

Phonological processing in post-lingual deafness and cochlear implant outcome.

Diane Lazard, H. J. Lee, Michael Gaebler, Christian Kell, Eric Truy,
Anne-Lise Giraud

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Table 1: Clinical data of the 8 profound deaf candidates for cochlear implantation

| Patient no. | Sex | Age at experiment (year) | Bilateral HL duration (year) | Deafness duration (month) | WRS pre-CI* (% , 60 dB) | WRS post-CI (% , 60 dB) |
|-------------|-----|--------------------------|------------------------------|---------------------------|-------------------------|-------------------------|
| 1 | F | 67.7 | 46 | 36 | 0 | 48 |
| 2 | M | 45 | 26 | 4 | 0 | 41 |
| 3 | F | 32 | 10 | 12 | 0 | 69 |
| 4 | F | 56.2 | 23 | 36 | 0 | 24 |
| 5 | F | 56 | 22 | 48 | 0 | 48 |
| 6 | F | 73 | 16 | 8 | 0 | 86 |
| 7 | M | 31.7 | 18 | 216 | 36 | X |
| 8 | F | 54.7 | 30 | 360 | 50 | 28 |

HL = hearing loss. WRS = word recognition scores

There was no statistical correlation between age and deafness duration.

Patient 7 was not implanted for personal reasons.

* With optimally fitted hearing aids, Lafon test

Table 2: Whole brain correlation with post-CI word recognition

| Correlation | L/R | Region | BA | MNI coordinates | Cluster size | Z score |
|-------------|-----|-----------------------------|----|--------------------|-----------------|------------|
| Positive | L | Premotor cortex | 6 | -48 8 34 | 12 | 2.79 |
| | L | Premotor cortex | 6 | -28 -8 60 | 12 | 4.00 |
| | L | Superior parietal lobule | 7 | -10 -72 62 | 51 | 3.12 |
| | L | Middle occipital gyrus | 18 | -10 -104 18 | 109 | 12.98 |
| | R | Middle occipital gyrus | 18 | 30 -84 4 | 35 | 3.71 |
| | L | Middle temporal gyrus | 37 | -54 -54 0 | 20 | 2.91 |
| Negative | L | Temporal pole | 22 | -54 4 0 | 76 | 17.49 |
| | L | Temporal pole | 22 | -46 8 -16 | 108 | 6.33 |
| | L | Inferior frontal gyrus | 47 | -36 28 -20 | 30 | 3.18 |
| | R | Inferior frontal gyrus | 47 | 36 24 -20 | 186 | 3.49 |
| | R | Inferior frontal gyrus | 47 | 44 36 -10 | 73 | 3.40 |
| | L | Middle temporal gyrus | 21 | -48 -36 -6 | 77 | 3.35 |
| | L | Middle occipital gyrus | 19 | -46 -74 6 | 35 | 3.70 |
| | R | Supramarginal gyrus | 40 | 56 -34 26 | 11 | 3.51 |

Table 3: Whole brain correlation with hearing loss duration and direct group comparison

Patients > Controls

| Correlation | L/R | Region | BA | MNI coordinates | Cluster size | Z score |
|------------------------|-----|------------------------|----|--------------------|-----------------|------------|
| Negative with HL | L | Inferior frontal gyrus | 44 | -52 10 26 | 41 | 4.30 |
| | L | Middle occipital gyrus | 18 | -26 -94 0 | 34 | 3.62 |
| Positive with HL | L | Inferior frontal gyrus | 47 | -44 28 -8 | 67 | 4.02 |
| Patients > Controls | R | Surpamarginal gyrus | 40 | 60 -34 22 | 73 | 4.43 |
| Controls > Patients | - | - | | - | - | - |

HL = hearing loss duration

- = no significant result.