



COMPASS-ND

Cohort definition

CCNA
Canadian Consortium
on Neurodegeneration
in Aging



CCNV
Consortium canadien en
neurodégénérescence
associée au vieillissement

Diagnostic criteria

Subjective Cognitive Impairment (from Jessen et al., 2014)

| Core Diagnostic Criteria | Operationalized as |
|--|---|
| Self-experienced persistent decline in cognitive capacity in comparison with a previously normal status and unrelated to an acute event. | Answer “yes” to both of the following questions: “Do you feel like your memory or thinking is becoming worse?” and “Does this concern you?” |
| Normal age-, sex-, and education-adjusted performance on standardized cognitive tests, which are used to classify mild cognitive impairment (MCI) or prodromal AD. | Global CDR=0; Logical Memory 2 above ADNI education-adjusted cutoffs*; CERAD word list recall score >5; MoCA total score \geq 25. |

SCI Exclusion criteria (taken from CIMA-Q)

- Surgery within the last 2 months
- History of intercranial surgery
- Systemic illness with a potential impact on cognition
- Regular use of benzodiazepines
- Comorbid condition that is likely to result in death within 3 years
- Age < 60

*: <9 for 16+ years of education.; <5 for 8-15 years of education; <3 for 0-7 years of education.



Diagnostic criteria



MCI due to AD (from Albert et al. 2011)

| Core diagnostic criteria | Operationalized as |
|---|---|
| Concern regarding a change in cognition | Report from patient and/or informant of such |
| Impairment in one or more cognitive domains | 1 or more of the following: <ul style="list-style-type: none">- Logical memory below ADNI cutoffs*- CERAD word list recall <6.- MoCA score 13-24 inclusive- Global CDR>0 |
| Preservation of independence in functional abilities | Score > 14/23 on the Lawton-Brody IADL scale |
| Not demented | Global CDR \leq 0.5 |
| Absence of “diffuse, subcortical cerebrovascular disease” | 1. No more than 1 silent brain infarct in supratentorial locations (i.e., excluding cerebellum or brainstem), OR 2. Extensive white matter disease is NOT present, defined as Age-Related White Matter Change (ARWMC) scale score no greater than 1 (indicating “focal lesion”) in any brain region. |
| Age 60 or above | Age 60 or above |

*: <9 for 16+ years of education.; <5 for 8-15 years of education; <3 for 0-7 years of education.



Diagnostic criteria

Subcortical Ischemic Vascular Mild Cognitive Impairment from Gorelick et al., 2011 and Sachdev et al, 2014

| Core Diagnostic Criteria | Operationalized as |
|--|--|
| Presence of mild cognitive impairment | Meets Diagnostic Criteria of Appendix B of protocol |
| Absence of prior symptomatic stroke (silent brain infarcts are allowed). | No reported history of symptomatic stroke |
| Presence of “diffuse, subcortical cerebrovascular disease” | <ol style="list-style-type: none">1. Presence of 2 or more silent brain infarcts in supratentorial locations (i.e., excluding cerebellum or brainstem), OR2. Extensive white matter disease, defined as Age-Related White Matter Change (ARWMC) scale score of 2 or higher (indicating “beginning confluence of lesions” or greater) in any brain region. (See image below) |
| Age 60 or above | Age 60 or above |



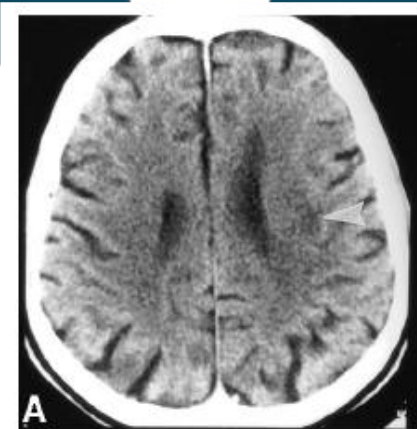
Category Inclusion/Exclusion criteria

Subcortical Ischemic Vascular MCI White Matter Disease Criteria

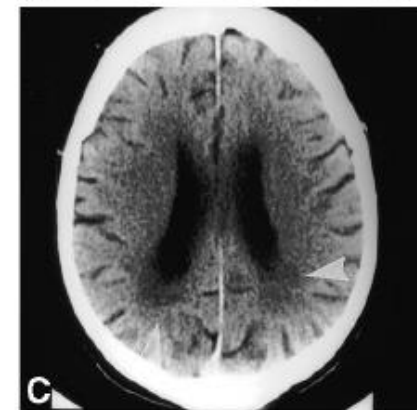
| ARWMC Rating Scale (Wahlund LO, et al. 2001) | |
|--|---|
| Grade | Description |
| 0 | No lesions |
| 1 | Focal lesions |
| 2 | Beginning confluence of lesions |
| 3 | Diffuse involvement of the entire region, with or without involvement of U fibers |

Grade the MRI or CT slice with the most severe signal abnormalities. Patients with score ≥ 2 meet eligibility criteria for the Vascular MCI cohort.

