

The Antioxidative Properties of Cannabidiol

by Healthcare International Research Limited

INTRODUCTION

This short paper will evaluate the prevailing theories concerning the antioxidative properties of Cannabidiol (CBD). Despite years of deeply entrenched social stigmas attached to the use of CBD for the treatment of multiple conditions, the study and use of cannabinoids has been one of the most interesting approaches to pharmacotherapy in recent years¹. CBD has been scientifically proven to be non-psychoactive and non-euphoric², yet yields active Phyto cannabinoids that may support beneficial pharmacological results across a diverse spectrum of biological activity, including anti-inflammatory and antioxidant effects³.

THE IMPORTANCE OF ANTIOXIDANTS

The importance of antioxidants is not to be underestimated. Antioxidants are molecules that fight free radicals in your body. Free radicals are compounds that can cause harm if their levels become too high in the human body and have been linked to many serious diseases, skin conditions and chronic illnesses⁴. Moreover, when the critical balance between free radical generation and antioxidant defences becomes unfavourable, oxidative stress can take place within the human body that is associated with damage to a wide range of molecular species including lipids, proteins and nucleic acids⁵. Consequently, a major feature of oxidative stress is its ability to accelerate sickness, disease, inflammatory conditions and the process of ageing including skin degeneration⁶. Reactive Oxygen Species (ROS), are a subset of free radicals that contain oxygen that possess strong oxidising capabilities. They are deleterious to cells at high concentrations and prolonged ROS production is considered central to the progression of inflammatory disease⁷.

Scientists conclude that intensive research completed over the last twenty years has confirmed the correlation between oxidative stress and inflammation and promote the use of antioxidants to combat free radicals and ROS⁸.

Universally, scientists and nutritionists recommend obtaining antioxidants through antioxidant rich food and beverages; this has been the dominant view for many years with experts claiming plant-based foods, especially fruits and vegetables provide the best sources of antioxidants⁹. A current trend amongst health and beauty consumers is to increase antioxidant levels by taking additional vitamins and supplements. Market experts estimate the antioxidant market was valued at 3.72 Billion USD in 2020 and is projected to reach 6.06 Billion USD by 2027¹⁰. Outside the food and beverage sector, a major factor in market growth is the global rise in demand for anti-aging products and the requirement to eliminate free radicals¹¹. The number and proportion of people aged 60 years and older in the global population is increasing. In 2019, the number of people aged 60 years and older was 1 billion. This number will increase to 1.4 billion by 2030 and 2.1 billion by 2050¹². Consequently, this upward trend reflects the fact that people are living longer and wish to deter or retard the effects of aging.

However, there are contrasting theories that refute the benefits of antioxidant supplements with one researcher commentating that dietary antioxidant and antioxidant supplements are lauded as quenching reactive oxygen species and preventing different chronic diseases, but strong evidence for their beneficial effects is lacking. Moreover, at high concentrations, many antioxidants could act as pro-oxidants, increasing oxidative stress and inducing toxicity within the human body¹³. Whilst the antioxidant supplement debate continues to be played out, it is accepted by scientists, nu-

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tritionists and experts that Vitamin C, Vitamin E and Carotenoids (including beta-carotene) are tantamount to nourishing the human body with beneficial antioxidants to combat free radicals and eliminate oxidative stress¹⁴.

ANTIOXIDANT PROPERTIES OF CBD

Within the last three years, there is a marked uptick on the number of clinical and scientific research studies that have demonstrated the anti-inflammatory effects of CBD in several inflammatory conditions¹⁵. Being plant based, CBD has a wide spectrum of biological activity, including antioxidant and anti-inflammatory properties, which is why its behaviour in the prevention and treatment of diseases associated with oxidative stress and inflammation has been tested with positive results¹⁶. A pioneering study completed in 1998 concluded that CBD as a potent antioxidant was 30%-50% stronger than both Vitamins C & E¹⁷. Since this report was published, further claims that CBD is a strong antioxidant with powerful anti-inflammatory properties have been studied extensively with favourable findings. A study by leading pharmacologists in 2019 confirmed the antioxidative and anti-inflammatory properties of CBD, postulating that preclinical and clinical studies have contributed to a deeper understanding of the therapeutic potential of CBD for many diseases, including diseases associated with oxidative stress. Moreover, the study concludes that possible antioxidant and therefore anti-inflammatory mechanisms of CBD include reducing ROS, regulating the level and activity of oxidants and antioxidants, and reducing oxidative conditions by preventing the formation of superoxide radicals¹⁸. Medical experts and dermatologists agree there is substantive evidence across multiple clin-

ical trials that support the utility of topical CBD for the treatment of various inflammatory and autoimmune skin disorders that can retard aging of the skin, elevate skin collagen and reverse oxidative stress damage caused by adverse environmental conditions¹⁹. Peter Grinspoon, a leading international medical cannabis specialist, recommends application of topical CBD-infused oil, lotion or cream as the best option to reduce inflammation and treat skin conditions²⁰. It has been reported that CBD topicals can give skin a needed boost in moisture, elasticity and neuroprotective properties²¹.

CONCLUSION

Empirical studies continue to produce positive findings that CBD has strong antioxidant properties and is a powerful anti-inflammatory. Research shows that being plant based, CBD may offer 30%-50% more potency than Vitamins C & E which are critical in nourishing the human body with antioxidants to combat free radicals and fight oxidative stress. Moreover, Medical experts and dermatologists recommend topical application of CBD for the treatment of various inflammatory and autoimmune skin disorders that can retard aging of the skin, elevate skin collagen and reverse oxidative stress damage caused by adverse environmental conditions.

This white paper was completed for HIR by Harry Rule. Harry is a leading independent researcher specialising in qualitative research across a wide range of sectors. He holds a Masters of Research and has recently completed a Doctor of Business Administration and leads HIR's research team.

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