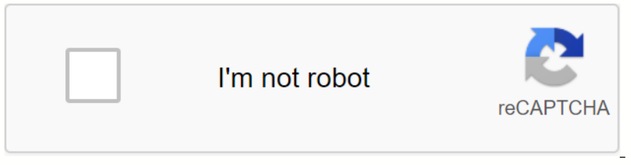


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# Nucleus 622 cochlear implant

The Cochlear implant is a surgically placed device that helps a person with severe hearing loss to hear sounds. The inner ear is a snaal-shaped part of the inner ear. It turns sound vibrations into electrical signals that travel along the auditory nerve. The brain translates these signals into recognizable sounds. Cochlear (KOE-klee-er) implants differ from hearing aids: The hearing aid makes sounds louder so people with hearing loss can hear. In-house implants bypass damaged parts of the inning to stimulate the auditory nerve directly. They can help when the hearing aid can't. How do cochlear implants work? Cochlear implants are: A microphone and sound processor that sit outside the body. The microphone picks up the sound and sends it to the processor. A processor is a minicomputer that converts audio into digital data. The transmitter then sends a digital signal to the receiver/stimulator. Receiver/stimulator placed under the skin and muscle behind the ear. This will get information from the processor. It sends electrical impulses with a thin wire to electrodes placed in cochlea. Electrodes stimulate the auditory nerve. The message goes to the brain and the brain can use the information to identify sounds and understand speech. Is hearing on a cochlear implant like normal hearing? The sound quality of the Cochlear implant differs from that of normal hearing. This is because a limited number of electrodes take over the work of thousands of hair cells in normal cochlea. The sounds the child hears are not entirely natural. But cochlear implants let someone sense a voice they didn't otherwise hear. Babies who have never heard before are building new brain pathways so that they begin to understand these sounds. Therapy and practice allow all children to learn to interpret these sounds to better understand speech. Who gets the cochlear implant? Doctors are considering cochlear implants for children under 12 months of age with deep hearing loss in both ears. Older children with severe hearing loss may also receive cochlear implants. The Cochlear implant team helps decide whether cochlear implants are a good option. This team includes an audiologist (hearing specialist), ear-nose-throat (ENT) doctor, speech therapist, psychologist and social worker. Children being considered for surgery will receive hearing tests with speech/language assessments, use the hearing aid for a while to see if it helps to get a computer smoked pie (CT) or MRI to look at the inner ear and the bones surrounding it Children may not receive implants if: Their hearing is too good (they can hear audio and speech in hearing aids). Their hearing loss wasn't caused by a cochlea problem. They've been deaf for a long time. The auditory nerve is damaged or missing. What happens to the cochlear implant Cochlear implant surgery is performed under general anaesthesia. The child sleeps through the surgery and feels no pain. Surgeon: Makes an incision (cut), then inserts the implant under the skin and inside the skull. Threads the wires with electrodes into the cochlea spiral. Attach the implant and close the incision with sutures. Depending on hearing the child, your doctor may recommend receiving two cochlear implants, one for each ear. This may be done simultaneously or in two separate operations. People with two implants are better able to tell where the sound comes from, hear better in noisy settings and hear sound from both sides without having to turn their heads. Is cochlear implant surgery? All surgeries involve risks. The most common problems after cochlear implant surgery are: infection of the ear (tinnitus) dizziness or balance problems (dizziness) numbness around the ears Rare problems are: the weakness of the brain-borne muscles of bleeding of cerebrospinal fluid around the brain the implant does not work brain infection (meningitis) Children with cochlear implants have a higher risk for some types of meningitis. So it is important that they get their immunization in time. Children over 2 years of age with cochlear implants should also receive pneumococcalpolysaccharidae vaccine (PPSV23) to protect against meningitis. Learning how to use a Cochlear implant An audiologist turns on cochlear implants about 2-4 weeks after surgery. The team fine-tune them for several weeks according to your child's hearing needs. They also teach you how to take care of it and use it. Children receiving in-house implants begin hearing rehabilitation (listening therapy) and speech and language therapy shortly after surgery. Hearing rehabilitation helps your child recognize sounds and connect meanings to these sounds. Speech therapy helps them develop and understand spoken language. Wait for these sessions to occur once or twice a week for at least a year. What else am I supposed to know? Most children who receive cochlear implants are doing well, but the results vary. How well do they hear and communicate depends, for example: their age during hearing loss, which caused hearing loss at their age when they received the implants, do they have other health problems or learning difficulties How can parents help? After surgery, children need strong support from parents and other family members. You play an important role in developing your child's speech. The training programs offered by therapists can help you learn the best ways to help your child. If your child is nominated for home implants, talk to the implant team about what to expect after surgery. It can help you learn everything you can hearing loss and cochlear implants. Discuss with local support groups from support groups The area. You can also search online for information and support: Reviewed by: William J. Parkes, IV, MD Date revised: March 2020 In-house implant is a surgically placed device that helps the person responsible for severe hearing loss hear sounds. The inner ear is a snaal-shaped part of the inner ear. It turns sound vibrations into electrical signals that travel along the auditory nerve. The brain translates these signals into recognizable sounds. Cochlear (KOE-klee-er) implants differ from hearing aids: The hearing aid makes sounds louder so people with hearing loss can hear. In-house implants bypass damaged parts of the inning to stimulate the auditory nerve directly. They can help when the hearing aid can't. How do cochlear implants work? 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