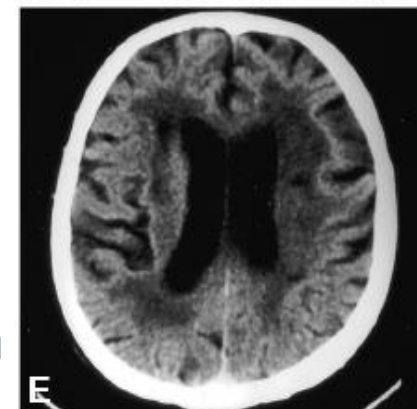
Grade 1



Grade 2



Grade 3



Diagnostic criteria

Alzheimer's Dementia (from McKhann et al.,2011)

| Core diagnostic criteria | Operationalized as |
|--|---|
| Gradual progressive change in memory and/or other cognitive function over more than 6 months. | Report from patient and/or informant of such |
| Objective evidence of significant decline in at least 2 of the following cognitive /behavioural domains: <ul style="list-style-type: none"> - Episodic memory - Reasoning, problem solving - Visuospatial abilities - Language - Personality/behavior | 2 or more of the following: <ul style="list-style-type: none"> - Logical memory below ADNI cutoffs* - CERAD word list recall <6. - MoCA score 13-24 inclusive (with at least one point lost in a non-memory task). - Positive response to the question: Has the participant had any changes in personality or behaviour Yes/No |
| Impairment of functional abilities | Positive response to the question: The cognitive deficits interfere with independence in everyday activities such as paying bills or managing medications Yes/No |
| Age 60 or above | Age 60 or above |
| Non-AD causes of dementia ruled out | No report or sign of any of the following: sudden onset, focal neurological features, early extrapyramidal signs, metabolic abnormalities, cerebrovascular disease, or MRI T2 or FLAIR signal abnormalities, or evidence for another concurrent, active neurological disease, or a non-neurological medical comorbidity or use of medication that could have a substantial effect on cognition. |

*: <8 for 16+ years of education.; <4 for 8-15 years of education; <2 for 0-7 years of education.



Diagnostic criteria

Dementia of Mixed Etiology (from McKhann et al.,2011)

| Core diagnostic criteria | Operationalized as |
|--|---|
| Gradual progressive change in memory and/or other cognitive function over more than 6 months. | Report from patient and/or informant of such |
| Objective evidence of significant decline in at least 2 of the following cognitive /behavioural domains: <ul style="list-style-type: none"> - Episodic memory - Reasoning, problem solving - Visuospatial abilities - Language - Personality/behavior | 2 or more of the following: <ul style="list-style-type: none"> - Logical memory below ADNI cutoffs* - CERAD word list recall <6. - MoCA score 13-24 inclusive (with at least one point lost in a non-memory task). - Positive response to the question: Has the participant had any changes in personality or behaviour Yes/No |
| Impairment of functional abilities | Positive response to the question: The cognitive deficits interfere with independence in everyday activities such as paying bills or managing medications Yes/No |
| Age 60 or above | Age 60 or above |
| Non-AD causes of dementia may be present | Report or sign of any of one or more of the following: sudden onset, focal neurological features, early extrapyramidal signs, metabolic abnormalities, cerebrovascular disease, or MRI T2 or FLAIR signal abnormalities, or evidence for another concurrent, active neurological disease, or a non-neurological medical comorbidity or use of medication that could have a substantial effect on cognition. |



Lewy Body Dementia (from McKeith et al., 2005)

