

## Supplementary Online Content

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This supplementary material has been provided by the authors to give readers additional information about their work.

**eTable 1. MoPaRDS and Weighted MoPaRDS items and scoring**

<b>Predictors</b>	<b>MoPaRDS</b>	<b>Weighted MoPaRDS</b>
Male sex	1	1
Bilateral disease onset	1	2
Falls or freezing	1	4
Age greater than 70 years	1	5
Orthostatic BP drop > 10 mmHg	1	5
REM Sleep Behavior Disorder (RBD)	1	5
Positive MCI status	1	5
Hallucinations	1	6
<b>Maximum score</b>	<b>8</b>	<b>33</b>

**eTable 2. Predictive variables assessed across all cohorts**

<b>Predictors</b>	<b>OR [95% CI]</b>	<b>p-value</b>
Male Sex	1.89 [1.08,3.32]	0.026
Bilateral Disease Onset	4.06 [2.36,6.98]	<0.001
Falls or Freezing	5.37 [3.18,9.07]	<0.001
Age greater than 70 years	6.51 [3.79,11.19]	<0.001
Orthostatic BP >10mmHg	6.28 [3.54,11.15]	<0.001
RBD	9.32 [5.17,16.81]	<0.001
Positive MCI Status	7.57 [4.21,13.62]	<0.001
Hallucinations	6.84 [3.68,12.72]	<0.001

**eTable 3. Risk stratification in MCI vs. non-MCI patients**

Risk Group, by MoPaRDS Score	All Cohorts (Non-MCI only), n=377		All Cohorts (MCI only), n=147		All Cohorts, n=607	
	With/Without Dementia No. (%) With Dementia	Annual Risk %	With/Without Dementia No. (%) With Dementia	Annual Risk %	With/Without Dementia No. (%) With Dementia	Annual Risk %
Low risk (0-3)	9/345 (2.5%)	0.6%	2/79 (2.5%)	0.6%	12/453 (2.6%)	0.6%
Intermediate risk (4-5)	5/13 (22.2%)	5.0%	18/23 (44.0%)	10.0%	25/74 (27.1%)	5.8%
High risk (6-8)	2/1 (66.6%)	16.7%	20/5 (80%)	18.2%	28/15 (65.1%)	14.9%

**eTable 4. Diagnostic Evaluation of MoPaRDS and weighting with cross-validation, by cutoff**

	MoPaRDS			Weighted MoPaRDS	
	All Cohorts	Training Set	Testing Set	Training Set	Testing Set
ROC AUC	0.877 [0.829,0.924]	0.875 [0.801,0.949]	0.879 [0.816,0.942]	0.889 [0.823,0.955]	0.885 [0.826,0.943]
<b>Cutoff≥3</b>				<b>Cutoff≥13</b>	
Sensitivity, %	87.1 [77.0,94.0]	87.1 [70.2,96.4]	87.2 [72.6,95.7]	87.1 [70.2,96.4]	82.1 [66.5,92.5]
Specificity, %	68.2 [64.1,72.1]	66.4 [60.4,72.1]	70.0 [64.2,75.3]	82.6 [77.5,87.0]	83.9 [79.0, 88.0]
PPV, %	26.3 [23.4,29.4]	23.3 [19.6,27.4]	29.3 [25.0,34.0]	37.0 [30.4,44.1]	42.1 [34.8,49.7]
NPV, %	97.6 [95.7,98.7]	97.8 [94.6,99.1]	97.4 [94.4,98.9]	98.2 [95.6,99.3]	97.0 [94.4,98.5]
+LR	2.74 [2.35,3.20]	2.6 [2.09,3.22]	2.90 [2.34,3.61]	5.02 [3.73,6.74]	5.09 [3.74,6.93]
-LR	0.19 [0.10,0.35]	0.19 [0.08,0.49]	0.18 [0.08,0.42]	0.16 [0.06,0.39]	0.21 [0.11,0.42]
<b>Cutoff≥4</b>				<b>Cutoff≥14</b>	
Sensitivity, %	77.1 [65.6,86.3]	83.9 [66.3,94.6]	71.8 [55.1,85.0]	83.9 [66.3,95.4]	79.5 [63.5,90.7]
Specificity, %	87.2 [84.0,89.9]	86.4 [81.7,90.3]	87.9 [83.4,91.5]	85.7 [80.9,89.6]	86.1 [81.4,90.0]
PPV, %	43.9 [37.8,50.2]	41.9 [33.9,50.4]	45.9 [36.9,55.3]	40.6 [32.9,48.8]	44.9 [36.8,53.3]
NPV, %	96.7 [95.0,97.8]	97.9 [95.4,99.0]	95.6 [93.0,97.3]	97.8 [95.3,99.0]	96.7 [94.1,98.2]
+LR	5.94 [4.08,8.65]	6.17 [4.39,8.68]	5.94 [4.08,8.65]	5.85 [4.20, 8.15]	5.71 [4.08,7.99]
-LR	0.26 [0.17,0.40]	0.19 [0.08,0.42]	0.32 [0.19,0.53]	0.19 [0.08,0.42]	0.24 [0.13,0.44]

**eTable 5. Diagnostic Evaluation of MoPaRDS, by sex**

	Male, n=376			Female, n=231		
<b>AUC</b>	<b>0.916 [0.873,0.960]</b>			<b>0.805 [0.707, 0.903]</b>		
<b>Cutoff<sup>a</sup></b>	<b>≥2</b>	<b>≥3</b>	<b>≥4</b>	<b>≥2</b>	<b>≥3</b>	<b>≥4</b>
Sensitivity	96.1 [86.8,99.5]	90.4 [79.0,96.8]	71.2 [56.9,82.9]	83.3 [58.6,96.4]	61.1 [35.8,82.7]	38.9 [17.3,64.3]
Specificity	60.0 [53.4,64.3]	83.6 [79.2,87.5]	92.9 [89.5,95.5]	62.9 [56.1,69.4]	82.2 [76.4,87.1]	92.5 [88.1,95.7]
PPV	27.3 [24.6,30.2]	47.0 [40.6,53.53]	61.7 [51.1,71.21]	16.0 [12.7,19.93]	22.5 [15.4,31.6]	30.4 [17.2,48.0]
NPV	99.0 [96.1,99.7]	98.2 [95.9,99.2]	95.3 [92.9,96.8]	97.8 [94.1,99.2]	96.2 [93.3,97.8]	94.7 [92.5,96.3]
LR+	2.34 [2.02,2.70]	5.53 [4.25,7.18]	10.02 [6.52,15.41]	2.25 [1.71,2.95]	3.43 [2.15,5.47]	5.18 [2.45,10.92]
LR-	0.07 [0.02,0.25]	0.11 [0.05,0.26]	0.31 [0.20,0.48]	0.26 [0.09,0.75]	0.47 [0.26,0.85]	0.66 [0.46,0.96]

a. On a MoPaRDS scale of 7 – Male Sex excluded