How do cochlear implants work?

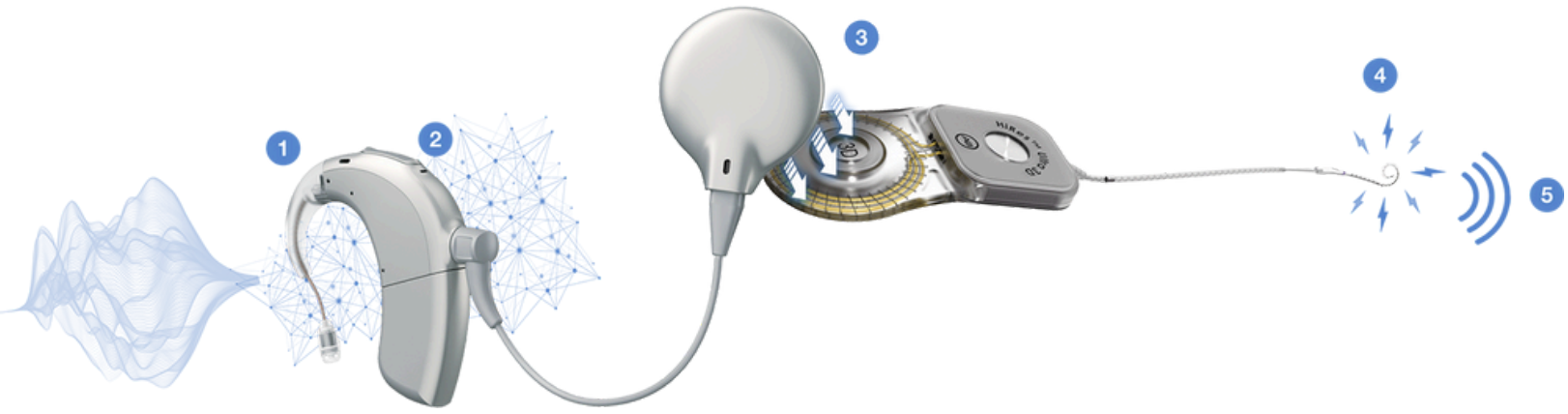
For more than 40 years, cochlear implants have helped people with hearing loss access sound by bypassing damaged parts of the ear and sending electrical signals to the brain.

A cochlear implant (CI) has two main parts.

The **internal processor** is surgically implanted by a specialized surgeon. It is placed in the mastoid bone behind the ear.

The **external processor** sits on the outside of the head. The microphones and speech processors rest over the ear, while the transmitter connects to the internal processor with a magnet.

How the CI system works:



1. The microphones capture sound waves that pass through the air.
2. The sound waves are converted into detailed digital information by the sound processor.
3. The magnetic headpiece sends the digital signals to the implant.
4. The implant takes the digital signal and directs the electrode array to send a signal to the hearing nerve.
5. The hearing nerve sends impulses to the brain, where they are interpreted as sound.

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