

TABLES

Table I: Clinical data for the ten cochlear implant candidates enrolled in the sound imagery task. The 7 patients who also participated in the phonological task are numbered 1, 2, 3, 6, 8, 9, and 10.

Subject number	Sex	Age at experiment (years)	Duration of bilateral HL (years)	Duration of auditory deprivation (months)	WRS pre-CI* (% , 60 dB HL)	WRS post-CI (% , 60 dB HL)
1	F	67.7	46	36	0	48
2	M	45	26	4	0	41
3	F	32	10	12	0	69
4	M	57.9	41	16	0	84
5	F	59	11	36	0	88
6	F	56.2	23	36	0	24
7	F	25.5	0.5	5	0	86
8	F	56	22	48	0	48
9	F	73	16	8	0	86
10	F	54.7	30	-	50	28

HL: hearing loss; WRS: word recognition scores

* With optimally fitted hearing aids, Lafon test (three-phoneme monosyllabic words)

Duration of bilateral hearing loss represents the time elapsed since subjective auditory acuity decrease, leading to the use of hearing aids.

Duration of auditory deprivation represents the time elapsed since subjects could no longer communicate by hearing, even with the best-fitted hearing aid, without lip-reading. Because Subject 10 had some residual hearing, this definition was not applicable in her case.

Table II: Areas of significant activation for the sound imagery task in normal hearing subjects

Region	L/R	Contrast	MNI coordinates	p	Z score
Inf frontal gy./ insula anterior STG	L	Sound>Baseline	-50 10 21	FDR 0.008	5.36
		Sound>Color	-42 4 6	Uncorr 0.0001	3.89
		Sound>Baseline	-54 4 -6	FDR 0.01	4.51
Inf frontal gyrus	R	Sound>Baseline	60 14 0	FRD 0.01	4.95
Sup front gyrus	L	Sound>Baseline	-22 32 48	FDR 0.01	4.06
		Sound>Color	-26 42 46	Uncorr 0.0001	4.60
Inf parietal lobule/ angular gyrus	L	Sound>Baseline	-44 -66 38	FDR 0.01	4.81
		Sound>Color	-46 -70 28	Uncorr 0.0001	3.90
PSTG/SMG	L	Sound>Baseline	-62 -40 22	FDR 0.01	4.73
PSTG/SMG	R	Sound>Baseline	70 -40 10	FDR 0.01	4.30
		Sound>Baseline	70 -34 28	FDR 0.02	3.41
		Sound>Color	70 -34 10	Uncorr 0.0001	3.55
Cerebellum	L	Sound>Baseline	-28 -56 -32	FDR 0.01	4.85
Cerebellum	R	Sound>Baseline	16 -82 -24	FDR 0.01	4.71

Inf: inferior, Sup: superior

Table III: Areas of significant activation for the sound imagery task in deaf subjects, task-by-group interaction (sound more than color imagery), and brain correlation between neural response to sound imagery and auditory deprivation & CI outcomes

Region	L/R	Contrast	MNI coordinates	p	Z score
Inf frontal gyrus	L	Sound>Baseline	-46 24 -16	FDR 0.02	4.41
		Controls>Patients	-42 4 2	Uncorr 0.001	3.09
Sup frontal gyrus	L	Sound>Baseline	-34 56 18	FDR 0.04	3.93
Cerebellum	L	Sound>Baseline	-22 -70 -30	FDR 0.02	4.26
Cerebellum	R	Sound>Baseline	44 -72 -28	FDR 0.008	5.34
PSTG/SMG	R	Controls>Patients	60 -66 8	Uncorr 0.002	2.91
		Neg correlation with HL	62 -46 26	Uncorr 0.0001	4.03
		Pos correlation with CI	60 -46 26	Uncorr 0.04	1.75
Middle STG	R	Neg correlation with CI	46 -12 12	Uncorr 0.0001	3.74

Inf: inferior, Sup: superior; Neg: negative; Pos: positive; HL: hearing loss