

## **Cannabis & Cannabinoids: Modes of Application of Cannabis**

Cannabis & cannabinoids can be taken/used/administered in a variety of ways. Here is a brief description of the most common modes of application. Athletic trainers are encouraged to seek out more information regarding specific modes of application that may be more relevant to a specific patient population or practice setting.

### **Inhalation**

When cannabis or cannabinoids are inhaled directly, irrespective of the inhalation technique, all the active cannabinoids (THC, CBD, etc) enter the lungs and are absorbed into the bloodstream immediately. Smoking is the most common manner of direct inhalation and can include the use of pipes, paper, and vaping materials. With inhalation, effects of THC may be felt fairly quickly.

### **Oral**

Cannabis or cannabinoids can be introduced orally by way of gelcaps, edible goods or tinctures. Edibles may contain cannabis or cannabinoids in a variety of foods or beverages. Since cannabinoids, including THC, are fat-soluble, they are commonly combined with a fat like butter or oil and used in cooking baked goods. This is why “edibles” often refers to brownies, cookies, or other confections. Considering this method of ingestion will go through the digestive tract, effects, especially psychoactive effects common to THC use, will have a delayed onset as compared to an inhaled product. Orally-ingested products will likely result in a time to onset of effects from twenty minutes to several hours. Water-soluble edibles are slowly becoming more available and can bypass the digestive tract in a way that yield effects in a quicker period of time but are less commonly found on the market.

Tinctures allow for cannabis or cannabinoids to be absorbed sublingually by entering the blood vessels under one’s tongue. A dropper is typically the vehicle of transfer and the substance may undergo what is referred to as a dual absorption, meaning it enters the body both through the vessels of the tongue as well as through the digestive tract. As a result, the onset of effects may occur both acutely and sub-acutely relative to time.

### **Nasal**

Though not as common, cannabis-based products can be administered through the nasal passageway as well, and likely involves a pharmaceutical-grade product containing isolate or combined CBD and THC. The effects are reported to be fast-acting given the efficiency of crossing the blood-brain barrier. With respect to nasal forms of application, less is known regarding the safety and efficacy as compared to other routes of application.

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## Topical

Cannabis- and cannabinoid-based products can be administered by direct application to the skin as well. In these formulations, cannabis and cannabinoid molecules are combined with terpenes and a variety of other lotions or creams for topical use. Athletic trainers will likely see cannabis and cannabinoid topical products recommended for use as pain relievers and in the treatment of muscle soreness and injury. Additionally, topical products will be available in emollients for use with instrument-assisted techniques, in roll-ons, and in massage oils. For many athletic trainers, these are the first encounters with cannabis and cannabinoid products as safety and legal/governing body concerns with topical products are less prevalent.

## Take home points:

1. There are a variety of modes of application for cannabis and cannabinoid products.
2. The mode of application selected will have an effect on the time to onset of effects.
3. Topical applications are very common, largely considered to be safe, and can be an effective tool for managing muscle soreness & pain in the event a clinician or patient are uncomfortable with oral or other ingestion modes of application.