

Synopsis

Theme: Hyposmia in Parkinson's Disease: A chance for early detection?
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Ever since its discovery and first description by Dr. James Parkinson in 1817, Parkinson's Disease has generally been considered, diagnosed and treated as a pure motor disease.

Although until today underlying pathological processes remain poorly understood, the last years' research acknowledged that the existence of a pre motor phase is most likely. A large variety of non-motor symptoms like hyposmia, autonomic dysfunctions, REM Sleep Behavior Disorder or depression have been observed repeatedly. It is verisimilar that they are of same descent as the classic cardinal symptoms and precede their onset for up to 20 years. This raises the question for a pre motor symptom of high prevalence which can be detected easily in order to be able to diagnose Parkinson's Disease at an early stage. One of the possible answers is hyposmia.

Hyposmia occurs in up to 90% of Parkinson's Disease patients, appears about seven years prior to first motor symptoms and can be tested quickly and cost-efficiently ambulant or at bedside. It could improve differential diagnosis sharpening the distinction of Parkinson's Disease and very similar movement disorders like progressive supranuclear palsy or essential tremor. Despite their heterogeneous nature, hyposmia affects both familial and idiopathic forms of Parkinson's Disease. Therefore it seems reasonable to alter current diagnostic practice adding olfactory testing and neuroimaging of the piriform cortex to the standard procedure. The thesis will deliver reasons to do so giving an overview off up to date research results.

Furthermore the need for an early detection will be accentuated, demonstrating that it could reduce stress in diagnosed patients giving them time to adjust before the onset of severe motor symptoms. In addition to that identification of future Parkinson's Disease patients would simplify their involvement into longitudinal studies, substantially improving research which will help increase the understanding of pathogenesis and effectiveness of medication. Besides comprehension of the nose being a major gateway for xenobiotics to enter the brain and of the piriform cortex and its suspected projections to the substantia nigra will be broadened.