

Cannabis Interactions with other Pharmaceuticals

In addition to understanding the efficacy of all cannabinoids, as well as any potential benefits and side effects, it is imperative that the athletic trainer recognizes that the application of a cannabis-based product, whether natural or synthetically-derived, lends itself to a likelihood of modifying the way other pharmaceuticals act within the body. Since cannabinoids bind to similar receptors as pharmaceuticals, knowing whether facilitatory or inhibitory actions will result with cannabis interventions is essential. Athletic trainers should therefore work closely with their directing physician when advising for or against any cannabinoid use for a patient. This would be similar to how athletic trainers possess knowledge of other drug interactions, drug allergies, and therapeutic applications whereby an adverse reaction can result.

- Cannabinoid levels can be increased by other medications
- Interactions should be expected between marijuana (THC) and medications with sympathomimetic activity (↑ HR and BP), central nervous system depressants (drowsiness, unsteadiness), and drugs with anticholinergic effects (↑ HR, drowsiness)
- Marijuana (THC) may have interactions with drugs including warfarin (↑ risk of bleeding); and theophylline, clozapine and olanzapine (reduced efficacy)
- THC and CBD are known to inhibit the activity of the cytochrome p450 system, which is a set of enzymes responsible for metabolizing the active ingredients in both prescription and OTC meds.
- Inhibiting the activity of the cytochrome p450 system can augment the psychoactive effects of THC and CBD (e.g., somnolence, transaminase elevation, etc.)

Here is a list of suggested peer-reviewed manuscripts that provide guidance toward cannabis interactions with other pharmaceutical:

Balachandran P, Elsohly M, Hill KP. Cannabidiol Interactions with Medications, Illicit Substances, and Alcohol: a Comprehensive Review. *J Gen Intern Med*. 2021 Jan 29. doi: 10.1007/s11606-020-06504-8. Epub ahead of print. PMID: 33515191.

Brown JD, Winterstein AG. Potential Adverse Drug Events and Drug-Drug Interactions with Medical and Consumer Cannabidiol (CBD) Use. *J Clin Med*. 2019 Jul 8;8(7):989. doi: 10.3390/jcm8070989. PMID: 31288397; PMCID: PMC6678684.

Gaston, T.E.; Bebin, E.M.; Cutter, G.R.; Liu, Y.; Szaflarski, J.P. Interactions between cannabidiol and commonly used antiepileptic drugs. *Epilepsia* 2017, 58, 1586–1592.

Iffland, K. & Grotenhermen, F. An Update on Safety and Side Effects of Cannabidiol: A Review of Clinical Data and Relevant Animal Studies. *Cannabis Cannabinoid Res*. 2017, 2, 139–154.

Jiang, R.; Yamaori, S.; Okamoto, Y.; Yamamoto, I.; Watanabe, K. Cannabidiol is a potent inhibitor of the catalytic activity of cytochrome P450 2C19. *Drug Metab. Pharmacokinet*. 2013, 28, 332–338.