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## Levodopa Effect and Motor Function in Late Stage Parkinson's Disease

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Share this:   **Article type:** Research Article**Authors:** [Rosqvist, Kristina<sup>a, \\*</sup>](#) | [Horne, Malcolm<sup>b, c</sup>](#) | [Hagell, Peter<sup>d</sup>](#) | [Iwarsson, Susanne<sup>e</sup>](#) | [Nilsson, Maria H.<sup>e, f</sup>](#) | [Odin, Per<sup>a, g, h</sup>](#)**Affiliations:** [a] Department of Clinical Sciences Lund, Neurology, Faculty of Medicine, Lund University, Lund, Sweden | [b] Florey Institute for Neuroscience and Mental Health, University of Melbourne, Parkville, VIC, Australia | [c] Centre for Clinical Neurosciences and Neurological Research, St Vincent's Hospital Melbourne, Fitzroy, VIC, Australia | [d] The PRO-CARE Group, School of Health and Society, Kristianstad University, Kristianstad, Sweden | [e] Department of Health Sciences, Faculty of Medicine, Lund University, Lund, Sweden | [f] Memory Clinic, Skåne University Hospital, Malmö, Sweden | [g] Department of Neurology, Skåne University Hospital, Lund, Sweden | [h] Department of Neurology, Central Hospital, Bremerhaven, Germany**Correspondence:** [\*] Correspondence to: Kristina Rosqvist, Restorative Parkinson Unit, Skåne University Hospital, Forskningsenhet Neurologi, Wigerthuset, Remissgatan 4, plan 1, 221 85 Lund, Sweden. E-mail: [kristina.rosqvist@med.lu.se](mailto:kristina.rosqvist@med.lu.se).**Abstract:** Background: It is unclear to which degree Levodopa (L-dopa) remains effective also in the late stage of Parkinson's disease (PD) and to which degree motor fluctuations and dyskinesias remain a problem. Objective: To assess responsiveness of motor symptomatology to L-dopa in a group of patients with late stage PD. Moreover, to investigate the extent to which motor fluctuations and dyskinesias occur. Methods: Thirty PD patients in Hoehn and Yahr (HY) stages IV and V in "on" were included. L-dopa responsiveness was assessed with a standardized L-dopa test in the defined "off" and defined "on" states. Motor function was assessed by the Unified PD Rating Scale (UPDRS) III and timed tests. Motor fluctuations and dyskinesias were assessed by the UPDRS IV. The participants were further monitored for 10 days with a mobile movement-analysis-system, the Parkinson's Kinetigraph (PKG). The median (q1–q3) L-dopa equivalent daily dose (LEDD) was 799 (536–973) mg. Results: The

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UPDRS III score improved with  $\geq 15\%$  in 15 (50%) and with  $\geq 30\%$  in six (20%) participants during the L-dopa test. The median (q1–q3) UPDRS III score in “off” was 46 (37–53) and in “on” 36 (28–46). Twenty-one (70%) of the participants reported either predictable or unpredictable “off” fluctuations (items 36–37). The prevalence of dyskinesias (item 32, duration of dyskinesias  $\geq 1$ ) was 47%. The PKG indicated that dyskinesias primarily were mild and that a majority had a pronounced “off” symptomatology, spending a large proportion of the day either asleep or very inactive. Conclusions: Half of a group of patients with late stage PD had an L-dopa response of  $\geq 15\%$  on the UPDRS III. According to the UPDRS IV, a majority of the patients had motor fluctuations and about half had dyskinesias, although the PKG results suggested that these were not very severe.

**Keywords:** Parkinson's disease, levodopa, levodopa test, late stage, motor complications, fluctuations, dyskinesias

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