Supplements

MRI acquisition parameters

Brain MRI was performed at the Berlin Center for Advanced Neuroimaging, using a 3 Tesla Tim Trio scanner (Siemens, Erlangen, Germany) equipped with a 12-channel phased array head coil. For DWI acquisition, a single-shot echo planar imaging sequence was used (repetition time, [TR]=7500ms; echo time [TE]=86ms; field of view [FOV]=240x240mm^2; voxel size = 2.5x2.5x2.3mm^3, 61 slices, 64 non-colinear directions, b-value=1000s/mm^2, one b=0 image). For anatomical scans, a volumetric high-resolution T1-weighted magnetization prepared rapid acquisition gradient echo (MPRAGE) sequence was performed (TR/TE/inversion time [TI]=1900/2.55/900ms, FOV=240x240mm^2, matrix size=240x240, 176 slices, slice thickness=1mm).

Normative interpretation of cognitive scores

To characterize the distribution of cognitive symptoms across domains, we conducted a normative interpretation of patients' neuropsychological scores obtained at post-acute follow-up (see Table 2 in main text). To this end, raw scores were first converted to percentile ranks (PR), using age-specific norms for each test and additionally adjusting for sex and education level in the case of TAP scores.[1–4]

Following consensus approaches,[5] cognitive impairment was subsequently rated by three researchers (SK, LMJ, SR) based on these PR values. Therein, two different cutoff values were applied to define cognitive impairment: The more liberal threshold was set at PR values ≤ 16th percentile, which corresponds to a *z*-score of $z \approx -1$ in a normal distribution. In these cases, patients thus performed roughly one standard deviation below the average value expected from their age-specific norm. In the main text, we label these cases "below-average performance" with regard to the normative reference (Table 2, middle column).

The second, more conservative threshold was set at PR values ≤ 7th percentile, which corresponds to a normal-distribution equivalent of $z \approx -1.5$. Thus, if a patient's score met this threshold, we interpreted the performance to indicate "significant impairment" compared to the normative reference (Table 2, right column). Note that by definition, all cases that met the more conservative cutoff value thus also met the more liberal threshold, such that all patients in the rightmost column of Table 2 (significant

impairment) were also counted in the middle column (below-average performance). Moreover, for some tests, normative data did not yield exact PR values but PR ranges. In these cases, we categorized the degree of impairment based on how the respective PR range encompassed the above cutoff values. Specifically, this applied to the RAVLT supraspan (range 15-25 counted as below average; 5-10 counted as significant impairment), interference (5-35: below average; <5: significant impairment), and delayed recall (5-10: significant impairment) as well as to the ROCF immediate recall (11-18: below average; 3-5: significant impairment) and delayed recall (6-10: significant impairment). Finally, for each patient, we counted if the below-average and significant-impairment cutoffs were respectively met in at least one cognitive test, showing that all 24/24 patients for whom cognitive data were available met the below-average threshold at least once, and 22/24 patients (92%) also met the significant-impairment criterion in at least one cognitive test.

Region-to-network mapping

Assignment of anatomical regions to functional brain systems was implemented with a custom mapping algorithm. To this end, each of the 84 cortical and subcortical regions in the Desikan-Killiany atlas was assigned to one of the seven canonical resting-state networks from the Multiresolution Intrinsic Segmentation Template (MIST7).[6] The MIST7 atlases include subcortical and cortical brain regions which are grouped into seven functional clusters including the cerebellum, mesolimbic network, somatomotor network, visual network, default mode network, fronto-parietal/visual-downstream network, and ventral attention network/salience network/basal ganglia/thalamus. The MIST7 atlases were resampled to $1mm^3$ isotropic resolution using the Statistical Parametric Mapping 12 software to match the resolution of the Desikan-Killiany atlas. Both atlases were provided in Montreal Neurological Institute (MNI) standard space. For each ROI in the structural atlas, a binary NIfTI file was created, and the number of voxels overlapping with each of the binary MIST7 network NIfTIs was calculated. The functional assignment for each structural ROI was then given by the functional MIST7 system which showed the maximum number of overlapping voxels with the anatomical region. Finally, these programmatically assigned functional labels were quality-controlled by visual inspection.

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