Supplementary Material

Can T1-Weighted Magnetic Resonance Imaging Significantly Improve Mini-Mental State Examination-Based Distinguishing Between Mild Cognitive Impairment and Early-Stage Alzheimer's Disease?

Supplementary Table 1. Average values of coefficients and their 95% CI of the multinomial logistic regression model (5-fold cross-validation).

Factor	(Intercept)	Relative brain volume	Age	MMSE
AD	85.05 [80.24; 89.86]	-0.3010 [-0.3653; -0.2368]	-0.1560 [-0.1760; -0.1360]	-2.0980 [-2.176; -2.019]
MCI	46.32 [43.55; 49.09]	-0.1774 [-0.2156; -0.1387]	-0.1023 [-0.1096; -0.0949]	-0.9755 [-1.0253; -0.9256]

Supplementary Table 2. The adjusted odds ratio and its 95% CI for the averaged multinomial logistic regression models (5-fold cross-validation).

Adjusted odds ratio (95% CI)	Relative brain volume	Age	MMSE
AD versus NC	0.74 [0.69; 0.79]	0.86 [0.84; 0.87]	0.12 [0.11; 0.13]
MCI versus NC	0.84 [0.81; 0.87]	0.90 [0.90; 0.91]	0.38 [0.36; 0.40]
AD versus MCI	0.88 [0.86; 0.91]	0.95 [0.94; 0.96]	0.33 [0.32; 0.33]

Supplementary Table 3. Coefficients and standard errors of multinomial logistic regression model for complete ADNI dataset.

Coefficients	(Intercept)	Relative brain volume	Age	MMSE
AD ± SE	84.66 ± 1.515	-0.3003 ± 0.03962	-0.1547 ± 0.02376	-2.0875 ± 0.11191
MCI ± SE	46.17 ± 2.646	-0.1764 ± 0.02924	-0.1019 ± 0.01883	-0.9726 ± 0.07768

Supplementary Table 4. Adjusted odds ratios for predictors of multinomial logistic regression model for complete ADNI dataset.

Adjusted odds ratio (95% CI)	Relative brain volume	Age	MMSE
AD versus NC	0.74 [0.69; 0.80]	0.86 [0.82; 0.90]	0.12 [0.10; 0.15]
MCI versus NC	0.84 [0.79; 0.89]	0.90 [0.87; 0.94]	0.38 [0.32; 0.44]
AD versus MCI	0.88 [0.87; 0.90]	0.95 [0.94; 0.96]	0.33 [0.31; 0.35]

Supplementary Table 5. Quality performance indices for prediction obtained in the EDSD dataset and two subsets: 1.5T and 3T.

Performance Index	EDSD all			EDSD – 1.5T			EDSD – 3T		
	Class			Class			Class		
	NC	AD	MCI	NC	AD	MCI	NC	AD	MCI
Sensitivity [%]	73.20	69.85	63.82	70.00	64.71	75.00	74.31	72.94	62.12
Specificity [%]	88.19	90.17	75.76	98.59	88.57	71.29	84.79	90.58	77.73
Positive Predictive Value [%]	80.68	73.64	54.80	97.22	80.49	34.09	76.43	70.45	61.65
Negative Predictive Value [%]	83.01	88.39	81.97	82.35	77.50	93.51	83.26	91.58	78.07
Prevalence [%]	40.25	28.22	31.54	41.32	42.15	16.53	39.89	23.55	36.57
Balanced Accuracy [%]	80.70	80.01	69.79	84.30	76.64	73.14	79.55	81.76	69.93
AUC [%]	85.36	89.95	73.03	89.15	88.10	70.84	84.46	90.40	74.29