

## **Parkinson's Disease Version 2.0 NINDS CDE Project Psychiatry Subgroup Summary**

The NINDS Parkinson's Disease (PD) v2.0 CDE Psychiatry Subgroup exists to identify a consensus regarding the best evidence assessments for the detection and clinical monitoring of psychiatric syndromes that occur during the recognized course of Parkinson's disease. The subgroup should appreciate that psychiatric syndromes may exist in several permutations when they present in PD ranging from a 'typical' idiopathic presentation found in non-PD populations, to 'atypical' presentations that may represent alternate mechanism, e.g., related to the neurodegenerative process of PD or the dopaminergic medications used for motor symptom management, and the possibility that the typical presentation is confounded or obscured by overlap with the symptoms of PD. Revisions to the recommendations will ideally occur at regular intervals and will be informed and refined by the development of more sophisticated e.g., electronic monitoring, more sensitive and specific assessments due to improved understanding of phenomenology, and biomarkers. Successful identification of the best evidence assessments will ensure harmonization of data across studies and facilitate combining data to increase statistical power.

The subgroup's approach was to review existing instruments from the PD v1.0 CDE Project that were validated and expand the selection CDEs to incorporate newly validated scales based on their prior knowledge and literature reviews. The subgroup divided the instruments into categories based on member expertise and evaluated each scale's use in PD and its clinimetric properties. Recommendations were finalized through discussions during teleconference calls.

Consideration of dementia in Parkinson's was discussed as a subpopulation of concern, but most instruments have not been validated for use in Parkinson's dementia.

A summary table of recommendations is included below. The subgroup also reviewed scales that are appropriate when a psychiatric diagnosis is needed but were not included in the recommendations as they do not fit the required inclusion criteria for PD research. These scales include the Mini International Neuropsychiatric Interview (MINI), Proposed Criteria for Diagnosis of the Syndrome of Apathy, Structured Clinical Interview for DSM-IV Axis Disorders-Patient Version (SCID-I/P), and Structured Clinical Interview for Pathological Gambling (SCI-PG).

The subgroup assessed the Movement Disorder Society's reviews and included the primary validation studies in the references section for each recommended instrument.

The subgroup noted the inconsistencies in definitions that exist in PD that are critical when evaluating scales (e.g., when assessing psychosis there is not a scale that includes sense of presence and types of hallucinations that need to be distinguished in PD).

Unmet needs in PD include defining apathy (i.e., lack of motivation or absence of initiative), defining sense of presence, and distinguishing between primary and secondary psychotic symptoms. There is a gap in the research in understanding the natural history of depressive illness in PD over time. The future of PD research in clinical assessment is relying less on phenomenology and is now including tools like biomarkers that will likely improve sensitivity and specificity of the instruments. Traditional assessments have been paper and pencil with Likert scales, but research is now including wearables that track mood and movement in different ways. The subgroup also noted that function and mental health recovery scales should be explored in the future.

### Summary of Recommendations

Subdomain	Instrument/Guidance Document Name	Classification
Psychiatric and Psychological Functions	15 - Item Geriatric Depression Scale (GDS-15)	Supplemental – Highly Recommended
	Apathy Motivation Index (AMI)	Supplemental
	Apathy Motivation Index Caregiver Version (AMI-CG)	Supplemental
	Apathy Scale (AS)	Supplemental – Highly Recommended
	Beck Depression Inventory II (BDI-II)	Supplemental
	Brief Dimensional Apathy Scale (b-DAS)	Supplemental
	Brief Psychiatric Rating Scale (BPRS)	Supplemental
	Columbia - Suicide Severity Rating Scale (C-SSRS)	Supplemental – Highly Recommended
	Columbia - Suicide Severity Rating Scale (C-SSRS) Screener Version	Supplemental – Highly Recommended
	Compulsive Eating Scale (CES)	Supplemental
	Cornell Scale for Depression in Dementia (CSDD)	Supplemental
	Diagnostic and Statistical Manual of Mental Disorders (DSM-5)	Supplemental
	Dimensional Apathy Scale (DAS)	Supplemental – Highly Recommended
	Dimensional Apathy Scale (DAS) Informant/Carer-Rated Version	Supplemental – Highly Recommended
	Enhanced Scale for the Assessment of Positive Symptoms in Parkinson's Disease (eSAPS-PD)	Supplemental – Highly Recommended
	Gambling Symptom Assessment Scale (G-SAS)	Supplemental
	Hamilton Anxiety Rating Scale (HAM-A)	Supplemental
	Hamilton Depression Rating Scale (HDRS)	Supplemental
	Hospital Anxiety and Depression Scale (HADS)	Supplemental
	Lille Apathy Rating Scale (LARS)	Supplemental – Highly Recommended
	McElroy Diagnostic Criteria for Compulsive Buying	Supplemental
	Montgomery-Asberg Depression Scale (MADRS)	Supplemental
	Neuropsychiatric Inventory (NPI)	Supplemental
	Pathological Gambling Adaptation of the Yale-Brown Obsessive Compulsive Scale (PG-YBOCS)	Supplemental
	Parkinson Anxiety Scale (PAS)	Supplemental – Highly Recommended

Subdomain	Instrument/Guidance Document Name	Classification
	Parkinson's Psychosis Questionnaire (PPQ)	Supplemental
	Parkinson's Psychosis Rating Scale (PPRS)	Supplemental
	Patient Health Questionnaire-2 (PHQ-2)	Supplemental
	Patient Health Questionnaire-9 (PHQ-9) Depression Scale	Supplemental
	Psychosis and Hallucinations Questionnaire (PsychH-Q)	Supplemental
	Questionnaire about Buying Behavior (QABB)	Supplemental
	Questionnaire for Impulsive-Compulsive Disorders in Parkinson's Disease (QUIP) (Long Form)	Supplemental – Highly Recommended
	Questionnaire for Impulsive-Compulsive Disorders in Parkinson's Disease (QUIP) (Short Form)	Supplemental – Highly Recommended
	Questionnaire for Impulsive-Compulsive Disorders Parkinson's Disease-Rating Scale (QUIP-RS)	Supplemental – Highly Recommended
	Scale for the Assessment of Positive Symptoms (SAPS)	Supplemental
	Scale for the Assessment of Positive Symptoms-Parkinson's Disease (SAPS-PD)	Supplemental – Highly Recommended
	Sexual Compulsivity Scale (SCS)	Supplemental
	South Oaks Gambling Screen (SOGS)	Supplemental
	Summary of Diagnostic Criteria and Assessments for Psychosis in Parkinson's Disease	Not applicable