# SUPPLEMENTARY MATERIALS

Table S1. Resting-state brain networks included in the functional connectivity analyses.

Network (# of regions)	Brain region (Lateralization)	MNI coordinates (x, y, x)
Default mode (4)	Medial prefrontal cortex	(1, 55, -3)
	Lateral parietal (L)	(-39, -77, 33)
	Lateral parietal (R)	(47, -67, 29)
	Posterior cingulate cortex	(1, -61, 38)
Sensorimotor (3)	Lateral (L)	(-55, -12, 29)
	Lateral (R)	(56, -10, 29)
	Superior	(0, -31, 67)
Visual (4)	Medial	(2, -79, 12)
	Occipital	(0, -93, -4)
	Lateral (L)	(-37, -79, 10)
	Lateral (R)	(38, -72, 13)
Salience (7)	Anterior cingulate cortex	(0, 22, 35)
	Anterior insula (L)	(-44, 13, 1)
	Anterior insula (R)	(47, 14, 0)
	Rostral prefrontal cortex (L)	(-32, 45, 27)
	Rostral prefrontal cortex (R)	(32, 46, 27)
	Supramarginal gyrus (L)	(-60, -39, 31)
	Supramarginal gyrus (R)	(62, -35, 32)
Dorsal attention (4)	Frontal eye fields (L)	(-27, -9, 64)
