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Levodopa kinetic-dynamic test [↗](#)

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1 Works for me [dx.doi.org/10.17504/protocols.io.bbq8imzw](https://doi.org/10.17504/protocols.io.bbq8imzw)

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ABSTRACT

Levodopa oral test

Administration of a subacute dose of levodopa (100 mg) plus benserazide (25 mg) or carbidopa (25 mg) under standardized conditions.

Levodopa kinetic–dynamic monitoring

Measurements of plasma levodopa concentrations and clinical effects by objective motor tests (alternate finger tapping test).

EXTERNAL LINK

<https://doi.org/10.1371/journal.pone.0229729>

THIS PROTOCOL ACCOMPANIES THE FOLLOWING PUBLICATION

Contin, M., Riva, R., Martinelli, P., Albani, F., Avoni, P., and Baruzzi, A. (2001) Levodopa therapy monitoring in patients with Parkinson's disease: a kinetic-dynamic approach. *Ther Drug Monit*, 23:621-629.

- 1 Administration of a subacute test dose of levodopa (100 mg) plus benserazide (25 mg) or carbidopa (25 mg) under standardized conditions:
 - Fasting dosing
 - At least 12 hours of levodopa and possibly concomitant antiparkinsonian therapy wash-out
- 2 Blood samplings are drawn by an indwelling catheter before levodopa dosing, at 15-min intervals for the first 90 min, then half-hourly, up to 3 hours after dosing.
- 3 Blood specimens are transferred into heparinized tubes and immediately centrifuged at 1500g for 10 minutes at 4°C. Plasma samples are stored at -80°C until analysis (usually within 6 months).
- 4 Levodopa plasma concentration measurements are performed by high-performance liquid chromatography (HPLC) with coulometric detection (Baruzzi, A., Contin, M., Albani, F., and Riva, R. (1986) Simple and rapid micromethod for the determination of levodopa and 3-O-methyldopa in human plasma by high-performance liquid chromatography with coulometric detection. *J Chromatogr*, 375:165-169).

- 5 Motor effects are tested by the alternate index finger tapping test (the number of times the patient could alternately tap two buttons 20 cm apart in 60 seconds with the most affected hand) up to 4 hours post-dosing, using a computerized touch screen system (mTapping, mHealth Technologies srl, Bologna, Italy).
- 6 Possible levodopa induced dyskinesias are rated at the same times as motor responses by the Clinical Dyskinesia Rating Scale (CDRS) (Hagell P., Widner H. (1999) Clinical rating of dyskinesias in Parkinson's disease: use and reliability of a new rating scale. *Mov Disord*, 14: 448-455.).



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