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Altered body awareness in basal ganglia disease: a problem of perception  
or sensorimotor integration?

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## ABSTRACT OF THE TALK

The basal ganglia are a large subcortical structure that is part of a massive network involving also the neocortex and the thalamus. The exact function of the basal ganglia are unknown, but evidence suggests that it is part of a universal reward system. It is also known that basal ganglia dysfunction leads to a variety of motor problem such as tremor, muscle rigidity, or dyskinesia. Until recently little has been known about the sensory role of the basal ganglia, which seems peculiar since the basal ganglia receive massive sensory afferent projections. In recent years an increasing number of researchers have examined this issue by studying clinical populations with basal ganglia diseases. My laboratory has focused on determining whether patients with Parkinson's disease or dystonia, two prominent diseases affecting the basal ganglia, have problems of kinaesthesia or body awareness. I will report on a series of psychophysical studies as well as on brain imaging data demonstrating that kinaesthesia is altered in basal ganglia disease. I will then discuss the implications of this finding for sensorimotor integration and motor control.