

BPNA statement on use of marijuana (cannabis) related products in the treatment of complex epilepsies

The British Paediatric Neurology Association (BPNA) is the professional association that represents doctors who care for children with difficult epilepsies in the UK. The BPNA actively supports scientific research in the area of epilepsy that leads to better understanding and treatment of the condition.

Epilepsy affects 1-2% of the population of the United Kingdom and one third of those will have seizures that are not controlled by currently prescribed medications. There is a legitimate interest amongst medical professionals and families of children with epilepsy in any new therapies that may improve control of these difficult epilepsies.

Anecdotal reports regarding marijuana use for epilepsy have been around for over 150 years. Over 100 active compounds have been derived from the marijuana (cannabis) plant. Two of these compounds, cannabidiol (CBD) and tetrahydrocannabinol (THC), have been investigated the most for their possible therapeutic potential in medicine. THC is the major psychoactive component of marijuana that is responsible for giving so-called “highs” to recreational users of cannabis. CBD is not psychoactive in this way.

Both CBD and THC have been shown experimentally to have anti-epileptic effects. They act in different ways in the brain to achieve this effect. However, there is significant evidence that use of THC in the developing brain can cause damage to IQ, mental health and brain structure. These changes may be permanent. Consequently, doctors and scientists have concentrated instead on investigating the potentially less damaging cannabidiol (CBD) as a treatment for epilepsy in children.

One pharmaceutical company has produced a pure form of CBD (that contains less than 0.1% THC) and has rigorously investigated its use in two rare severe epilepsy syndromes: Dravet Syndrome and Lennox-Gastaut Syndrome. They have done this by conducting scientifically rigorous, double-blind, randomized controlled trials. This is the gold-standard method of investigating the efficacy of new drugs. These trials have shown that CBD is moderately but significantly more effective than a dummy treatment (placebo) in the control of seizures in these two conditions. However, the trials also showed that CBD had more side-effects than placebo and had interactions with other anti-epileptic drugs (eg clobazam and sodium valproate). The US Food and Drug Administration (FDA) has recently approved this purified form of CBD for use in Dravet Syndrome and Lennox-Gastaut Syndrome and it is likely that a license for use in the UK for similar indications will follow at some stage in the future.

There are pharmaceutical grade cannabis products produced in other countries that have higher concentrations of THC (ie greater than 0.2%). The efficacy of these products as a treatment for epilepsy in children, their interactions with other drugs and their side-effects have not been assessed in scientifically rigorous double-blind randomized controlled trials. They are not licensed for use in the UK and are not currently legal in the UK.

There is a wide-range of other cannabis products (“artisanal cannabis oils”) available on the internet, in some commercial outlets (eg health food shops) and from “marijuana dispensaries” in some countries. These products will contain both CBD and THC in varying quantities and proportions. If the quantity of THC is less than 0.2% then they are legal in the UK. Products containing more than 0.2% can be purchased abroad and are not legal.

These artisanal cannabis oils are not pharmaceutical grade products. As well as CBD and THC they may well contain other cannabinoids, pesticides and impurities. Independent laboratory testing of these products often reveals that they have different quantities of CBD and THC than is detailed on their label. It has also shown that different batches of the same product have different concentrations of constituents.

The cannabis oils may have anti-epileptic effects and there are anecdotal reports of positive results in children with epilepsy. However, anecdotal reports should not determine treatment policy for the population as a whole and products with high concentrations of THC may cause significant damage to the developing brain. Consequently the BPNA does not recommend their use.

The BPNA is very sympathetic to the needs of children with epilepsy and their families. Our members are devoted to improving the lives of children with epileptic seizures. We are keen to investigate the therapeutic potential of pharmaceutical grade cannabis related products in robust scientific treatment trials and to support the use of scientifically tested and proven treatments in appropriate clinical circumstances. We encourage all families who have children with complex epilepsies to consult with their paediatric neurologist to explore the many treatment options that exist and to make informed decisions about the pros and cons of different treatments.

Updated 4 July 2018