

CBD and Its Effect on Immunity

Immune system responses to infection or inflammation are complex, and they operate across multiple cell lines and multiple organs in the body. But lucky for us, there's CB2 receptors all over the lymph nodes, spleen and other various parts of the immune system. So CBD can have an effect on immune response all over the body. All these different cell lines have been studied in mice models, and in these pre-clinical studies in animals various immune cells show very interesting responses to the administration of CBD.

T-cells, which are often thought of in the setting of HIV or AIDS are used every day by us to fight normal diseases. T-cell activation in the setting of antigen presentation during inflammation or attack, is reduced by pre-treatment with CBD. And similarly, the interleukin secretion, the cytokines that are secreted by the t-cells can be reduced by up to 87%. Now, that really matters because the cytokines of the interleukins, tumor necrosis factor, are the chemicals that make you feel so sick when your immune system is under attack. When it's not just a sore throat but also fever, body aches and loss of appetite. That's all the fault of interleukins, tumor necrosis factor, and other cytokines. So a reduction in the production of cytokines is really an interesting finding associated with treatment with CBD.

And in the b-cells or sometimes referred to as memory cells, keep track of diseases and conditions we've already seen. These are important so your body can remember how to treat a disease and mount an immune response a little bit faster. B-cells, these memory cells, when pre treated with CBD, show reductions in the development of the immune bodies, the igM and igG, these antibodies that circulate through the system. Still an adequate number, but not an excessive hyper response after treatment with CBD. That response is attenuated.

And our foot soldiers, the macrophages, the cells within the immune system that go out and fight the fight. For example, if you have a sore throat, the macrophages converge and ingest the virus causing the sore throat. But in the process of ingestion, they also secrete these cytokines that cause all of the other symptoms that you experience along with the sore throat. Well, pre treatment with CBD on macrophages also shows an inhibition of the production of cytokines by up to 69%. So these mouse models show significant improvements in immune response with CBD, reductions in an intense immune response. And that's important, because many diseases appear to have an immune response component. It's considered frequent in diseases such as arthritis, but in a lot of other chronic disease the immune system can start to get disrupted. And mitigating that can be valuable. There's mouse models of arthritis showing that when we pretreat mice with CBD we can see a clinical improvement. Decreases in joint swelling, and decreases in the destruction of the synovium within the joint. In addition to that, when we draw the mouse's blood, there's actually a decreased serum level of anti-collagen antibodies, and decreased levels of cytokines. So the mice not only have better looking joints, but their blood counts would support reduced inflammation and less antibody production against the joint lining tissues.

Chronic pain, inflammation, diseases like this are likely caused by a merger of multiple things. Infection, genetic predisposition, hormonal variation, environmental experiences. We've been able to show that by knocking out CB2 receptors in mice, we've been able to experience greater disease severity in arthritis and by stimulating CB2 receptors found in the muscles of the skeleton and also in the immune system we can see a reduction in disease severity. So while short term studies may not be able to show the effect of the immune modulation effects of CBD, we know that those immune modulation effects are cumulative over time. The immune effects that caused these situations didn't happen overnight. So a two week or four week or six week study may not be effective in seeing reversals that you could expect to see in a study that's longer, like a four or six month study. And I think those studies are coming. But until then, it's very reassuring to know what's happening in the mouse models and how CBD affects the immune system in those settings.

For more information or to talk to a coach, contact us at cbdandcannabisinfo.com.