Cannabidiol Overview

Cannabidiol (CBD), a derivative of cannabis plant, has profound healthful effects. But, because of political, alleged abuse and legal issues few human studies are available. Nevertheless, animal models have been used showing broad benefits that are being consistently corroborated in human case reports and small trials. The two major cannabinoids in cannabis are THC and CBD. In contrast to THC, CBD has no psychoactive component. In most states THC is illegal but CBD is widely available and unrestricted because it comes from industrial hemp, a subspecies of cannabis, that contains only trace amounts of THC.

In the medical literature there are over 1300 studies about CBD and its effects on disease. The range of illness, injury and toxic organ exposure studied with CBD is large and the benefits almost universal. Specific animal models have been created to emulate the multitude of disorders that plague modern society and challenge CBD. In most cases results have been very favorable even when exposing tissue to the most toxic exposures to chemotherapy, trauma and irritants. Certainly, not always cured but consistently, outcomes demonstrate protected organ function, survival and improved health.

The reason for the broad spectrum of benefits of cannabidiol may lie in the fact that it parallels the body's own Endocannabinoid system (ECS). Discovered in 1991 the ECS acts as a master hormone and metabolic regulatory system about which only a few healthcare providers are familiar. Research on this topic has been expanding at an exponential pace. And, the details are proving to be extremely complex and integrated into all body systems.

The secrets of CBD’s method of action are still being discovered because cannabidiol is unlike any pharmaceuticals that we have previously explored. We do know some of the details but more remain to be elucidated. In general, there are four major areas that CBD modulates:

- Anti-inflammatory
- Immune modulation
- Cellular Preservation
- Anti-tumor

The therapeutic implication for CBD are broad because almost all noninfectious diseases seem to fall into one of these categories. The horizon extends from aging to zoonotic diseases with everything in between. Common targets include pain, arthritis, neuropathy, anxiety and sleep disorders. The best dosages have not yet been determined but, clinically, providers are seeing exceptional responses at relatively low doses. CBD products are available in many forms for sublingual, oral, topical and even for inhalation. Purified products may be available in the future, but because current products are whole plant extracts, injectable use is not considered. Despite the wide range of formats, no significant adverse effects have been reported in any test subjects.

The broadest benefits seem to be related to anti-inflammation. Many modern civilization

conditions, like pain, arthritis and neuropathy, appear to be closely associated with this general process. CBD addresses all of the major constituents. It attenuates inflammatory cell migration/infiltration and the production of inflammatory mediators. CBD suppresses proinflammatory signaling, including NF-κB, induced by LPS [irritant substance]. It's also effective in chronic neuropathic painful states linked to the release of proinflammatory cytokines, such as IL-6, IL-1β, and TNFα. CBD abolishes the increase of tissue nitric oxide in neuropathic and inflammatory pain models. Furthermore, the ability of CBD to reduce inflammatory markers has been shown in several experimental models. Finally, the fundamental mechanisms above have direct implications that apply to coronary artery disease, inflammatory bowel disorders and autoimmune disorders, like rheumatoid arthritis.

Regarding anxiety and sleep, CBD has a modulating effect on the body's ECS blocking the breakdown of positive, calming endorphins and inhibiting negative stimulating vanilloid receptors. Thus, reducing anxiety at the same time allowing the release of adverse and traumatic memories as seen in PTSD. The anxiety relief as well as stimulation of specific areas of the brain have consistently improved sleep quantity and quality. In addition, CBD increases dopamine levels and enhances mood as well as cognitive function.

National Cancer Institute's PDQ® in 2013 noted that cannabidiol is a potential anticancer drug. "The interest in anticarcinogenic properties of cannabinoids was even renewed after the discovery of the eCB system [endocannabinoid, the human neuromodulatory system] and the cloning of the specific cannabinoid receptors. Since then, several cannabinoids have been shown to exert anti-proliferative and pro-apoptotic effects in various cancer types (lung, glioma, thyroid, lymphoma, skin, pancreas, uterus, breast, prostate and colorectal carcinoma) both in vitro and in vivo. Moreover, other antitumourigenic mechanisms of cannabinoids are currently emerging, showing their ability to interfere with tumour neovascularization, cancer cell migration, adhesion, invasion and
metastasization."

In summary, cannabidiol offers a wide range of positive health effects with no significant adverse reaction reported. The mechanisms of action are complex and still await full illumination. Furthermore, cannabidiol concentrates from hemp are fundamentally a food supplement available to the entire populous. Providers need to be educated and trained in its value and use.

To learn more see projectcbd.org online or contact:
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