

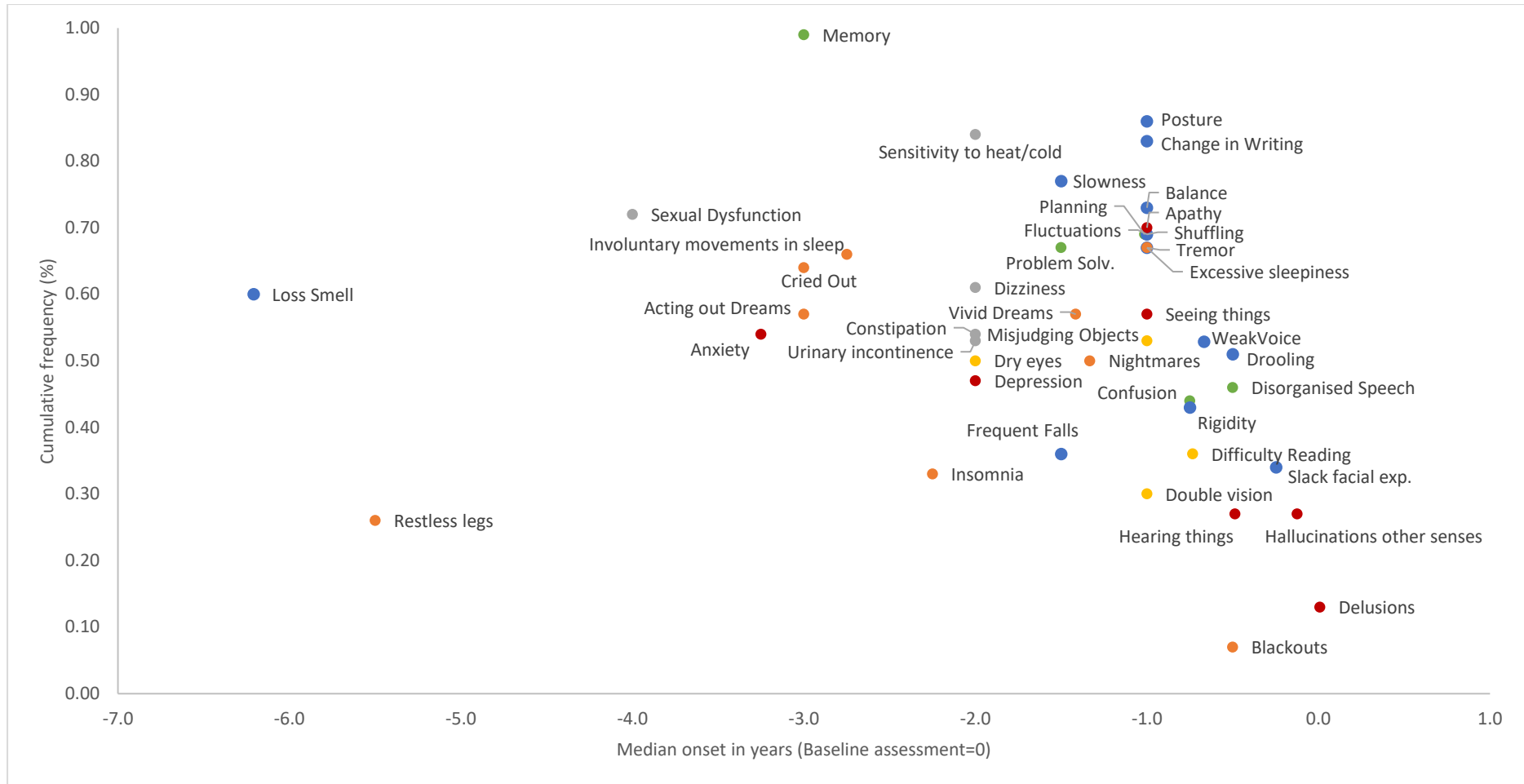
Supplementary Table 1. The Symptom Questionnaire

