

Cannabis, cannabidiol, and epilepsy--from receptors to clinical response.

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Author information

Abstract

Recreational cannabis use in adults with epilepsy is widespread. The use of cannabis for medicinal purposes is also becoming more prevalent. For this purpose, various preparations of cannabis of varying strengths and content are being used. The recent changes in the legal environment have improved the availability of products with high cannabidiol (CBD) and low tetrahydrocannabinol (THC) concentrations. There is some anecdotal evidence of their potential efficacy, but the mechanisms of such action are not entirely clear. Some suspect an existence of synergy or "entourage effect" between CBD and THC. There is strong evidence that THC acts via the cannabinoid receptor CB1. The mechanism of action of CBD is less clear but is likely polypharmacological. The scientific data support the role of the endocannabinoid system in seizure generation, maintenance, and control in animal models of epilepsy. There are clear data for the negative effects of cannabis on the developing and mature brain though these effects appear to be relatively mild in most cases. Further data from well-designed studies are needed regarding short- and long-term efficacy and side effects of CBD or high-CBD/low-THC products for the treatment of seizures and epilepsy in children and adults.