



# Cannabinoids in attention-deficit/hyperactivity disorder: A randomised-controlled trial

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## Abstract

Adults with **ADHD** describe self-medicating with **cannabis**, with some reporting a preference for cannabis over ADHD medications. A small number of psychiatrists in the US prescribe cannabis medication for ADHD, despite there being no evidence from randomised controlled studies. The EMA-C trial (Experimental Medicine in ADHD-Cannabinoids) was a pilot randomised placebo-controlled experimental study of a **cannabinoid** medication, **Sativex** Oromucosal Spray, in 30 adults with ADHD. The primary outcome was cognitive performance and activity level using the QbTest. Secondary outcomes included ADHD and emotional lability (EL) symptoms. From 17.07.14 to 18.06.15, 30 participants were randomly assigned to the active ( $n=15$ ) or placebo ( $n=15$ ) group. For the primary outcome, no significant difference was found in the ITT analysis although the overall pattern of scores was such that the active group usually had scores that were better than the placebo group (Est=-0.17, 95%CI-0.40 to 0.07,  $p=0.16$ ,  $n=15/11$  active/placebo). For secondary outcomes Sativex was associated with a nominally significant improvement in hyperactivity/impulsivity ( $p=0.03$ ) and a

cognitive measure of inhibition ( $p=0.05$ ), and a trend towards improvement for inattention ( $p=0.10$ ) and EL ( $p=0.11$ ). Per-protocol effects were higher. Results did not meet significance following adjustment for multiple testing. One serious (muscular seizures/spasms) and three mild adverse events occurred in the active group and one serious (cardiovascular problems) adverse event in the placebo group. Adults with ADHD may represent a subgroup of individuals who experience a reduction of symptoms and no [cognitive impairments](#) following cannabinoid use. While not definitive, this study provides preliminary evidence supporting the [self-medication](#) theory of [cannabis use](#) in ADHD and the need for further studies of the [endocannabinoid system](#) in ADHD.



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## Keywords

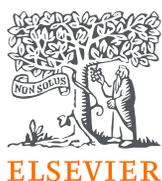
Attention deficit-hyperactivity disorder; Self-medication; Cannabinoids; Randomised-controlled trial

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