<p>Cognitive Symptoms Memory Problem Solving Planning Fluctuating changes in concentration and attention Disorganised speech and conversation Unexplained episodes of confusion</p> <p>Parkinson's Symptoms Rigidity or stiffness in muscles Shuffling walk Tremor Slowness of movement Change in Handwriting Slack facial expression Drooling Loss/reduction of sense of smell Balance problems Frequent falls Change in posture Weak voice</p> <p>Behaviour/mood changes Seeing things that are not present Hearing things that are not present Depression Apathy (loss of interest and drive) Delusions (false beliefs) Hallucinations in other senses (e.g. touch or smell) Anxiety</p>	<p>Sleep Symptoms Troubled by vivid dreams Troubled by nightmares Had involuntary movements of arms and legs Acting out dreams, sometimes violently Cried out during sleep Excessive daytime sleepiness Transient loss of consciousness/unexplained blackouts Insomnia Restless legs syndrome</p> <p>Autonomic Dysfunction Dizziness, light-headedness or fainting Sensitivity to heat or cold Sexual Dysfunction Urinary incontinence Constipation</p> <p>Visual Symptoms Painful/dry eyes Double vision Difficulty reading (because words and letters move around the page) Misjudging objects (have difficulty moving around because you misjudge where objects are)</p>
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Supplementary Table 2. Time of onset of symptoms in MCI-AD and MCI-LB

	Onset (median (IQR)) relative to initial assessment		
	MCI-AD	MCI-LB	p
<i>Cognitive symptoms</i>			
Memory	-2.0 (-3.5, -2.0)	-3.0 (-5.0, -2.0)	0.16
Problem Solving	-1.0 (-2.8, -0.7)	-1.5 (-2.8, 0.0)	0.67
Planning	-1.5 (-4.2, 0.1)	-1.0 (-2.0, -0.2)	0.43
Fluctuations	-1.5 (-4.0, 0.3)	-1.0 (-2.0, -0.1)	0.48
