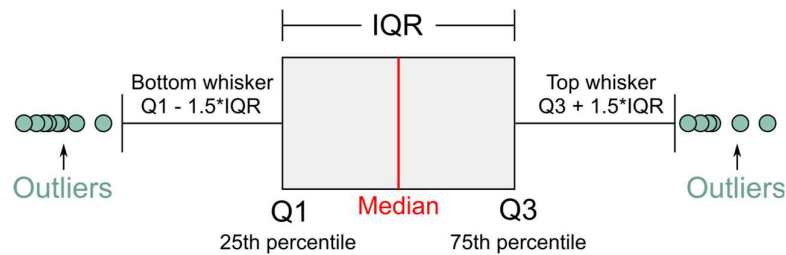


**Supplemental Material S2.** Effect of doubling/halving in the automatic extraction of  $f_0$  using Praat.

We computed the  $f_0$  contour of each participant and removed the outliers as follows: For each speaker, the interquartile range (IQR) was computed and the values outside the whiskers were removed. Figure S1 illustrates this procedure.



**Figure S1.** Different parts of a boxplot used to remove  $f_0$  outliers.

Then, we computed the average (mean  $f_0$  [Hz]) and standard deviation (std  $f_0$  [Hz]) for each participant (without  $f_0$  outliers). We compared the results between the mean  $f_0$  [Hz] and std  $f_0$  [Hz] with and without outliers. Additionally, we performed the same experiments considering  $f_0$  values inside the IQR. The results are reported in Tables S2 and S3. The statistical analysis showed no considerable differences between the control group and CI users even when the outliers were removed. The  $p$ -values were adjusted using Benjamini-Hochberg adjustment.

**Table S2.** Mann-Whitney U-tests between **male** CI users and control speakers. With outliers: All  $f_0$  values used. Without outliers:  $f_0$  values between the IQR and whiskers. IQR: Only  $f_0$  values inside the interquartile range were used. *SD*: Standard Deviation. Cohen's  $d$ : Effect size.

Acoustic feature	Range of $f_0$	CI users		Control group		$p$ -values	Cohen's $d$
		Mean	<i>SD</i>	Mean	<i>SD</i>		
Mean $f_0$ [Hz]	With outliers	134	26	127	22	.126	0.26
	Without outliers	133	25	127	22	.155	0.24
	IQR	132	26	126	23	.147	0.24
Std $f_0$ [Hz]	With outliers	29	8	28	8	.182	0.14
	Without outliers	20	7	20	7	.427	0.01
	IQR	8	3	8	3	.522	0.04

**Table S3.** Mann-Whitney U-tests between **female** CI users and control speakers. With outliers: All  $f_0$  values used. Without outliers:  $f_0$  values between the IQR and whiskers. IQR: Only  $f_0$  values inside the interquartile range were used. *SD*: Standard Deviation. Cohen’s *d*: Effect size.

Acoustic feature	Range of $f_0$	CI users		Control group		<i>p</i> -values	Cohen’s <i>d</i>
		Mean	<i>SD</i>	Mean	<i>SD</i>		
Mean $f_0$ [Hz]	With outliers	193	26	195	23	.283	0.07
	Without outliers	195	24	195	24	.373	0.02
	IQR	192	24	193	24	.373	0.03
Std $f_0$ [Hz]	With outliers	38	9	38	8	.543	0.05
	Without outliers	31	10	29	7	.539	0.18
	IQR	13	5	12	3	.406	0.11