Reasons for assessment

- Screening
- Aid to diagnosis
- Quantifying symptom severity
- Measuring change
- Describing symptom profile

Key features of measures will differ depending on the purpose of the assessment
How to choose a measure

• Was the test designed to measure what you want to assess?
• Does it have acceptable reliability and validity?
  – based on published evidence
• Has it been validated in Parkinson’s disease and/or Parkinson’s disease with dementia (PD/PD-D)?
• Are there appropriate norms and cut-off scores?
  – age, sex, education, etc.
• Is it available in chosen language/culture?
  – validated translations, cultural adaptation
• Are alternate forms available for repeat assessment?
• What are the resource issues?
  – cost of test/materials, administration and scoring time, training and expertise
Cognitive assessment: recommendations

• Brief screening (alternative to Mini Mental State Exam, MMSE)
  – Montreal Cognitive Assessment (MoCA)

• Screening and diagnosis, assessment of severity and profile, assessing change, comparison between disorders
  – Addenbrooke’s Cognitive Exam (ACE-R), Mattis Dementia Rating Scale (DRS-2)

• Assessing severity, PD-D diagnosis
  – Parkinson’s Disease Cognitive Rating Scale (PD-CRS)

• Assessing executive/‘subcortical’ function
  – Scales for Outcomes in Parkinson’s Disease-Cognition (SCOPA-COG), Frontal Assessment Battery (FAB)
Montreal Cognitive Assessment (MoCA)

- Administration Time: 10 minutes
- Maximum Score: 30
- Cognitive Domains: 1
  - Includes items of executive function (trail making, abstraction and phonemic fluency)
- Screening cut-off: ≤25 (NB: based on Alzheimer’s disease/mild cognitive impairment)
- Alternate forms: No
- Validated in PD/PD-D: Yes (PD)
- Available languages: Most European, Middle-Eastern and Asian (see www.mocatest.org/)
Addenbrooke’s Cognitive Examination (ACE-R)

- Administration Time: 15–20 minutes
- Maximum Score: 100
- Cognitive Domains: 6
  - Attention/Orientation (18)
  - Memory (26)
  - Verbal fluency (14)
  - Language (26)
  - Visuospatial (16)
- Screening cut-off: ≤83
- Alternate forms: No
- Validated in PD/PD-D: Yes (PD)
- Available languages: English, French, German, Spanish, Hebrew

## Dementia Rating Scale (DRS)

- **Administration Time**: 15–30 minutes
- **Maximum Score**: 144
- **Cognitive Domains**: 5
  - Attention (37)
  - Initiation and Perseveration (37)
  - Construction (6)
  - Conceptualization (39)
  - Memory (25)
- **Population norms**: Yes
- **Screening cut-off**: ≤123 (screening)\(^1\)
- **Alternate forms**: Yes (DRS-2)
- **Validated in PD/PD-D**: Yes
- **Available languages**: Most languages

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Parkinson’s Disease Cognitive Rating Scale (PD-CRS)

- Administration Time: 15–30 minutes
- Maximum Score: 134
- Cognitive Domains: 2
  - ‘Cortical’ (20) (naming, clock drawing copy)
  - ‘Subcortical’ (114) (free recall imm. & del., sustained attention, clock drawing, working memory, fluency)
- Population norms: No
- Screening/diagnosis cut-offs: ≤64 (PD-D)
- Alternate forms: No
- Validated in PD/PD-D: Yes (PD/PD-D)
- Available languages: Spanish, English
Scale for Outcomes of Parkinson’s disease – Cognitive (SCOPA-COG)

- **Administration Time**: 10–20 minutes
- **Maximum Score**: 43
- **Cognitive Domains**: 4
  - Memory (22)
  - Attention (4)
  - Executive (12)
  - Visuospatial (5)
- **Population norms**: No
- **Screening/diagnosis cut-offs**: N/A
- **Alternate forms**: No
- **Validated in PD/PD-D**: Yes (PD)
- **Available languages**: Spanish, Dutch, English, Brazilian
  
  [www.scopa-propark.eu](http://www.scopa-propark.eu)
Neuropsychiatry/general screening

• Wide range of psychiatric and behavioural symptoms in PD/PD-D yet no comprehensive measurement tool exists

• We can assess psychiatric and behavioural problems as part of broader screening for non-motor symptoms in PD

• Advantages
  – Can be less threatening for patients
  – Raises profile of psychiatric and behavioural symptoms in consultation
  – Gives patients (and carer) permission or encouragement to raise and discuss problems
MDS-UPDRS (Part 1) (non-Motor Aspects of Experiences of Daily Living, nM-EDL)

- New Part 1 to MDS-UPDRS
- Screening, single item
- ‘Non-Motor Aspects of Experiences of Daily Living’
- Both clinician rated and self-completed questions
- Standard UPDRS 0–4 severity rating

Clinician Rated
- Cognitive impairment
- Hallucinations and psychosis
- Depressed mood
- Anxious mood
- Apathy
- Impulse control disorder/dopamine dysregulation syndrome (ICD/DDS)

Self/Carer Rated
- Sleep problems
- Daytime sleepiness
- Pain and other sensations
- Urinary problems
- Constipation
- Light headedness on standing
- Fatigue

www.movementdisorders.org/UserFiles/New%20UPDRS%207%203%2008%20final.pdf
Non-Motor Symptom Questionnaire

- Self/carer completed
- Simple ‘yes/no’ answers
- Can be completed while waiting for consultation
- Can form focus for discussion
- Can guide follow-up assessment

Non-Motor Symptoms Scale (NMSS)