Disorganised Speech	-1.5 (-3.7, -0.3)	-0.5 (-2.0, 0.5)	0.16
Confusion	0.8 (-1.3, 1.6)	-0.8 (-1.7, 0.8)	0.36
<i>Symptoms associated with Parkinson's disease</i>			
Rigidity	0.0 (-2.8, 0.2)	-0.8 (-2.8, 0.3)	0.61
Shuffling	-1.5 (-3.1, 0.4)	-1.0 (-2.0, -0.1)	0.49
Tremor	-1.5 (-6.5, -0.5)	-1.0 (-3.0, -0.1)	0.18
Slowness	-2.0 (-4.8, -0.4)	-1.5 (-3.0, -0.5)	0.78
Change in Writing	-2.9 (-6.0, -1.0)	-1.0 (-2.9, -0.5)	<.01
Slack facial exp.	0.4 (-2.0, 0.9)	-0.2 (-1.4, 0.5)	0.93
Drooling	-0.1 (-0.9, 0.6)	-0.5 (-2.0, -0.2)	0.07
Loss of smell	-2.0 (-21.3, -1.0)	-6.2 (-17.1, -1.4)	0.53
Balance problems	-1.5 (-4.5, -0.2)	-1.0 (-2.5, -0.9)	0.59
Frequent Falls	0.4 (-1.3, 0.6)	-1.5 (-2.5, -0.3)	0.13
Change in posture	-1.0 (-5.0, 0.0)	-1.0 (-3.0, -0.5)	0.61
Weak Voice	-1.8 (-3.0, -0.0)	-0.7 (-2.0, 0.1)	0.33
<i>Neuropsychiatric symptoms</i>			
Seeing things	-0.6 (-1.4, 0.6)	-1.0 (-2.4, -0.1)	0.44
Hearing things	n/a	-0.5 (-2.0, 0.7)	0.84
Depression	-2.5 (-42.5, 0.6)	-2.0 (-5.0, 0.5)	0.47
Apathy	-1.0 (-2.0, 0.1)	-1.0 (-2.0, 0.4)	0.93
Delusions	n/a	0.0 (-2.9, 0.7)	0.40
Hallucinations other senses	-0.4 (-1.2, 0.3)	-0.1 (-1.0, 0.9)	0.72
Anxiety	-2.0 (-20.5, 0.1)	-3.3 (-40.0, 0.1)	0.49
<i>Sleep symptoms</i>			
Vivid Dreams	-1.0 (-4.8, 0.0)	-1.4 (-6.0, -0.3)	0.68
Nightmares	n/a	-1.3 (-10.0, 0.1)	0.54
Involuntary movements in sleep	-3.9 (-6.5, 0.6)	-2.8 (-10.0, -1.0)	0.38
Acting out Dreams	n/a	-3.0 (-10.0, -1.0)	0.12
Cried Out	-1.0 (-4.4, 0.3)	-3.0 (-15.0, -0.7)	0.06
Excessive sleepiness	-1.5 (-3.9, -0.1)	-1.0 (-3.0, 0.0)	0.60
Blackouts	-3.0 (-9.3, 0.3)	n/a	0.22
Insomnia	-1.3 (-23.8, -0.1)	-2.3 (-7.0, -0.1)	0.91
Restless legs	-1.5 (-46.3, 1.2)	-5.5 (-15.0, -1.5)	0.86
<i>Autonomic symptoms</i>			
Dizziness	-2.0 (-7.0, -0.9)	-2.0 (-3.3, -0.3)	0.64

