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### Neural Connectivity Signatures of Adult Illiteracy on 7T Resting-State fMRI

A significant portion of the Brazilian population (approximately 9.3 million people) remains illiterate despite national educational efforts. Although adult illiteracy is a worldwide phenomenon, the neural connectivity associated with the absence of literacy acquisition remains poorly understood. We investigated 20 illiterate adults using 7-Tesla resting-state fMRI ( $54 \pm 8$  years;  $11.6 \pm 8.6$  words per minute). Functional images underwent motion correction through realignment, scrubbing of high-motion volumes, and regression of motion parameters during denoising. Seed-to-voxel analyses controlling for age and reading performance revealed decreased connectivity between the visual word form area and a left frontal cluster including the middle frontal gyrus, superior frontal gyrus, and frontal pole (cluster-corrected  $p\text{-FDR} < 0.0001$ ; MNI  $-30, 34, 42$ ). ROI-to-ROI analyses also showed reduced connectivity within visual and language networks. These findings suggest that literacy acquisition reshapes large-scale functional brain organization through experience-dependent plasticity in adulthood.