	Frontal eye fields (R)	(30, -6, 64)
	Intraparietal sulcus (L)	(-39, -43, 52)
	Intraparietal sulcus (R)	(39, -42, 54)

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Fronto-parietal (4)	Lateral prefrontal cortex (L)	(-43, 33, 28)
	Lateral prefrontal cortex (R)	(41, 38, 30)
	Posterior parietal cortex (L)	(-46, -58, 49)
	Posterior parietal cortex (R)	(52, -52, 45)
Subcortical (6)	Thalamus (L)	(-9, -18, 7)
	Thalamus (R)	(10, -17, 7)
	Amygdala (L)	(-23, -5, -17)
	Amygdala (R)	(24, -3, -18)
	Hippocampus (L)	(-26, -18, -18)
	Hippocampus (R)	(27, -17, -17)

Fig S1. Example of polysomnographic data during the nap in the MR scanner in one subject. *Top*. 20-seconds epoch of EEG data located during N3 sleep, approximately 39 min after the beginning of the nap slot and 3 min before awakening by the experimenter. *Middle*. Spectrogram of the whole nap showing the changes in spectral power across the nap (frequency band range = 0.5 to 20 Hz). Red indicates higher spectral power. In this example, one can clearly see an increase of delta power across the nap. *Bottom*. Hypnogram showing the sleep stages during the nap. The hypnogram was scored visually by an experimented rater (R.V) using the software SLEEP (Combrisson et al., 2017). The red line on the time axis (bottom) and the vertical translucent lines on the spectrogram and the hypnogram show the position of the EEG trace in the whole recording.
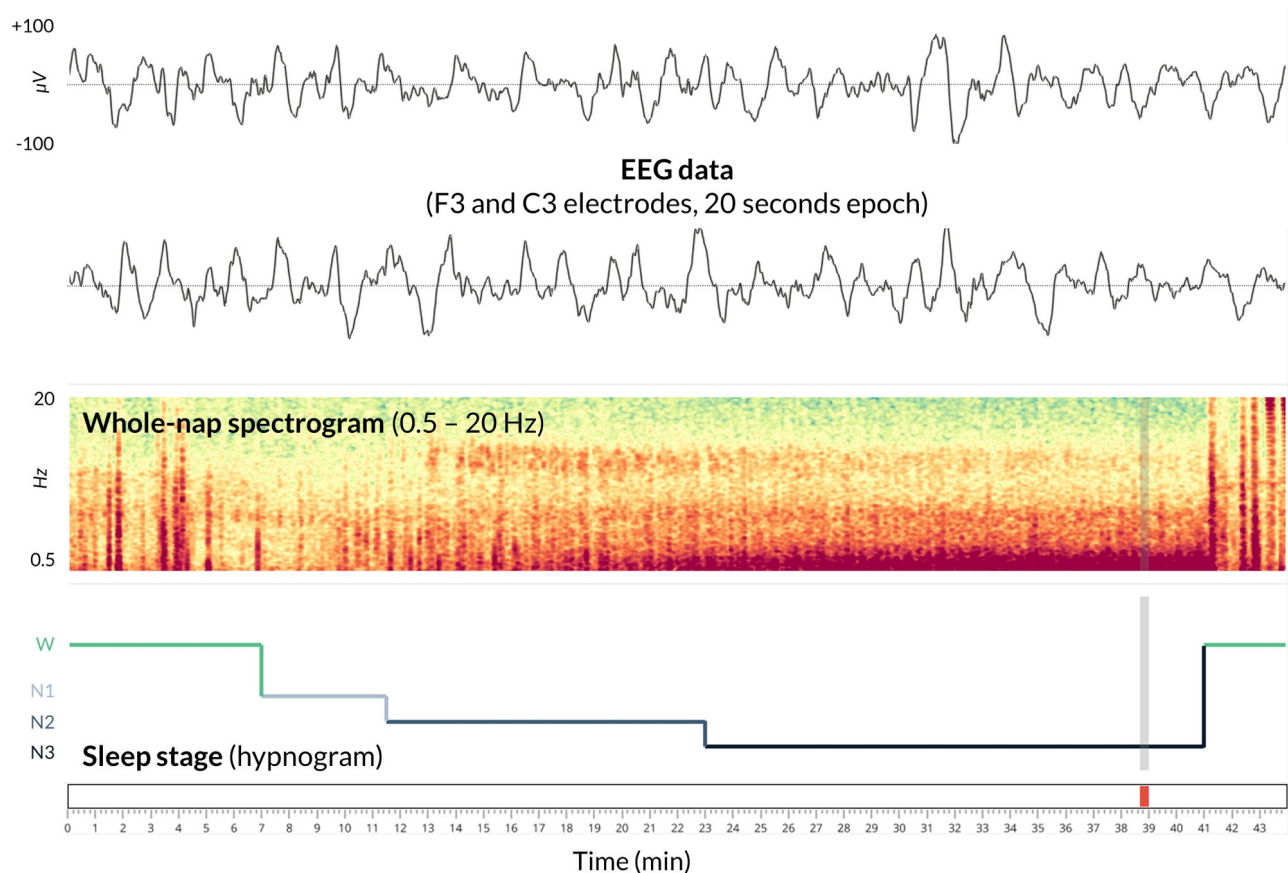
Fig S2. Spatial maps of the resting-state brain networks included in the functional connectivity analyses. These networks and their main ROIs are natively implemented in the CONN toolbox version 17.
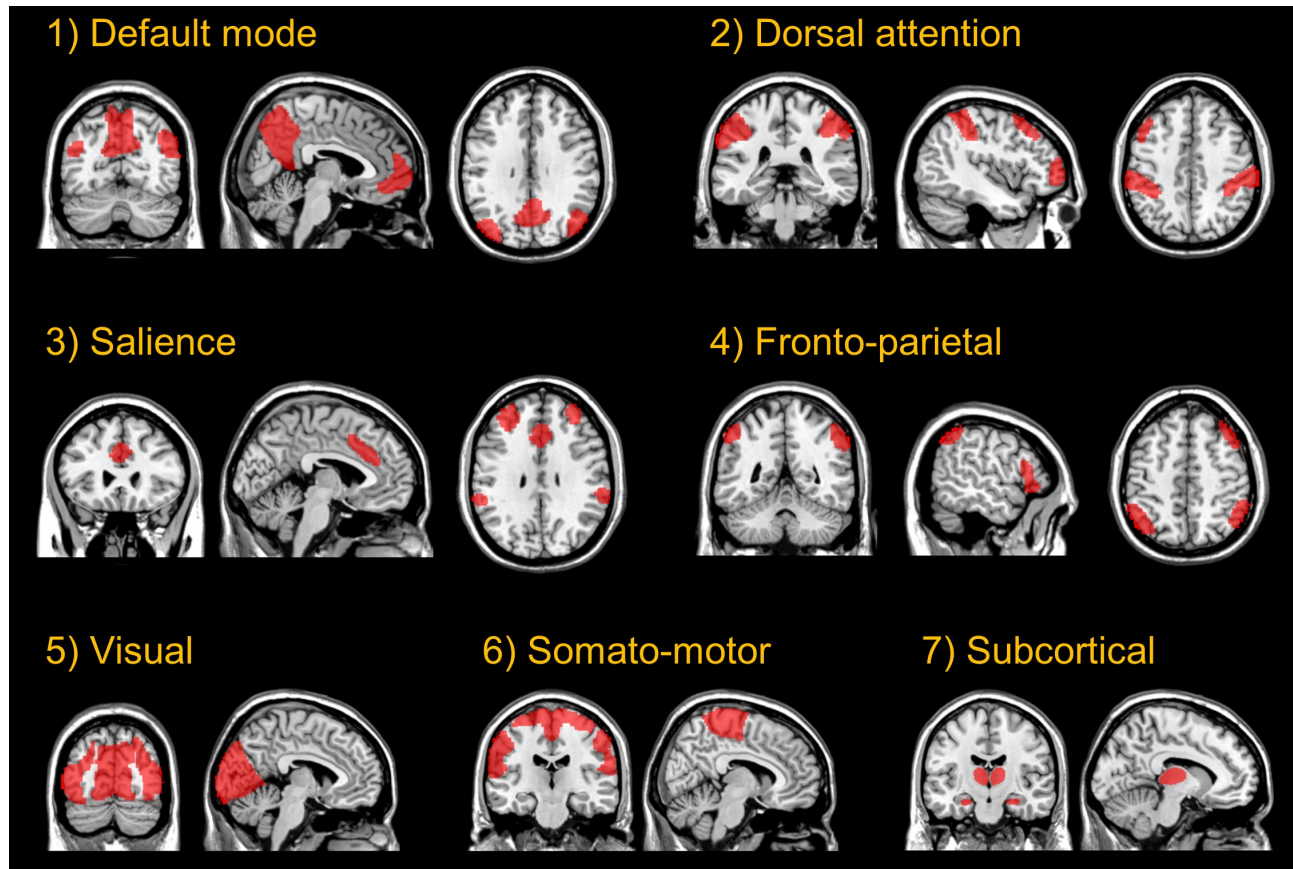
