babyhearing.org

Cochlear Implants
Frequently Asked Questions for Primary Care Physicians

Q: Are all children with hearing loss candidates for cochlear implants?

A: No. Children with unilateral and milder degrees of hearing loss are not implant candidates. Children who have severe to profound bilateral hearing loss are potential candidates if hearing aids don't help sufficiently for development of speech and language.

Q: When do most children undergo cochlear implant surgery?

A: The FDA has approved cochlear implants in children as young as 12 months. Children who have meningitis might get a cochlear implant earlier than this age. In this group of children, the cochlea can become ossified due to the impact of meningitis on the inner ear. The ENT surgeon will monitor ossification by a CT of the internal auditory canal. If they see that ossification is occurring, they might opt to implant younger than 12 months of age.

There are research protocols evaluating the safety and efficacy of cochlear implantation in children as young as 6 months of age. But this is not currently standard practice.

Some children receive an implant at older ages, particularly if they have had a progressive hearing loss. Some children who are making good progress with hearing aids plateau and then a cochlear implant may be considered at that time.

Q: Are cochlear implants successful for young children? What does the evidence suggest?

A: The literature on outcomes consistently shows: 1) that many young children receive significant development benefit from cochlear implants in areas such as auditory, speech, language and social learning, 2) there is a wide range in performance outcomes, making it challenging to predict how individual children will respond, 3) implantation prior to 3 years of age appears to provide greater benefit than implantation at later ages.

Q: How do children learn to listen with a cochlear implant?

A: Providing a cochlear implant does not create instant benefit. Infants and families need intensive intervention and guidance to teach the child to listen with the device.

Q: What do cochlear implants cost and are they covered by insurance?

A: Insurance companies and Medicaid often provide coverage for cochlear implants. Teams work with each individual family to explore their personal coverage.

Q: What does a cochlear implant sound like?

A: Cochlear implants do not replicate what we hear. They also sound different than how a hearing aid amplifies sounds.

Q: Why should I refer parents to a cochlear implant "team?"

A: Cochlear implant devices and programming strategies are constantly being upgraded. This makes it challenging to stay informed about the latest developments. Cochlear implant teams are likely to be well informed about the most recent developments. In addition, children with implants and families are best served by a multi-disciplinary team that specializes in pre-implant counseling, surgery, and post-implant follow up. Multiple factors influence outcomes, and comprehensive evaluation should guide the course of intervention.

Q: What roles should a pediatrician play if a family is pursuing a cochlear implant for their child?

A: Know the candidacy criteria so that you can accurately respond to parental questions. If a child appears to be a candidate and the family is interested in the development of spoken language for their child's communication, refer the family to an experienced pediatric cochlear implant team. Some children with complex developmental issues may also be candidates for a cochlear implant. Ongoing monitoring of outcomes will assist the family in their follow-up efforts.

In addition to monitoring the child's overall health and anesthesia risks, it is important to ensure that the child has received vaccines to prevent meningitis. In the young children this includes the series and booster of the pneumococcal conjugate vaccine (PCV-7). Older children should also receive the pneumococcal polysaccharide vaccine (PCV-23). Haemophilus influenza type b conjugate (Hib) vaccine should be administered with the same schedule as all children. The tetravalent meningococcal conjugate vaccine should be considered although children with a cochlear implant have not been found to have a higher risk for meningococcal meningitis than children without a cochlear implant.

Aggressive management of middle ear disease is also important in children with implants.

Q: Do some children receive bilateral cochlear implants?

A: Some centers now provide cochlear implants on both ears (bilateral cochlear implantation). The evidence base to validate this approach is still in development, making it challenging for family decision making. Many believe that bilateral cochlear implants will provide the child improved skills for localization and listening in noise.

Susan Wiley, M.D., Cincinnati Children's Hospital Medical Center and
Mary Pat Moeller, Ph.D., Boys Town National Research Hospital