

## 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.<sup>[1]</sup> 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."<sup>[2]</sup> Investigators reported no cognitive impairment in subjects following THC administration<sup>[3]</sup> and concluded, "THC is effective and safe in treating tics and OCB in TS."<sup>[4]</sup>

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,<sup>[5]</sup> and suffered no detrimental effects on learning, recall or verbal memory.<sup>[6]</sup> A trend toward significant improvement of verbal memory span during and after therapy was also observed.

Summarizing their findings in the October 2003 issue of the journal *Expert Opinions in Pharmacotherapy*, investigators concluded 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."<sup>[7]</sup>

## REFERENCES

- [1] Muller-Vahl et al. 1999. [Treatment of Tourette's syndrome with delta-9-tetrahydrocannabinol](#). *American Journal of Psychiatry* 156: 495.
- [2] Muller-Vahl et al. 2002. [Treatment of Tourette's syndrome with Delta-9-tetrahydrocannabinol \(THC\): a randomized crossover trial](#). *Pharmacopsychiatry* 35: 57-61.
- [3] Muller-Vahl et al. 2001. [Influence of treatment of Tourette syndrome with delta9-tetrahydrocannabinol \(delta9-THC\) on neuropsychological performance](#). *Pharmacopsychiatry* 34: 19-24.
- [4] Muller-Vahl et al. 2002. op. cit.
- [5] Muller-Vahl et al. 2003. [Delta 9-tetrahydrocannabinol \(THC\) is effective in the treatment of tics in Tourette syndrome: a 6-week randomized trial](#). *Journal of Clinical Psychiatry* 64: 459-65.
- [6] Muller-Vahl et al. 2003. [Treatment of Tourette syndrome with delta-9-tetrahydrocannabinol \(delta 9-THC\): no influence on neuropsychological performance](#). *Neuropsychopharmacology* 28: 384-8.
- [7] Kirsten Muller-Vahl. 2003. [Cannabinoids reduce symptoms of Tourette's syndrome](#). *Expert Opinions in Pharmacotherapy* 4: 1717-25.