



# TOXTALKS

A BULLETIN FOR HEALTHCARE PROFESSIONALS WHO MANAGE POISONED PATIENTS

Blue Ridge Poison Center

University of Virginia Health

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## CBD OIL – WHAT YOU NEED TO KNOW FROM A TOXICOLOGY PERSPECTIVE

### What is CBD oil?

CBD, or cannabidiol, is a botanical extract derived from the cannabis (marijuana) plant. The cannabis plant contains hundreds of botanical compounds, some of which have known biological effects, and others whose effects are unstudied or unknown.

### Is CBD the same thing as THC?

THC, or delta-9-tetrahydrocannabinol, is the main psychoactive compound in cannabis. THC is what gives people the psychoactive “high” effects after smoking or consuming marijuana. Both THC and CBD are derived from the cannabis plant, but they are different compounds. CBD is not considered psychoactive.

### Are there any approved medical uses for CBD?

In 2018, the Food and Drug Administration approved Epidiolex (CBD) for the treatment of seizures. This approval was limited to two rare and often-refractory forms of pediatric epilepsy, Lennox-Gastaut syndrome and Dravet syndrome. Studies showed that Epidiolex, taken with other antiepileptic medications, reduced the frequency of seizures.

### Is CBD scheduled by the DEA?

Since CBD is derived from the cannabis plant, it is still considered a Schedule I compound. However, there is an exception for Epidiolex, which is a Schedule V substance. The legal standing of CBD varies from state to state, and even in Virginia there are conflicting

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### NEWS AND NOTES:



March 15-21, 2020 is **National Poisoning Prevention Week!** The Blue Ridge Poison Center will be honoring the occasion by inviting pharmacies to place a poison center magnet and bookmark in every prescription filled during the week. We are providing all supplies free of charge. If your pharmacy would like to participate, or if you want supplies to share with your patients or clients, contact Education Coordinator Kristin Wenger at 434-982-4386 or [KLW2S@VIRGINIA.EDU](mailto:KLW2S@VIRGINIA.EDU).

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## BRPC STAFF

### Director

Christopher Holstege, MD

### Nursing Director

Beth Mehring, MSN

### Medical Toxicologists

Andy Baer, MD  
Heather Borek, MD  
Nathan Charlton, MD  
Justin Rizer, MD

### Medical Toxicology Fellows

Marissa Kopatic, MD  
Jennifer Ross, MD, MPH

### Epidemiologist

Saumitra V. Rege, MS, PhD

### Poison Specialists

Andre Berkin, BSN, CSPI  
Michael Brookshire, BSN, RN  
Jenni Goodwin, BSN, CSPI  
Jennifer Horn, BSN, CSPI  
Sue Kell, Ph.D, M.Ed, CSPI  
Teresa Kinzie, RN, CSPI  
Kathy Mayo, RN, CSPI  
Lisa Turner, RN, BSN  
Scott Wiley, BSN, CSPI  
Steven Yoder, BSN, CSPI

### Public Health Educator

Kristin Wenger, MA, BS

### Administrative Specialists

Heather Collier  
Teresa Dorrier

policies. The legality of CBD is beyond the scope of this newsletter, but readers should be aware that CBD can easily be purchased in a variety of stores or ordered off the internet.

## Is there any toxicity from CBD?

One of the issues with CBD is that it is considered a “natural” product, and therefore not required to undergo rigorous manufacturing standards, or safety or efficacy testing as would be required of pharmaceutical substances. As such, we are seeing products marketed as CBD that contain other substances. CBD oil is supposed to contain no more than 0.3% THC, however one study demonstrated that 57% of samples contained over 1% THC, with one sample having a peak THC concentration of 57.5%.<sup>1</sup> Synthetic cannabinoids (commonly referred to as *Spice* or *K2*) and dextromethorphan have also been detected in a sampling of CBD e-liquids (for use in electronic cigarettes).<sup>2</sup> These other substances are not listed on the product being sold and have the potential to cause significant clinical effects.

## Are there any drug interactions with CBD?

While more research still needs to be done in this area, there are certain interactions that have been demonstrated. CBD has been shown to be an inhibitor of CYP2C19 as well as p-glycoprotein. Clobazam, a benzodiazepine, is metabolized by CYP2C19 and converted to an inactive metabolite. CBD’s inhibition of this enzyme has been shown to result in an 8-fold increase in clobazam concentrations. One of the potential critiques of the study showing efficacy of CBD in Dravet syndrome is that perhaps the effect was related to enzyme inhibition and higher levels of clobazam rather than direct effects of CBD on reducing seizures.<sup>3</sup>

1. Hazekamp A, Epifanova S: Grote variatie in samenstelling cannabisolie noopt tot regels. *Pharmaceutisch Weekblad* 2017; 152: 16–18.
2. Poklis JL, Mulder HA, Peace MR. The unexpected identification of the cannabimimetic, 5F-ADB, and dextromethorphan in commercially available cannabidiol e-liquids. *Forensic Sci Int* 2019;294:e25-e7.
3. Lucas CJ, Galettis P, Schneider J. The pharmacokinetics and the pharmacodynamics of cannabinoids. *Br J Clin Pharmacol* 2018;84:2477-82.

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