Sensitivity to heat/cold	-3.0 (-20.0, -0.5)	-2.0 (-10.0, -1.0)	1.00
Sexual Dysfunction	-2.4 (-9.3, -1.1)	-4.0 (-10.0, -1.9)	0.68
Urinary incontinence	-2.0 (-7.5, 0.0)	-2.0 (-3.0, -0.1)	0.59
Constipation	-6.5 (-60.5, -1.6)	-2.0 (-12.5, -0.2)	0.09
<i>Visual symptoms</i>			
Dry eyes	-3.0 (-4.3, -1.6)	-2.0 (-5.0, -0.3)	0.66
Double vision	-0.3 (-10.6, 2.3)	-1.0 (-3.0, -0.3)	0.37
Difficulty Reading	-2.0 (-25.5, 0.2)	-0.7 (-1.9, 1.6)	0.17
Misjudging Objects	-1.0 (-7.5, 3.1)	-1.0 (-2.0, 0.4)	0.86
Time of onset relative to baseline assessment in years. Time of onset not stated if present in less than 10% of participants. P=uncorrected p value. MCI mild cognitive impairment; AD Alzheimer's disease; LB Lewy bodies.			

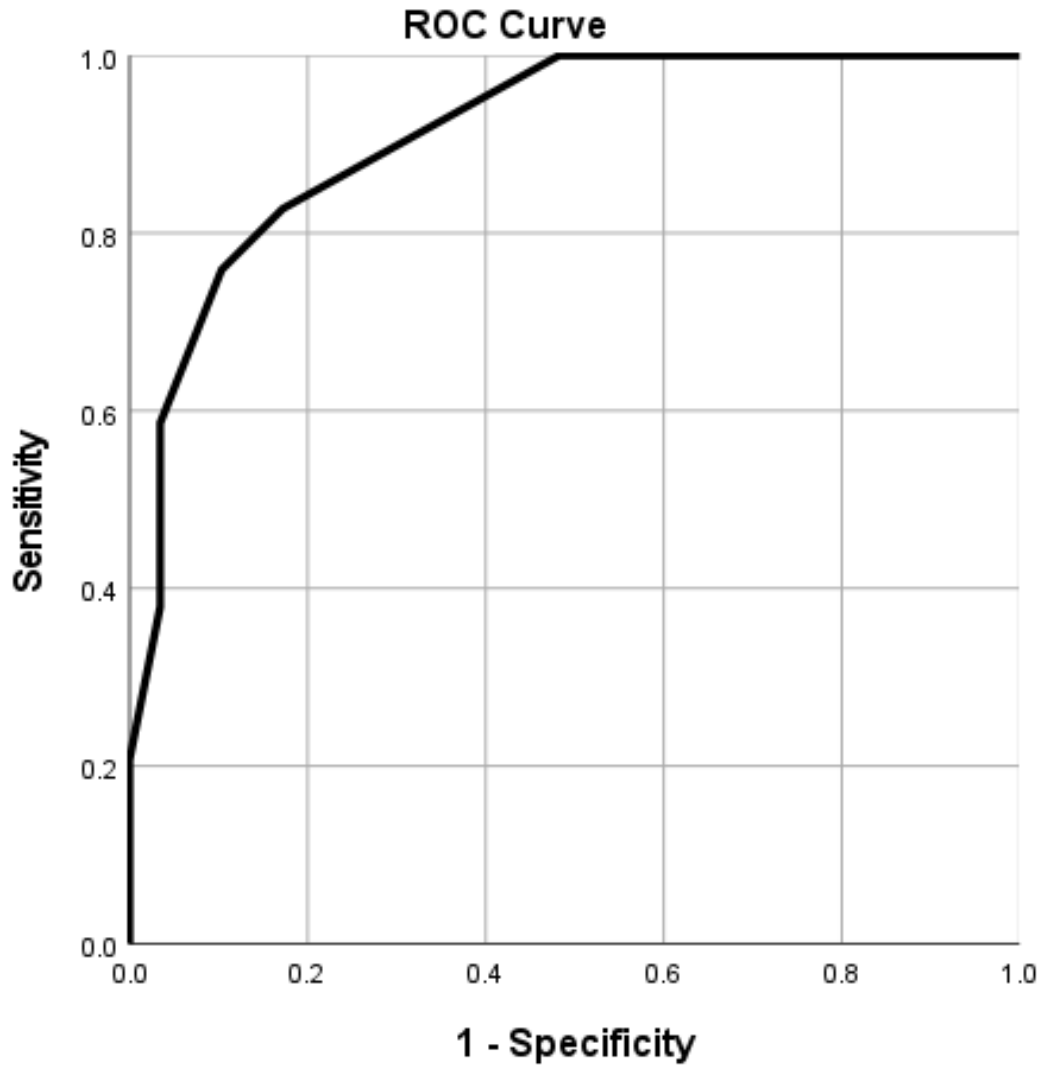


Supplementary Figure 1. Scatterplot of median symptom onset and cumulative prevalence in MCI-LB. Green – cognitive symptoms; blue – symptoms associated with Parkinson’s disease; red – neuropsychiatric symptoms; orange – sleep symptoms; grey – autonomic symptoms; yellow – visual symptoms.

Supplementary Table 3: Baseline demographics and symptoms prevalence in the SUPeRB cohort

