

Supplemental Tables

Supplemental Table 1. Age-related increases in activity for correct versus incorrect word recognition.

	Cluster		
Anatomical Region	Size	Z score	ICBM/MNI Coordinate
Left MFG	129	4.51	-36, 51, 18
Left ACC	231	3.83	-6, 42, 33
Left VO	77	3.43	-21, -54, -9
Right and Left V1	100	3.34	12, -78, 18

VO = Ventral Occipital; $p < .001$ for all peak voxel values

Supplemental Table 2. Group results for increased activity during incorrect compared to correct word recognition.

Anatomical Region	Cluster		
	Size	Z score	ICBM/MNI Coordinate
Left and Right ACC	575	4.78	-9, 18, 48
Left IFG, AI, MFG, Premotor, M1	986	4.74	-39, 15, -12
Right IFG, AI, MFG, Premotor, M1	524	4.73	54, 21, 18
Left Tegmentum and Tectum	66	3.78	-6, -27, -6

IFG = Inferior Frontal Gyrus, AI = Anterior Insula, M1 = Primary Motor; $p < .001$ for all peak voxel values

Supplemental Table 3. Group results for increased activity during the 400 Hz compared to 3150 Hz filtered word conditions.

Anatomical Region	Cluster		
	Size	Z score	ICBM/MNI Coordinate
Left and Right ACC, right MFG	683	4.61	0, 24, 36
Left IFG and AI	293	4.01	-51, 24, 9
Right IFG and AI	244	3.80	48, 12, -3
Left MFG	103	3.31	-21, 42, 12

IFG = Inferior Frontal Gyrus, AI = Anterior Insula; $p < .001$ for all peak voxels

Supplemental Figure Captions

Supplemental Figure 1. Age-related changes in brain activity for the 400-3150 Hz comparisons.

a) Older adults exhibited more activity in these areas for the 3150 Hz condition, while younger adults exhibited more activity in these areas for the 400 Hz condition. b,c,d) Scatter plots showing age-related changes in the average contrast value from the MFG region in a) for the 400-3150 Hz, 1000-3150 Hz, and 1600-3150 Hz comparisons, respectively.

pSTG/STS = posterior superior temporal gyrus and superior temporal sulcus; V1/VO = primary visual and ventral occipital cortex; pSTG/IPL = posterior superior temporal gyrus and inferior parietal lobule.

Supplemental Figure 2. Increased right frontal activity across the sample for incorrect compared to correct word recognition and decreasing word intelligibility. Frontal lobe regions that exhibit increased activity a) when participants made incorrect compared to correct word recognition responses and b) with decreasing word intelligibility across the four filter conditions. c,d) Across participants there was elevated right frontal lobe activity for both comparisons and no significant association with age. The right MFG/IFG contrast values used for the c,d) scatter plots were obtained from the single cluster seen in a) that extended from the MFG to IFG.



