

SUPPLEMENTARY MATERIAL 1

Image parameters and preprocessing

The images were acquired with the following parameters: repetition time, 3,000 ms; echo time, 40 ms; flip angle, 90°; voxel size, 1.9×1.9×4.0 mm³; field of view, 240 mm; slice number, 35 (interleaved); matrix, 128×128 (or 64×64); and slice thickness, 4.0 mm.

Echo planar images were preprocessed using Statistical Parametric Mapping (www.fil.ion.ucl.ac.uk/spm/). The first four images were discarded due to magnetic stabilization. The motion parameters were estimated with respect to the first image. Despiking was performed using BrainWavelet Toolbox (<https://www.brainwavelet.org/>).³⁶ The slice time was adjusted to the middle of the repetition time. The data were realigned by rigid body transformation. For the registration to the standard space, the unified segmentation algorithm in SPM12 was applied, which is a single model for segmentation, bias correction, and spatial normalization.³⁷ During spatial registration of this algorithm, the nonlinear deformation field was estimated to best overlay the tissue probability map on the individual subject image. To minimize registration error, we used the tissue probability maps of the National Institute of Health's Pediatric Database Objective 1 atlas (NIHPD, 4.5–18.5 years age range, asymmetric template), but not Montreal Neurological Institute's adult brain template.^{38,39} After smoothing using Gaussian kernel of 6-mm full width at half maximum and intensity normalization to the whole brain median of 1,000,³⁶ six motion parameters and white matter/cerebrospinal fluid signal were regressed out. Finally, bandpass filtering (0.01–0.1 Hz) was performed. We generated a functional brain network consisting of 246 cortical ROIs using Brainnetome atlas⁴⁰ and 28 cerebellar regions of SUIT (<http://www.diedrichsenlab.org/imaging/suit.htm>).⁴¹ One ROI, vermis_crus-I, was excluded because of its small size. A total of 273 ROIs were considered as the network nodes. All ROIs were also transformed to NIHPD space. The connectivity matrices for each participant were calculated using Pearson's correlation coefficient.