may attempt to use cannabis to (1) aid side-effects from cancer treatments, and/or (2) fight the cancer itself. Every person is unique and dosing may vary. Adding other cannabinoids may be useful during your therapy, but CBD intake alone is likely to be more beneficial than no cannabinoids at all (reference our other Cannabinoid Guides, as well as **Cancer Dosing Guidelines** for more information).

METABOLISM & INTERACTIONS

Cannabidiol is predominantly metabolized in the liver and is a known inhibitor of liver enzyme P450 2C19 (abbreviated CYP2C19). This enzyme is responsible for metabolism of several pharmaceutical drugs. CBD use may therefore cause fluctuations in serum levels for certain medications. If the client uses treatments which utilize these pathways, the standard protocol for CBD users is to measure baseline liver function tests (LFT), other labs of concern, and medication levels including desmethyl levels and then to repeat these assessments frequently thereafter. If unusual symptoms begin to present, the provider should determine whether CBD is potentiating the side effects of current medication. Visit our **AED Potential Interaction** chart for reference.



WEANING
PHARMACEUTICALS

The client may be eager to wean current medications. Weaning must be determined by and occur under the supervision of a licensed and certified Healthcare Practitioner. It is important to note that CBD has a reported cumulative effect. Therefore, weaning should be slow and include frequent monitoring. Successful weaning has been reported by decreasing dosing by no more than 10% every 2-4 weeks, unless signs of toxicity, increased side effects, drug interactions, or an increase in medication blood levels are observed.

PRECAUTIONS
& WARNINGS

High-CBD products derived from hemp may contain trace amounts of THC. With daily dosing, the user may test positive for THC in urine and blood. The hemp plant is in the same family as high-THC cannabis, and smells the same, therefore law enforcement may identify hemp as an illegal substance. Products high in CBD not derived from hemp may contain more substantial amounts of THC. Be sure to inquire with the manufacturer if you have questions.

Regarding pregnancy, CBD crosses through the placenta [18]. Therefore, fetal exposure risks cannot be ruled out. There are currently no studies supporting the use of CBD in pregnancy. We encourage clients to speak with a doctor or midwife for further advice.

PRACTICAL SUGGESTIONS
FROM RoC CLIENTS

1. Draw a week's worth of oil into syringes for convenience.
2. Color coordinate syringes if using more than one oil (CBD, THC, THC-A).
3. If you prefer capsules for administration and want to fill your own, check your local health food store for empty capsules.
4. Give the product time to be effective; it may take six months or more to see results.
5. Keep notes! Dosing changes, seizure activity, labs, batch numbers, illness, observations, etc.
6. Watch for signs of toxicity; if the client is on other medications, request labs regularly.
7. You may need to experiment with dosing cannabinoids before or after other medications to see what works best for the individual.

STILL HAVE QUESTIONS?

Great! We were hoping you would ask. The Realm of Caring Foundation has a dedicated **Care Team** to answer all of your questions about safe access to products, dosing and administration, and more. You are also encouraged to join RoC's CEO and Co-Founder, Heather Jackson, as she presents her **Orientation Series**! For those working in the health and medical fields, the **Healthcare Practitioner Education** is also available monthly. Both seminars are available online as well as in person.

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