

### Tourette's Syndrome

Tourette's syndrome (TS) is a complex neuropsychiatric disorder of unknown etiology that is characterized by involuntary vocal tics. Severity of this condition varies widely among patients. Though there is no cure for Tourette's syndrome, the condition often improves with age. Experts estimate that 100,000 Americans are afflicted with TS.

A review of the scientific literature reveals several clinical trials investigating the use of cannabinoids for the treatment of TS. Writing in the March 1999 issue of the *American Journal of Psychiatry*, investigators at Germany's Medical School of Hanover, Department of Clinical Psychiatry and Psychotherapy, reported successful treatment of Tourette's syndrome with a single dose of 10 mg of delta-9-THC in a 25-year-old male patient in an uncontrolled open clinical trial.[1] Investigators reported that the subject's total tic severity score fell from 41 to 7 within two hours following cannabinoid therapy, and that improvement was observed for a total of seven hours. "For the first time, patients' subjective experiences when smoking marijuana were confirmed by using a valid and reliable rating scale," authors concluded.

Investigators again confirmed these preliminary results in a randomized, double-blind, placebo-controlled, crossover, single dose trial of THC in 12 adult TS patients. Researchers reported a "significant improvement of tics and obsessive-compulsive behavior (OCB) after treatment with delta-9-THC compared to placebo." [2] Investigators reported no cognitive impairment in subjects following THC administration [3] and concluded, "THC is effective and safe in treating tics and OCB in TS." [4]

Investigators confirmed these results in a second randomized, double-blind, placebo-controlled trial involving 24 patients administered daily doses of up to 10 mg of THC over a six-week period. Researchers reported that subjects experienced a significant reduction in tics following long-term cannabinoid treatment, [5] and suffered no detrimental effects on learning, recall or verbal memory. [6] A trend toward significant improvement of verbal memory span during and after therapy was also observed.

A 2003 review of the data published in the journal *Expert Opinions in Pharmacotherapy*, reported that in adult TS patients, "Therapy with delta-9-THC should be tried ... if well established drugs either fail to improve tics or cause significant adverse effects." [7] A 2013 review similarly concludes: "[B]y many experts THC is recommended for the treatment of TS in adult patients, when first line treatments failed to improve the tics. In treatment

resistant adult patients, therefore, treatment with THC should be taken into consideration." [8]

### REFERENCES

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