

Supplemental Material S12. Multivariable-adjusted associations of magnetic resonance imaging (MRI) measures with speech-in-noise performance, ACHIEVE baseline (2018–20) and ARIC-NCS Visit 6/7 (2016–17/2018–19).

Worse MRI Measures, per SD ^a	Model 1: Covariates (N=586) ^b		Model 2: Covariates + Other Predictors (N=584) ^c	
	PR (95% CI)	P-value	PR (95% CI)	P-value
Brain Volumes				
Total brain	1.16 (0.79, 1.68)	0.45	1.11 (0.76, 1.63)	0.58
Temporal lobe	1.35 (1.01, 1.82)	0.04	1.19 (0.86, 1.63)	0.29
Frontal lobe	1.23 (0.94, 1.60)	0.13	1.27 (0.97, 1.67)	0.09
Occipital lobe	0.99 (0.79, 1.26)	0.97	1.02 (0.80, 1.30)	0.89
Parietal lobe	1.21 (0.89, 1.64)	0.22	1.09 (0.81, 1.46)	0.57
Deep gray subcortical structures	1.19 (0.97, 1.47)	0.10	1.15 (0.93, 1.41)	0.20
Fractional anisotropy	1.00 (0.83, 1.21)	0.99	1.01 (0.83, 1.22)	0.92
Mean diffusivity	1.02 (0.87, 1.20)	0.82	0.98 (0.84, 1.13)	0.74
White matter hyperintensities volume	1.10 (0.96, 1.26)	0.18	1.07 (0.92, 1.25)	0.36

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

^a Multivariable-adjusted Poisson regression with robust standard errors to estimate prevalence ratio of being in the lowest quartile of quick speech-in-noise score associated with every SD worse in brain MRI measures.

^b Model 1 adjusted for age, sex, race, field center, education, body mass index, smoking, hypertension, diabetes, stroke, and intracranial volume.

^c Model 2 adjusted for age, sex, race, field center, education, body mass index, smoking, hypertension, diabetes, stroke, intracranial volume, pure-tone average, and global cognitive performance.