

A well-established measure: The Unified Parkinson's Disease Rating Scale (UPDRS)

Developed to address the need for a comprehensive PD measurement tool^{1,2}

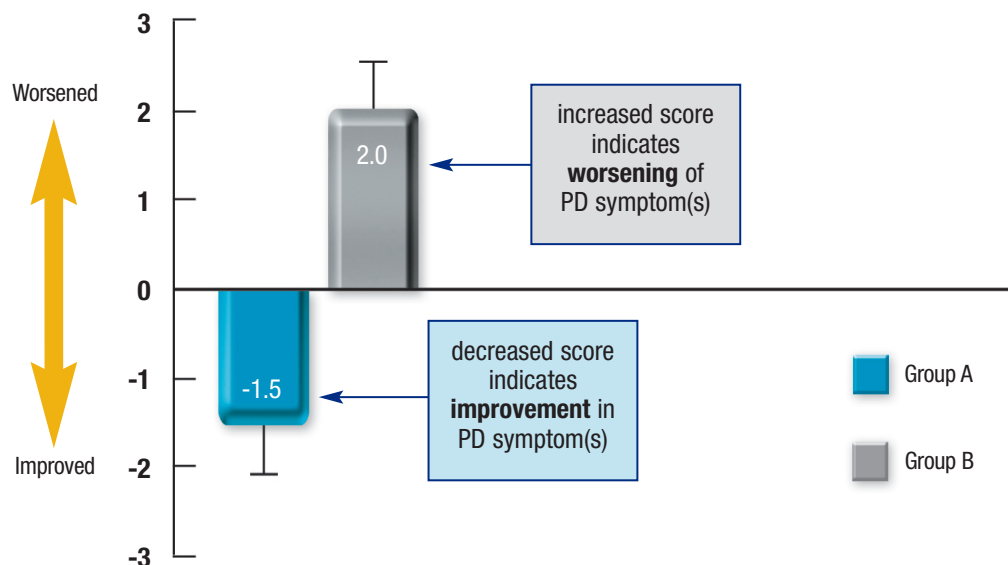
- Introduced in 1987 by a team of PD investigators as an overall assessment scale that would quantify the signs and symptoms of PD
 - Allows for both an overall measure of disability and individual subscores
 - Encompasses earlier rating scales: Hoehn and Yahr staging scale (assessed motor skills), and the modified Schwab and England activities of daily living (ADL) scale

20 years of broad usage: UPDRS is the most commonly used research tool to evaluate new treatments for Parkinson's disease

Designed to assess PD symptoms

- Includes both scoring by a clinician (motor examination) and a historical report of mental functioning and activities of daily living (ADL) obtained by questioning the patient
- Allows the clinician to assess the worsening or improvement of PD over time
- Symptomatic worsening/improvement can be measured as a change from baseline
 - Worsening of symptoms increases score
 - Improvement in symptoms decreases score

Example of a UPDRS chart measuring the change from baseline (mean \pm SE)



“The UPDRS is a useful way to maintain an ongoing record of patient function and to assess disability.”¹

(Olanow, 2001)

“The most widely used standardized scale to assess parkinsonism is the UPDRS.”³

(Rascol, 2002)

Overview of UPDRS and subscale items

Total UPDRS consists of four parts²

Parts I, II, and III contain 44 questions each measured on a 5-point scale (0-4).

- I. **Mentation, behavior, and mood:** intellectual impairment, thought disorder, motivation/initiative, depression
- II. **Activities of daily living (ADL):** speech, salivation, swallowing, handwriting, cutting food, dressing, hygiene, turning in bed, falling, freezing, walking, tremor, sensory complaints
- III. **Motor examination:** speech, facial expression, tremor at rest, action tremor, rigidity, finger taps, hand movements, hand pronation and supination, leg agility, arising from chair, posture, gait, postural stability, body bradykinesia

In monotherapy, a “Total UPDRS” score is the combined sum of parts I, II, and III: 0 (not affected) to 176 (most severely affected).

In adjunct therapy, part IV is included. Part IV contains 11 questions and the scale can range from 0 to 23.

- IV. **Complications of therapy:** dyskinesia-duration, dyskinesia-disability, dyskinesia-pain, early morning dystonia, “offs”-predictable, “offs”-unpredictable, “offs”-sudden, “offs”-duration, anorexia-nausea-vomiting, sleep disturbance, symptomatic orthostasis

Motor subscales provide a measure of key motor symptoms

Representative sample of key measurement items from the UPDRS scale²

UPDRS Item	Assessment	Scale Measurement Range
Bradykinesia subscale	Score includes <ul style="list-style-type: none"> • body bradykinesia and hypokinesia • left- and right-hand finger taps, opening and closing of hands, pronation/supination of hands, and heel taps 	0 (not affected) to 36 (most severely affected)
Tremor subscale	Score includes <ul style="list-style-type: none"> • action tremor of right and left hands • resting tremor in the left and right hands and feet • resting tremor of the face, lips, and chin 	0 (not affected) to 32 (most severely affected)
Rigidity subscale	Score includes <ul style="list-style-type: none"> • rigidity in the neck • rigidity in the left and right upper and lower extremities 	0 (not affected) to 20 (most severely affected)
PIGD (postural instability and gait disorder)	Score includes <ul style="list-style-type: none"> • falling, freezing, ability to walk • gait, postural stability 	0 (not affected) to 20 (most severely affected)

References

1. Olanow CW, Watts RL, Koller WC. An algorithm (decision tree) for the management of Parkinson's disease (2001): treatment guidelines. *Neurology*. 2001;56(11 suppl 5):S1-S88.
2. Fahn S, Elton RL, UPDRS Development Committee. Unified Parkinson's Disease Rating Scale. In: Fahn S, Marsden CD, Calne DB, Goldstein M, eds. *Recent Developments in Parkinson's Disease*. Florham Park, NJ: Macmillan; 1987:153-163.
3. Rascol O, Goetz C, Koller W, Poewe W, Sampaio C. Treatment interventions for Parkinson's disease: an evidence based assessment. *Lancet*. 2002;359:1589-1598.