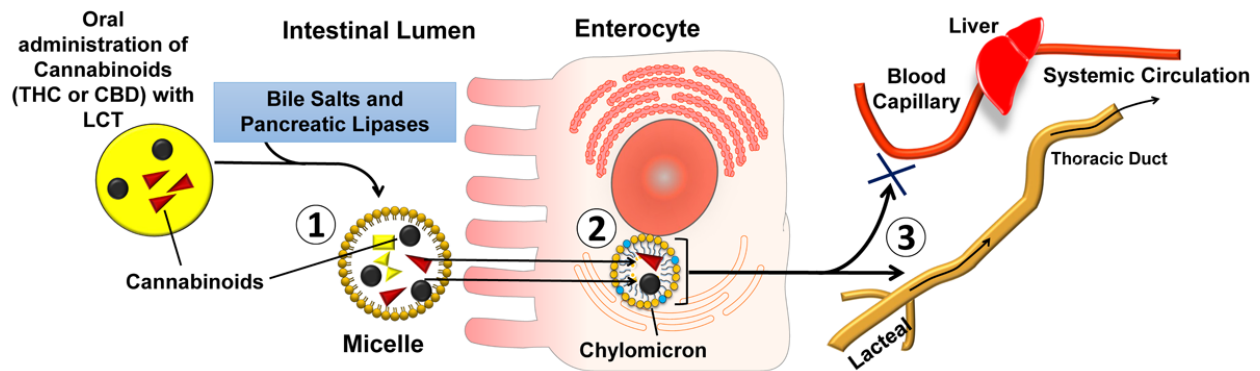


Sesame Oil

In 2016 an international group of authors published in the American Journal of Translational Research examined the relationship of dietary fat intake, in particular sesame oil and the absorption and distribution of THC and CBD isolates. The authors demonstrated a 2.5 fold and 3.0 fold increased absorption respectively into the blood stream. They were surprised, however, when the research animals showed a massive anti-inflammatory response, well beyond what would have been expected from these increases. Below is the schematic made by the authors showing increased absorption into capillaries with first pass metabolism (breakdown of cannabinoids) occurring at the liver, before going into systemic circulation. At the same time, emulsification of fat soluble cannabinoids in the sesame oil prepared THC and CBD showed increased intestinal absorption directly into the lymphatic system, without first pass metabolism.



In fact the authors determined that this way of administering cannabinoids had its largest absorption and effect from the route into the lymphatics, not the systemic circulation.¹ This same group of authors followed up this study in 2017 with another in Scientific Reports, where they looked at selective absorption of CBD and THC into the lymphatic system. They noted that THC absorbed 100 times and CBD 250 times higher concentration into the lymphatics than into the blood stream.² As the diagram from their first article shows, this lymphatic absorption bypasses first pass degradation by the liver that occurs in the bloodstream.

What is apparent, clinically, in my practice, is that using sesame oil with medical cannabis causes a faster and longer lasting response to THC and CBD. This is quite different than without sesame oil. Anxiety, mood, pain, inflammation, cancer, blood sugar, cholesterol, degenerative neurological symptoms and weight loss are all improved with CBD dominant strains taken

¹Zgair A, et al, Dietary fats and pharmaceutical lipid excipients increase systemic exposure to orally administered cannabis and cannabis-based medicines, American Journal of Translational Research, 2016;8(8):3448-3459 .

²Zgair A, et al, Oral administration of cannabis with lipids leads to high levels of cannabinoids in the intestinal lymphatic system and prominent immunomodulation, [Scientific Reports](#), 2017; 7: 14542, pp 1-23.

orally. Patients using THC strains followed with a dropper of sesame oil result in increased well-being, euphoria, pain control, neurodegenerative disorders, and sleep. In the second study cited above, the authors noted that when they put sesame oil and CBD in culture with lymphocytes from people with active Multiple Sclerosis, the inflammation of the lymphocytes was wiped out quickly.

I would recommend that patients using CBD with sesame oil, use CBD made with sesame oil or chase the preparations of CBD in oil, alcohol, gummies, cookies, candies, etc with a dropper of sesame oil. THC is more likely to cause the user to feel altered with sesame oil, so I usually recommend that people start with half of the normal dose and chase with sesame oil. I have been working with the staff at Synergy Wellness to help them formulate new tinctures with sesame oil. These approaches provide treatment that contains not only THC and CBD, but the other medically active cannabinoids, as well, including THCa, CBDA, THCV and THCVa. The acid forms of cannabinoids (THCa, CBDA, THCVa) work selectively on a receptor family that is known for fighting pain, inflammation, neurodegeneration and neuroregeneration. Synergy will create the Doctor's line with the Sesame Oil based products, complete with instructions, individual products and medical boxes. The medical boxes will focus on complete cannabis treatment for specific illnesses. Initially, the Doctor's Line and the Medical Boxes will be available exclusively for participants in the research program.