- Quantitative instrument
- Assesses global NMSS severity
- Clinician rated
- Assesses frequency and severity of symptoms
- 9 domains including
  - Sleep/fatigue
  - Mood/cognition
  - Perception/hallucinations
  - Attention/memory
  - Sexual function

www.pdnmg.com/tools/nms-scale08.pdf
Neuropsychiatric Inventory (NPI)

- Widely used clinically and in research including PD/PD-D
- Clinician rated – based on interview with informant (typically carer; also version for formal care settings)
- Screening questions + follow-up
- Assesses presence/absence, frequency and severity of symptoms (+ carer distress)
- 10 problem areas
  - Delusions, hallucinations, depression, anxiety, agitation/aggression, euphoria, dysinhibition, irritability/lability, apathy, aberrant motor activity, night-time behavioural disturbance
- Available with training tape from author
  - jcummings@mednet.ucla.edu
NPI-Questionnaire (NPI-Q)

- Brief questionnaire version of full NPI
- Completed by informant
- Same domains as NPI
- Assesses presence/absence, frequency and severity of symptoms + carer distress
- Published validation studies in English, Dutch, Spanish, Russian, Japanese
- Online training and certification at www.alz.washington.edu/npig/Signin.html
Scale for Outcomes of Parkinson’s disease – Psychiatric Complications (SCOPA-PC)

- Brief clinical interview
- Simple 0–3 ratings severity rating
- 7 problem areas
  - Hallucinations
  - Illusions and misidentifications
  - Paranoid ideation
  - Altered dream phenomena/REM sleep behaviour disorder (RBD)
  - Confusion
  - Sexual preoccupation
  - Compulsive behaviour (shopping/gambling)

www.scopa-propark.eu
Individual symptoms

- Multiple symptom-specific measures
- Most developed for non-PD and non-neurological populations
- Most involve self-report
- Validity and reliability should not be assumed for PD, especially for patients with dementia
- Conventional cut-offs for non-PD validated scales should be interpreted with caution

See MDS Rating Scale Task Force publications in Movement Disorders for full critiques and recommendations
Depression, anxiety, sleep and arousal

• **Depression**\(^1\)
  - Beck Depression Inventory (BDI/BDI-II)
  - Geriatric Depression Scale (GDS)
  - Hospital Anxiety and Depression Scale (HADS)

• **Anxiety**\(^2\)
  - Hospital Anxiety and Depression Scale (HADS)

• **Sleep and arousal**
  - Parkinson’s Disease Sleep Scale (PDSS)
  - SCOPA-Sleep
  - Epworth Sleepiness Scale (ESS)
  - Parkinson’s Fatigue Scale (PFS)

Psychosis, neurocognitive and Impulse Control Disorder (ICD)

- Delusions and hallucinations\(^1\)
  - Neuropsychiatric Inventory (NPI)
  - Parkinson Psychosis Questionnaire (PPQ)
- Neurocognitive\(^2\)
  - Apathy Scale (AS)
  - Frontal Systems Behaviour Scale (FrSBe)
- ICD
  - South Oaks Gambling Screen (SOGS)
  - Compulsive Shopping Questionnaire (CSQ)
  - Hypersexuality Questionnaire (HSQ)
  - NB New PD-specific ICD/DDS screening and severity scales currently under development

\(^1\)Fernandez et al. Mov Disord 2008; \(^2\)Leentjens et al. Mov Disord 2008; 23:2004–14
References: Cognitive assessment

Mallow DW, Standish TI. A guide to the standardized Mini-Mental State Examination. *Int Psychogeriatr*, 1997;9 Suppl 1:87–94

**MoCA**: The Montreal Cognitive Assessment, MoCA: a brief screening tool for mild cognitive assessment.
Link: [www.mocatest.org/](http://www.mocatest.org/)


Link: [egret.psychol.cam.ac.uk/medicine/](http://egret.psychol.cam.ac.uk/medicine/)

Link: [www.scopa-propark.eu](http://www.scopa-propark.eu)


Question 1. For an INITIAL assessment of a patient’s cognitive function, which, if any, of the tools listed below would you use?

- A) MoCA
- B) MMSE
- C) NPI
- D) HADS

Incorrect. This tool is used in assessing anxiety and depression in patients. Please try again.
Question 2. To assess a patient's psychiatric function, which, if any, of the tools listed below would you use?

- A) NPI  [Correct. This tool is widely used to assess the psychiatric state of patients with PD.]
- B) SCOPA-PC  [Incorrect. This tool can be used to assess the non-motor symptoms of patients with PD.]
- C) NMS  [Incorrect. This brief questionnaire is used in cognitive assessments. Please try again.]
- D) DRS  [Incorrect. This tool is not applicable to psychiatric assessment. Please try again.]
- E) MoCA  [Incorrect. This tool is not applicable to psychiatric assessment. Please try again.]

You must answer the question before continuing.

Correct - Click anywhere to continue
Incorrect - Please click anywhere to try again
References: Psychiatric assessment

**nM-EDL:** Link: [www.movementdisorders.org/UserFiles/New%20UPDRS%207%20final.pdf](http://www.movementdisorders.org/UserFiles/New%20UPDRS%207%20final.pdf)


Link: [www.pdnmg.com/tools/nms-scale08.pdf](http://www.pdnmg.com/tools/nms-scale08.pdf)


Link: [www.scopa-propark.eu](http://www.scopa-propark.eu)

Link: [www.psychcorp.co.uk](http://www.psychcorp.co.uk)


**HADS:** Zigmond AS, Snaith RP. The Hospital Anxiety and Depression Scale. *Acta Psychiactrica Scandinavica* 1983; 67:361–370  
References: Psychiatric assessment

Link: www.parkinsons.org.uk/pdf/Sleepscale.pdf

Link: www.scopa-propark.eu


