

Supplemental Material S8. Multivariable-adjusted associations of magnetic resonance imaging (MRI) measures with speech-in-noise performance by cohort, ACHIEVE baseline (2018–20) and ARIC-NCS Visit 6/7 (2016–17/2018–19).

Worse MRI Measures, per SD ^a	Cohort 1: ACHIEVE (N=413) ^b		Cohort 2: ARIC-NCS (N=173) ^b		<i>P</i> -interaction
	Estimate (95% CI)	<i>P</i> -value	Estimate (95% CI)	<i>P</i> -value	
Brain Volumes					
Total brain	-0.12 (-1.04, 0.80)	0.80	0.04 (-1.12, 1.19)	0.95	0.74
Temporal lobe	-0.90 (-1.60, -0.21)	0.01	-0.73 (-1.61, 0.15)	0.10	0.70
Frontal lobe	-0.47 (-1.18, 0.25)	0.20	-0.30 (-1.20, 0.61)	0.52	0.71
Occipital lobe	-0.21 (-0.83, 0.40)	0.49	0.24 (-0.61, 1.09)	0.57	0.31
Parietal lobe	-0.23 (-0.94, 0.47)	0.52	-0.00 (-0.95, 0.94)	0.99	0.61
Deep gray subcortical structures	-0.34 (-0.93, 0.25)	0.26	-0.21 (-1.01, 0.59)	0.61	0.76
Fractional anisotropy	-0.17 (-0.72, 0.38)	0.54	0.55 (-0.15, 1.25)	0.12	0.07
Mean diffusivity	-0.13 (-0.60, 0.34)	0.59	0.06 (-0.63, 0.74)	0.87	0.66
White matter hyperintensities volume	-0.43 (-0.90, 0.05)	0.08	-0.17 (-0.79, 0.45)	0.59	0.51

Abbreviations: ACHIEVE: Aging and Cognitive Health Evaluation in Elders; ARIC-NCS: Atherosclerosis Risk in Communities Neurocognitive Study; CI: confidence interval; SD: standard deviation.

^a Multivariable-adjusted linear regression to estimate change in the quick speech-in-noise score associated with every SD worse in brain MRI measures. An interaction term between brain MRI measure and cohort (ACHIEVE/ARIC-NCS) was included.

^b Models adjusted for age, sex, race, field center, education, body mass index, smoking, hypertension, diabetes, stroke, and intracranial volume.