Fig S3 | EEG spectral power during the three resting-state fMRI scans in the N2 and N3 groups. No significant main effect of group or interaction was found. Error bars represent bootstrapped 95% confidence intervals.
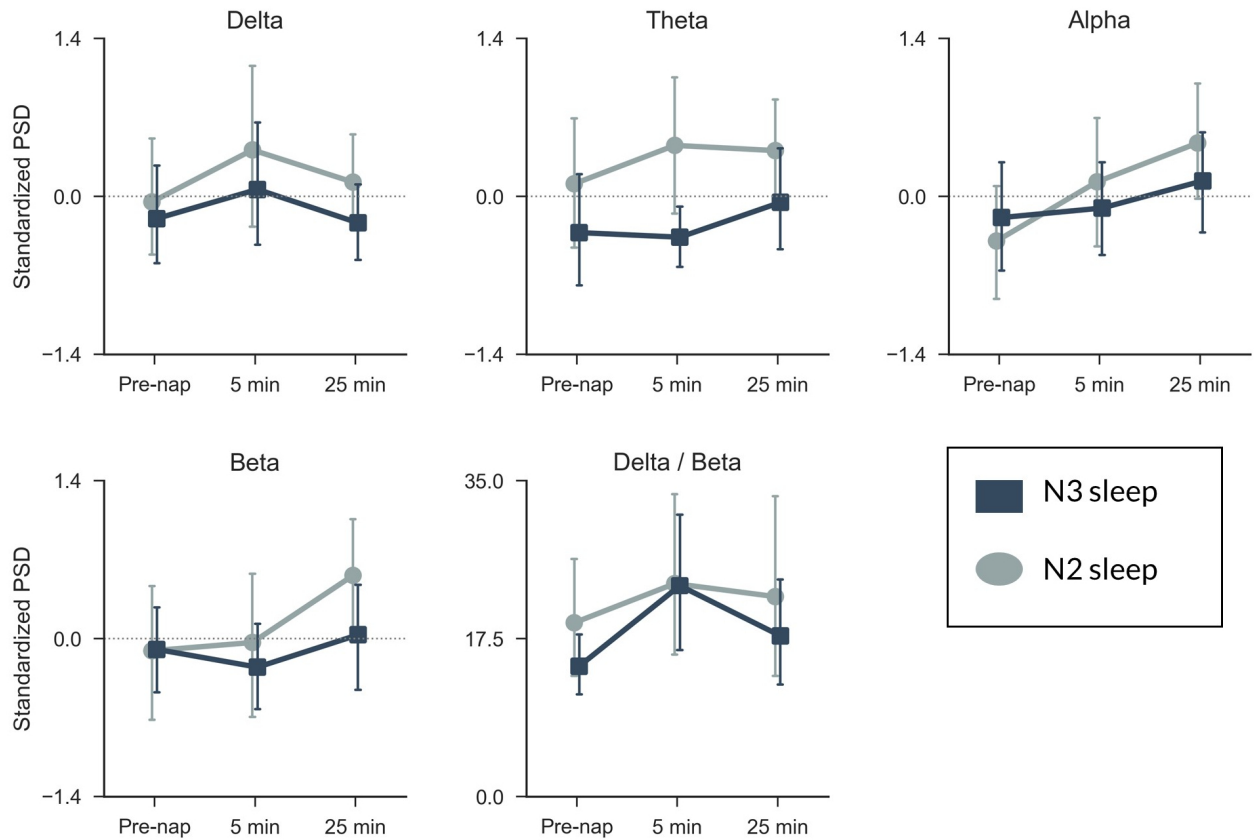
Fig S4 | Functional connectivity results. ROI-to-ROI results for the contrast pre-nap versus 25 min post-awakening). Blue connections indicate regions with significantly increased pairwise connectivity (two-sided paired t-tests, p-fdr < .05) at 25 min post-awakening. Orange-red connections indicate regions with significantly increased pairwise connectivity at pre-nap.
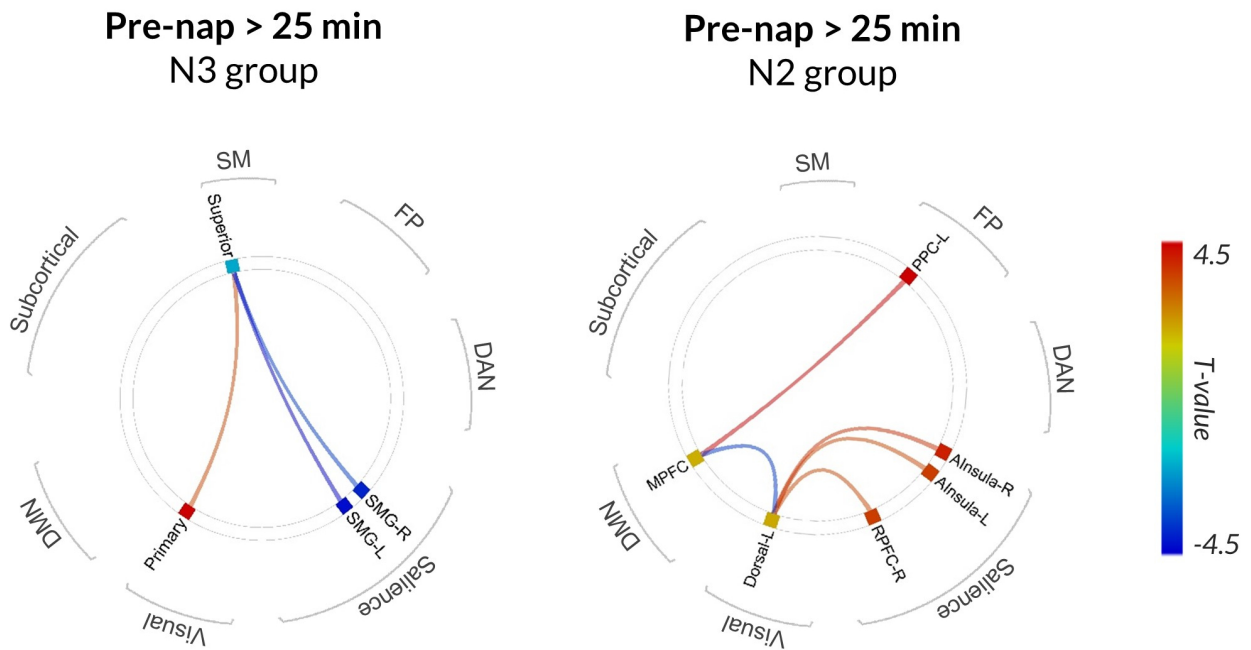
Fig S5 | Significant between-scans correlations in the DMN functional connectivity (FC). *Bottom right*, heat map showing for each subject (Y-axis) and each scan (X-axis) the average DMN functional connectivity values. Error bars represent bootstrapped 95% confidence intervals.