	Control	MCI-AD	MCI-LB	p (MCI-AD v MCI-LB)
N	33	29	29	
Age	74.3 (7.5)	74.9 (7.1)	74.2 (6.0)	0.92
Sex, n (% male)	24 (73)	11 (38)	27 (83)	<0.001
ACE-R, mean (SD)	92.7 (4.3)	82.2 (8.2)	81.8 (10.0)	0.98
Informant present, n (%)	-	24 (83)	28 (97)	0.19
Live with informant, n (%)	-	16 (67)	26 (93)	0.03
AChI, n (%)	0 (0)	6 (21)	19 (66)	0.001
Levodopa, n (%)	0 (0)	0 (0)	2 (7)	0.49
<i>Cognitive Symptoms</i>				
Memory, n (%)	7 (21)	29 (100)	29 (100)	-
Problem Solving, n (%)	1 (3)	7 (24)	13 (45)	0.10
Planning, n (%)	0 (0)	4 (14)	12 (41)	0.02
Fluctuations, n (%)	4 (12)	3 (10)	16 (57)	<0.001
Disorganized Speech, n (%)	0 (0)	1 (4)	9 (31)	0.01
Episodes of Confusion, n (%)	1 (3)	1 (3)	4 (15)	0.19
<i>Symptoms associated with Parkinson's disease</i>				
Rigidity or stiffness, n (%)	3 (9)	2 (7)	6 (21)	0.25
Shuffling walk, n (%)	1 (3)	2 (7)	13 (45)	0.001
Tremor, n (%)	5 (15)	7 (24)	13 (45)	0.10
Slowness of movement, n (%)	3 (9)	9 (31)	17 (59)	0.04
Change in writing, n (%)	5 (15)	12 (41)	19 (66)	0.07
Slack facial expression, n (%)	0 (0)	1 (4)	5 (17)	0.19
Drooling, n (%)	2 (6)	4 (14)	11 (38)	0.04
Loss of smell, n (%)	5 (15)	8 (28)	15 (52)	0.06
Balance problems, n (%)	5 (15)	9 (31)	16 (59)	0.03
Frequent falls, n (%)	0 (0)	2 (7)	4 (14)	0.67
Change in posture, n (%)	6 (18)	9 (31)	23 (79)	<0.001
Weak voice, n (%)	2 (6)	6 (21)	12 (41)	0.09
<i>Neuropsychiatric symptoms</i>				
Seeing things, n (%)	0 (0)	2 (7)	7 (24)	0.14
Hearing things, n (%)	0 (0)	0 (0)	4 (14)	0.11
Depression, n (%)	0 (0)	3 (10)	9 (31)	0.05
Apathy, n (%)	0 (0)	6 (21)	10 (35)	0.24
Delusions, n (%)	0 (0)	0 (0)	1 (4)	1
Other Hallucinations, n (%)	2 (6)	1 (3)	5 (17)	0.19
Anxiety, n (%)	2 (6)	8 (28)	12 (43)	0.23
<i>Sleep symptoms</i>				
Vivid dreams, n (%)	0 (0)	2 (7)	15 (52)	<0.001
Nightmares, n (%)	0 (0)	1 (3)	11 (38)	0.001
Involuntary movements, n (%)	1 (3)	1 (3)	20 (69)	<0.001
Acting out, n (%)	0 (0)	1 (3)	16 (55)	<0.001
Crying out, n (%)	1 (3)	2 (7)	16 (55)	<0.001
Excessive sleepiness, n (%)	1 (3)	5 (18)	12 (41)	0.05
Blackouts, n (%)	0 (0)	2 (7)	0 (0)	0.49
Insomnia, n (%)	1 (3)	7 (24)	3 (10)	0.16

Restless legs, n (%)	3 (9)	1 (3)	5 (18)	0.10
<i>Autonomic symptoms</i>				
Dizziness, n (%)	4 (12)	5 (17)	14 (48)	0.01
Sensitivity to heat or cold, n (%)	11 (33)	7 (25)	21 (72)	<0.001
Sexual dysfunction, n (%)	6 (23)	4 (22)	14 (56)	0.03
Urinary incontinence, n (%)	3 (9)	7 (25)	14 (48)	0.07
Constipation, n (%)	5 (15)	6 (21)	8 (28)	0.54
<i>Visual Symptoms</i>				
Dry/painful eyes, n (%)	10 (30)	7 (24)	9 (32)	0.50
Double vision, n (%)	1 (3)	2 (7)	4 (14)	0.42
Difficulty reading, n (%)	1 (3)	4 (14)	8 (29)	0.19
Misjudging objects, n (%)	3 (9)	3 (10)	10 (37)	0.02
Sexual dysfunction n=69, for all other variables n=89-91 (occasionally participants felt unable to answer). Bold: significant p<.05 (uncorrected). MCI mild cognitive impairment; AD Alzheimer's disease; LB Lewy bodies.				



Supplementary Figure 2. Receiver Operating Characteristic for the 10-point symptom scale to differentiate MCI-LB from MCI-AD. Area under ROC 0.91 (95% CI 0.84-0.98).