| Core diagnostic criteria (from McKeith et al., 2005) | Operationalized as |
|--|--|
| Dementia defined as progressive cognitive decline of sufficient magnitude to interfere with normal social or occupational function. | Report from patient and/or informant of such over the course of at least one year |
| Prominent or persistent memory impairment may not necessarily occur in the early stages but is usually evident with progression. Deficits on tests of attention, executive function, and visuospatial ability may be especially prominent. | MoCA score 13-24 inclusive on testing within the last year. |
| Has two or more of the following core features by themselves, or one or more if at least one suggestive feature (criteria below) is present: <ul style="list-style-type: none"> - Fluctuating cognition with pronounced variations in attention and alertness. - Recurrent visual hallucinations that are typically well formed and detailed. - Spontaneous features of parkinsonism. | Positive responses to 2 or more of the following check box items: <ul style="list-style-type: none"> - Does the participant have fluctuating cognition with pronounced variations in attention and alertness? Yes/No - Does participant have recurrent visual hallucinations? Yes/No - Does the participant have spontaneous features of parkinsonism? Yes/No |
| Has one or both of the following suggestive features: <ul style="list-style-type: none"> - REM sleep behavior disorder. - Severe neuroleptic sensitivity. | Positive responses to 1 or more of the following check box items: <ul style="list-style-type: none"> - Does the participant move in their sleep or act out their dreams? Yes/No - Does the participant have severe neuroleptic sensitivity? Yes/No/Unknown |



Parkinson's Disease Dementia (from Emre et al., 2007; Dubois et al., 2007 & Postuma et al., 2015)

| Core diagnostic criteria | Operationalized as |
|--|---|
| <p>Both must be present:</p> <p>Meets the Movement Disorder Society clinical diagnostic criteria for Parkinson's disease.</p> <p>Has a dementia syndrome based on MDS Task Force proposed criteria: insidious onset and slow progression, developing within the context of established Parkinson's disease and diagnosed by history, clinical, and mental examination, and defined as:</p> <ul style="list-style-type: none"> - Impairment in more than one cognitive domain. - Representing a decline from premorbid level. - Deficits severe enough to impair daily life (social, occupational, or personal care), independent of the impairment ascribable to motor or autonomic symptoms. | <p>"Yes" response to 8 items of the diagnostic rating sheet for probable PD-D recommended by the MDS task force:</p> <ol style="list-style-type: none"> 1. Dx of Parkinson's disease? 2. Parkinson's disease developed before dementia? 3. MoCA \leq20? 4. Dementia has Impact on ADLs? 5. Impaired cognition? (For Yes, at least 2 of 4 tests below are abnormal) <ul style="list-style-type: none"> Mark which Tests are abnormal (taken from MoCA): Sevens backwards; Lexical fluency or clock drawing; Figure Copy; less than 3 words recalled on 5 word recall. 6. Absence of Major Depression? 7. Absence of delirium? 8. Absence of other abnormalities that obscure diagnosis? |



Mild Cognitive Impairment in Parkinson's Disease (from Litvan et al., 2012)

| Core Diagnostic Criteria | Operationalized as |
|--|--|
| Diagnosis of Parkinson's disease as based on the UK PD Brain Bank Criteria | "Yes" response to check box item on diagnosis of Parkinson's Disease |
| Gradual decline, in the context of established PD, in cognitive ability reported by either the patient or informant, or observed by the clinician | Report from patient and/or informant of such |
| Cognitive deficits on either formal neuropsychological testing or a scale of global cognitive abilities | MoCA 13-24 inclusive |
| Cognitive deficits are not sufficient to interfere significantly with functional independence, although subtle difficulties on complex functional tasks may be present | Negative response to the question: The cognitive deficits interfere with independence in everyday activities such as paying bills or managing medications Yes/No |



Parkinson's Disease without Cognitive Impairment (from Postuma et al., 2015)

| Core Diagnostic Criteria | Operationalized as |
|--|--|
| Diagnosis of Parkinson's disease as based on the Movement Disorder Society clinical diagnostic criteria for Parkinson's disease | "Yes" response to check box item on diagnosis of Parkinson's Disease |
| No decline, in the context of established PD, in cognitive ability reported by either the patient or informant, or observed by the clinician | Report from patient and/or informant of such |
| No Cognitive deficits on either formal neuropsychological testing or a scale of global cognitive abilities | MoCA >24 |



Behavioural Variant Frontotemporal Dementia (bvFTD) (from Rascovsky et al., 2011)

| Core diagnostic criteria | Operationalized as |
|---|---|
| At least 3 of 6 diagnostic features: <ul style="list-style-type: none">- Disinhibition- Apathy / Inertia- Loss of sympathy / empathy- Perseverative / compulsive- Hyperorality- Neuropsychological profile | - Positive responses on gateway question and 3 items of the NACC FTLD module bvFTD features checklist OR Positive responses on gateway question and 2 items of the NACC FTLD module bvFTD features checklist and evidence of executive dysfunction on cognitive screen (MoCA and/or previous screen). |
| Functional disability | Positive answer to impaired functioning on the NACC FTLD module bvFTD features checklist. |
| Neuroimaging consistent with bvFTD (if available). | Frontal lobe atrophy on MRI or reduced frontal lobe metabolism on FDG or reduced frontal perfusion on SPECT |

