Kirsten R. Müller-Vahl, Professor of Psychiatry, Department of Psychiatry, Social Psychiatry and Psychotherapy, Hannover Medical School. Graduate of Hannover Medical School.

Head of Tourette Syndrome Outpatient Department since 1995; specialist for general psychiatry and Assistant Medical Director since 2006.

Member, scientific board of the German Tourette Syndrome Association (TGD e.V.); Tourette Association America (TAA), USA; Association for Cannabinoid Medicines (ACM); International Association for Cannabinoid Medicines (IACM); European Society for the Study of Tourette Syndrome (ESSTS).

Scientific Award of the German Tourette Syndrome TGD e.V. (2012) and the IACM (2017).

E-Mail Mueller-Vahl.Kirsten@mh-hannover.de

Medical cannabis has enormous therapeutic potential. However, it is not well understood at the moment, and clinicians need to find out more about how this potential can be unlocked. We are still at the start of a journey here.

Endocannabinoids in the brain (endogenous lipid-based retrograde neurotransmitters) influence all other neurological systems. This modulating effect holds great therapeutic potential, for it offers the prospect of our one day being able to treat not just neurological conditions but also the psychiatric disorders that characteristically accompany them. It is common for patients with Parkinson disease, for example, to also suffer from depression, anxiety, and sleeplessness, but the discipline of neurology itself does not usually address these problems.

Most psychiatric disorders are attributable to an underlying genetic dysfunction. In the case of Parkinson disease, we understand the nature of the dysfunction and are able to counter it with dopamine. I am convinced that a range of neurological disorders, both neurodegenerative and neurodevelopmental (like Tourette syndrome), may ultimately be traceable to endocannabinoid deficiency

syndrome. We already know which genes are responsible for regulating the endocannabinoid system, and I believe that advances in genetics and genomics will provide the answers we are seeking within our lifetimes.

My experience indicates that medical cannabis does not have an addictive effect when used under medical supervision. Of the two cannabinoids in therapeutic use today, cannabidiol (CBD) is not psychoactive, and I myself have encountered no instances of patients being treated with tetrahydrocannabinol (THC) showing signs of dependence.

A defining characteristic of endocannabinoids is that they exist throughout the body and not just in the brain. This may help explain the phenomenon whereby medical cannabis appears to address a range of related symptoms simultaneously. To define the specific indications for which medical cannabis has unquestionable relevance, however, will call for extensive, high-quality clinical trials. The considerable body of small trials and case studies already in existence in this field offers many good starting points for designing such essential large-scale studies.