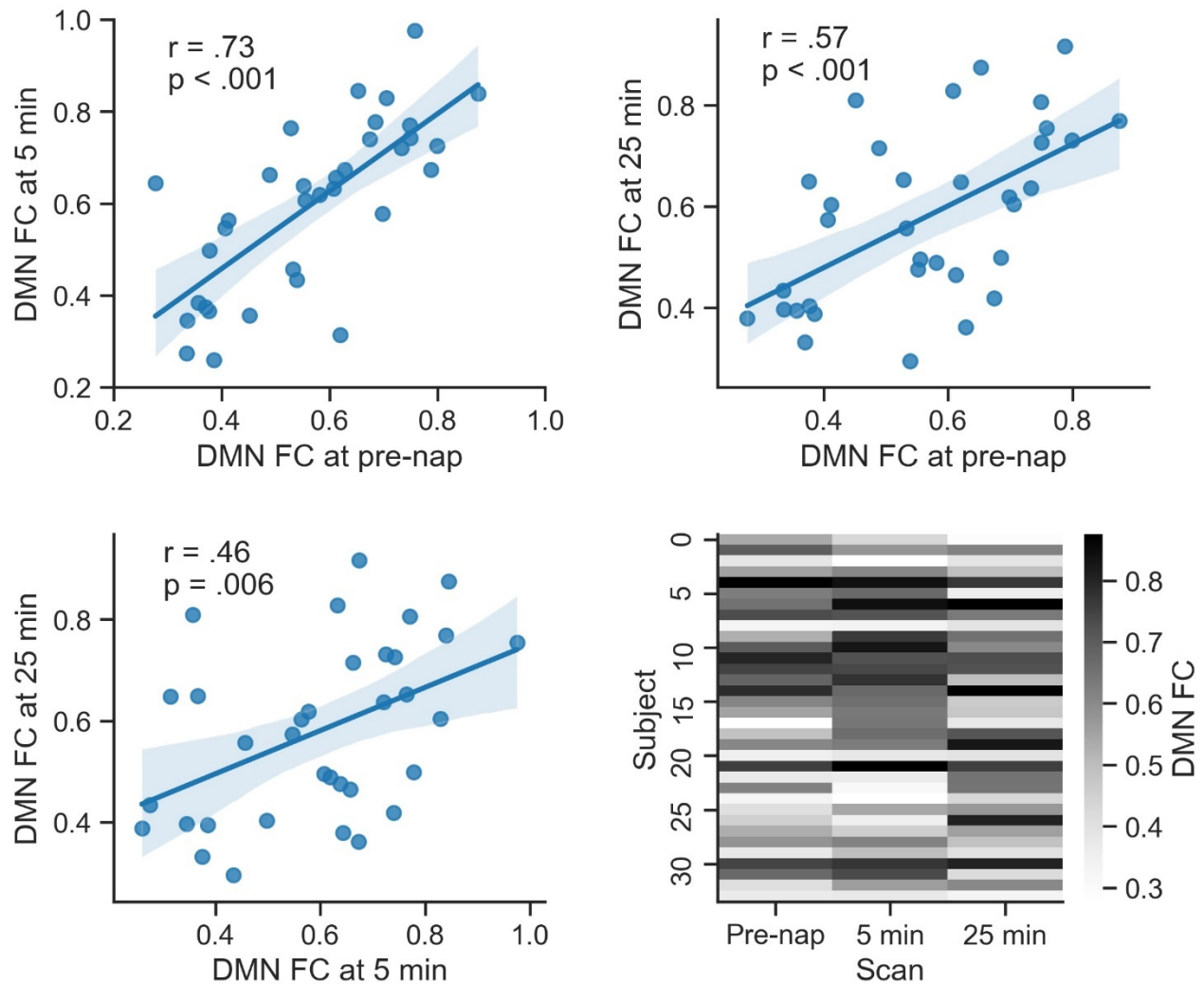
Fig S6 | Significant correlations between EEG, fMRI and behavioral performances. Error bars represent bootstrapped 95% confidence intervals.