

Supplementary Table 3: Cognitive Assessment, Neuroimaging, Retinal Imaging Measures

Author, year	Cognitive Test Battery	Cognitive Domains	Cut-off Scores for Cognitive Impairment	Global vs Domain-Specific Measures	Neuroimaging (MRI / PET / fMRI / CT)	Retinal Imaging (OCT, ERG, etc.)
Alzheimer's Disease and Mild Cognitive Impairment						
Ariello <i>et al.</i> , 2025	MMSE	Global cognition, memory	Amyloid SUVR cutoff 1.42; MMSE CI mean 25.2–26.2 vs CU 28.8	Global: MMSE; Domain: memory-focused	Amyloid PET ([11C]PiB) and 3T structural MRI	Spectral-domain OCT (Spectralis HRA+OCT-2); pRNFL, macular layers
Asanad <i>et al.</i> , 2021	Uniform Data Set-3; consensus clinical conference	Cognitively healthy	Not reported	Global classification: cognitively healthy	Not reported	Spectral-domain OCT (Cirrus SD-OCT); RNFL, RGC-IPL, macular thickness
Sen <i>et al.</i> , 2020	MMSE, GDS, CDR, CDR-SOB	Global cognition, dementia severity	MMSE median 17.5 (AD), controls 26–29; CDR median 1	Global cognition and dementia staging	Cortical atrophy on prior imaging	Spectral-domain OCT (Cirrus HD-OCT); RNFL, GCL, macular volume
Zhao <i>et al.</i> , 2021	MMSE, MoCA, ADAS-cog, SDS, SAS	Memory, thinking, behavior, visuospatial memory	AD: MMSE<24; NC: MMSE≥28; MCI: MoCA≤24; Dementia: MoCA≤22; ADAS-cog≥21; SAS/SDS: 36/40	Global: MMSE, MoCA; Domain: ADAS-cog, SAS, SDS	3T MRI hippocampal volumetry	STRATUS OCT 3000; macular RNFL, optic disc
Vidal <i>et al.</i> , 2022	MMSE, RAVLT	Global cognition, verbal episodic memory	Not explicitly reported	Global: MMSE; Domain: RAVLT	PET: [11C]PiB-PET, [18F]FDG-PET	Not reported
Trick <i>et al.</i> , 1989	Neuropsych exams; CDR	Global cognition, dementia severity	CDR 0.5–1.0	Global: CDR	CT scan	Ophthalmic exam; cup-to-disc, RNFL
Sartucci <i>et al.</i> , 2010	MMSE; DSM-IV, ICD-10, NINCDS-ADRDA	Memory, attention, visuospatial	AD: MMSE <23	Global via MMSE	MRI, FDG-PET	Not reported
Rizzo <i>et al.</i> , 1992	BDS, psychophysical tests	Memory, visuospatial behavior, contrast sensitivity, color vision	BDS Mild ≤10, Moderate 10.5–20, Severe ≥20.5	Global: BDS; Domain: visual psychophysics	CT/MRI to exclude lesions	Clinical: Goldmann perimetry, dilated ophthalmoscopy

