Supplemental Material S1.

The arcsine transform (T) was applied as follows:

$$T = \arcsin\sqrt{\frac{X}{N+1}} + \arcsin\sqrt{\frac{X+1}{N+1}}$$

X represents the total number of words reported correctly and N represents the total number of words presented. This was then transformed linearly:

$R = 1.46\ (31.83098861\mathrm{T} - 50) + 50$

where R indicates the resulting rationalized arcsine-transformed score (rau). This transformation extends the original percent correct scale outwards in both directions from 50%, creating bigger differences as the extremes of the range are approached. Consequently, this transformation makes the rationalized arcsine scale linear and additive in its proportions while producing values close to that of the original percentage scores (Studebaker, 1985).

Reference

Studebaker, G. A. (1985). A "rationalized" arcsine transform. *Journal of Speech and Hearing Research, 28,* 455–462. https://doi.org/10.1044/jshr.2803.455

Table S2. Comparison of recognition scores with three modalities over time.

Time point	With bilateral CI				With the first CI alone				With the second CI alone	
	Monosyllabic word in quiet		Sentences in noise		Monosyllabic word in quiet		Sentences in noise		Monosyllabic word in quiet	
	Mean ±*SD*	*p* value	Mean ±*SD*	*p* value	Mean ±*SD*	*p* value	Mean ±*SD*	*p* value	Median (min. -max.)	*p* value
T0	57.75 ± 18.37		21.75 ± 20.83		57.46± 18.18		21.75±20.84		NA	
1 week	66.85 ± 16.04	0.996	37.75 ± 25.81	1.000	62.43± 18.44	1.000	30.71±24.92	1.000	1.5% (0%–29.33%)	
1 month	76.00 ± 11.80	0.005	51.54 ± 29.64	0.681	69.00± 15.99	0.044	41.73±25.42	0.530	6.5% (0%–44.0%)	1.000
2 months	81.71 ± 10.43	0.000	59.35 ± 27.30	0.038	74.35± 14.00	0.002	48.21±26.06	0.096	11.5% (0%–49.33%)	0.228
3 months	83.59 ± 9.07	0.000	61.80 ± 25.16	0.006	77.14± 10.48	0.001	49.71±26.47	0.052	15.17% (8.0%–78.0%)	0.006
6 months	86.99 ± 6.24	0.000	72.31 ± 21.99	0.000	82.05± 6.05	0.000	56.25±23.21	0.006	23.5% (12.0%–82.0%)	0.000
12 months	86.74 ± 5.66	0.000	75.23 ± 18.15	0.000	83.04± 7.89	0.000	62.32±18.92	0.001	26.33% (15.0%–85.3%)	0.000

The means, *SD*s and *p* values for comparisons between test intervals for each ear condition (T0 vs. Other time points in the first side and bilateral CI, 1 week vs. Other time points in the second side) were shown in the table.

Table S3. Predictors of diverge time point.

	Diverge time point (days)	
Predictor	Spearman's ρ	p value
Age at first CI	0.290	0.315
Age at second CI	0.315	0.273
inter-implant interval	0.335	0.242
LFPTA	0.003	0.997
Recognition scores with 1st CI at T0 in quiet	–0.228	0.433
Recognition scores with 1st CI at T0 in noise	–0.181	0.535

CI = Cochlear implantation; T0 = At the time the second implant was switched on; LFPTA = low frequency pure-tone average (in 250 Hz and 500 Hz).