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Abstract A41**

**Brain plasticity following Organizational Skills Training
in elementary school students: A pilot resting-state study**

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Deficient organizational skills in neurodevelopmental conditions like attention-deficit/hyperactivity disorder contribute to school failure and conflicts at home. Unlike stimulant medication, evidence-based instruction-focused interventions can remediate children's organizational functioning.

This open-label single-arm trial used resting-state fMRI to examine the neural correlates of behavioral improvements following modified Organizational Skills Training (OSTm). Elementary school students ($n=29$, mean age=9.1 years, 9 female) with elevated, impairing organization, time management and planning skills on the Children's Organizational Skills Scale (COSS) underwent fMRI scans before and after 12 weeks of OSTm and provided high-quality imaging data (mean framewise displacement <0.07 mm).

Following OSTm, COSS standardized scores for 80% of the sample fell below the clinical impairment cut-off, showing robust improvement in organizational skills ($p<0.01$, Cohen's $d=2.2$). Our hypothesized neural target was the intrinsic functional connectivity (iFC) between dorsal anterior cingulate cortex (dACC; MNI=8, 7, 38) and a pre-registered mask (<https://osf.io/5m5sx/>) in anterior ventral striatum (aVS). Pre- vs post-treatment dACC-aVS iFC changed with effect size=0.40($n=29$) or 0.49($n=28$ without one outlier). Notably, the change in dACC-aVS_{FP} iFC (i.e., the pre-registered aVS mask corresponding to the frontoparietal network) accounted for 13% of the variance of the improvement in parent-reported COSS T-scores.

Collectively, these results demonstrate successful modification of an evidenced-based OST intervention and link behavioral remediation to changes in iFC. If replicated, the current findings suggest that practical, positive changes in organizational, time management and planning skills are associated with alterations in resting-state connectivity and enable exploration of neural targets as mediators of organizational functioning and clinical change.