Parisi <i>et al.</i> , 2001	MMSE, ADAS, IVSM	Mild to severe cognitive impairment; visual-spatial memory	Not reported; AD diagnosis via NINCDS-ADRDA, DSM-III-R	Global: MMSE, ADAS; Domain: IVSM	MRI (variable cortical atrophy)	OCT; RNFL
Mavilio <i>et al.</i> , 2020	MMSE	Global cognition: orientation, memory, concentration, language, design	≥28: normal; 24–27: mild; 10–23: moderate; ≤9: severe	Global via MMSE	Structural MRI for AD/VD	Spectral-domain OCT (RNFL, GCC); SAP visual field
Krasodomska <i>et al.</i> , 2010	MMSE, neurologic exams	Early-stage AD	MMSE>21	Global via MMSE	MRI	OCT (few patients; normal)
Prager <i>et al.</i> , 1993	MMSE	Attention (laser pointer)	Not explicitly reported	Global via MMSE	Not reported	Not reported
Kergoat <i>et al.</i> , 2002	MMSE, FAST, CDR	Global cognition, dementia severity	MMSE 11–29; cut-offs by clinician	Global	Neuroimaging part of initial diagnosis (unspecified)	Eye exams: Humphrey visual field, dilated fundus
Justino <i>et al.</i> , 2001	MMSE, NINCDS-ADRDA, DSM-IV, FAST, CDR	Global cognition, dementia severity	MMSE 22.05 ±1.02	Global	Clinical evaluations for diagnosis (unspecified MRI)	None reported
Devos <i>et al.</i> , 2005	McKeith 1999, PD Society Brain Bank	Dementia with visual hallucinations	None reported	Global dementia + visual hallucinations (binocular/fluctuating)	Postmortem neuropathology	Postmortem retinal light/electron microscopy
Li <i>et al.</i> , 2021	MMSE and MoCA	MMSE: general mental state; MoCA: visual–spatial, executive function, memory (focus on delayed recall)	Not explicitly listed; diagnosis based on DSM-IV; ATD mean scores: MMSE 24.90 ± 3.61, MoCA 21.10 ± 3.97	MMSE: global; MoCA: domain-sensitive for suspected dementia	MRI for intracranial atrophy	OCTA for vessel density & FAZ; EDI-OCT for choroidal thickness; flash ERG (RETEval system)
Ngoo <i>et al.</i> , 2019	MoCA	Mild–moderate cognitive impairment	AD: ≥16	Global: MoCA	CT scan (rule out vascular dementia)	Scanning laser polarimetry (GDx VCC)
Katz <i>et al.</i> , 1989	McKhann criteria	Probable/possible AD	Not reported	Global	Not reported	Ophthalmoscopy, slit-lamp
Moschos <i>et al.</i> , 2012	NINCDS-ADRDA, DSM-III	Memory, thinking, behavior	Mild severity per DSM	Not reported	Not reported	OCT (Stratus 3000); macular and RNFL; fluorescein angiography

Nesher & Trick, 1991	Not reported	SDAT (senile dementia of Alzheimer's type)	Not reported	Not reported	Not reported	Dilated fundus exams, fluorescein angiography for diabetics
Cronin-Golomb <i>et al.</i> , 1991	BDS	Visual function, dementia severity	Not reported	Global dementia severity; domain-specific visual performance	CT/MRI: no optic radiation damage	Funduscopy, Goldmann perimetry
Cabrera DeBuc <i>et al.</i> , 2018	MoCA	Memory, visuospatial, executive, language, attention, working memory	<26 indicates impairment	Global via MoCA; targets domains	Not reported	Confocal Scanning Laser Ophthalmoscopy (cSLO); fundus, vascular
Fun <i>et al.</i> , 2016	MMSE Malay	Memory complaints, preserved cognition	Controls MMSE ≥ 27	Not reported	Not reported	Not reported
Normal Aging						
Justino <i>et al.</i> , 2001	Validated neuropsychometric evaluation	Screened healthy	Not reported	Not reported	Not reported	Humphrey visual field, dilated fundus, biomicroscopy
Freund <i>et al.</i> , 2011	Not reported	Not reported	Not reported	Not reported	Not reported	Detailed funduscopy (7-fields montage via VISUCAM)

ADAS-cog: Alzheimer's Disease Assessment Scale–Cognitive Subscale, ATD: Alzheimer's Type Dementia, CDR: Clinical Dementia Rating, CDR-SOB: Clinical Dementia Rating–Sum of Boxes, CSF: Cerebrospinal Fluid, CT: Computed Tomography, EDI-OCT: Enhanced Depth Imaging OCT, ERG: Electroretinography, FAF: Fundus Autofluorescence, FM-100: Farnsworth-Munsell 100 Hue Test, fMRI: Functional Magnetic Resonance Imaging, GAF: Global Assessment of Functioning, GCL: Ganglion Cell Layer, HAM-A: Hamilton Anxiety Rating Scale, INL: Inner Nuclear Layer, IVSM: Immediate Visual-Spatial Memory, MMSE: Mini-Mental State Examination, MoCA: Montreal Cognitive Assessment, MINI: Mini-International Neuropsychiatric Interview, MRI: Magnetic Resonance Imaging, OCT: Optical Coherence Tomography, OCTA: Optical Coherence Tomography Angiography, OPL: Outer Plexiform Layer, pRNFL: peripapillary RNFL, PR: Photoreceptor Layer, PRS: Polygenic Risk Score, RAVLT: Rey Auditory Verbal Learning Test, RNFL: Retinal Nerve Fiber Layer, RPE: Retinal Pigment Epithelium, SAP: Standard Automated Perimetry, SAS: Self-Rating Anxiety Scale, STRATUS OCT: STRATUS Optical Coherence Tomography 3000, UBM: Ultrasound Biomicroscopy.