

### **Frontal lobes characteristic symptoms in Parkinson's disease.**

Parkinson's disease (PD) is a neurodegenerative hypokinetic movement disorder. The number of ill people will probably increase four times in the nearest future because we all are members of an aging society. The majority of PD patients have well known symptoms: shaking hands, slower body moves and difficulties with walking. Besides well-known symptoms neurologists and psychologists very often diagnose neuropsychiatric disorders, like depression, apathy, anxiety and cognitive impairment. Cognitive functioning in PD patients is a complex issue. Impairment in executive function is one of the most commonly reported cognitive deficits in PD. Executive function is a general term for a number of processes involved in regulating goal-oriented behaviour. People with Parkinson's disease are reported to have deficits in cognitive flexibility, set-switching, inhibition and selective attention, concept formation, planning and decision making. Executive function difficulties may affect caregiver burden and patients' quality of life. Most studies use only screening tests, which aren't enough sufficient to detect specific cognitive disorders. This is why we are using an experimental procedure in this project, so that the results can be interpreted in the context of particular processes which will also allow the identification of mutual relationships between selected executive functions and other symptoms associated with changes in frontal lobes, such as apathy or anosognosia, i.e. limited ability to assess one's own cognitive impairments.

Therefore, the goal of the proposed project is to investigate the relationships between symptoms characteristic of frontal lobe disturbances in PD patients, such as executive difficulties, apathy, and anosognosia, and their influence on quality of life and caregivers' burden. Following this line of thought the implications of this study concern several aspects. First of all, the results may help in understanding the pattern of particular executive difficulties at various stages of the disease. Moreover, they will allow for better understanding of the relations between symptoms typical of the frontal lobes, such as apathy or anosognosia, which will translate into extension of the current neuropsychiatric models and at the same time will be useful in neuropsychological examinations of patients. Additionally, the influence of the aforementioned difficulties on the everyday functioning and quality of life of caregivers should be taken into account. Apathy decreases everyday functioning and leads to a higher sense of burden, distress, and increases the risk of death. Everyday life challenges, even small physical and cognitive deficits, may cause significant caregivers' burden. Cognitive impairment and apathy may negatively influence the quality of life of the caregivers and increase the objective and subjective burden.