



## **COCHLEAR IMPLANT SURGERY**

The surgical placement of cochlear implants has been performed for over 20 years. Newer implant designs and surgical techniques allow us to place these devices with very few complications and excellent cosmetic results.

The procedure is performed in a day surgery unit with most patients going home the same day. General anesthesia is administered in the operating room, and a small amount of hair behind the ear is shaved. An incision is made in the crease behind the ear, which makes the scar very inconspicuous once it has healed. A pocket is created under the skin to accommodate the receiver-stimulator portion of the implant. This part of the implant has a very flat design so that it will not produce a noticeable deformity. An opening is then made into the air-filled bone called the mastoid. This mastoidectomy allows us to access the inner ear cochlea without disturbing the ear canal or eardrum. A very small opening is made into the cochlea, and the implant electrode is threaded in as far as possible. Most cochleas can accommodate the complete electrode unless meningitis is the cause of deafness, in which case a partial insertion may be necessary. The incision is closed with hidden absorbable stitches that do not require removal. A Velcro cup dressing is placed on the ear and remains in place for 2 days. Patients usually leave the hospital 3 to 4 hours after surgery is completed. Pain is mild-to-moderate for 1 to 2 days and can be controlled with oral pain medicines. Some patients experience imbalance for a few days after surgery, but this resolves spontaneously within the first week. Patients are seen in the office 1 week after surgery to check the incision. Most patients are able to return to work or school at that point. The initial activation of the device and placement of the external equipment is performed 3 weeks after surgery. Once healed there is practically no visible evidence of the implant's presence. The incision can tolerate water 3 days after surgery. Sports, exercises and air travel should be suspended for 3 weeks. After that, there are no activity restrictions.

Cochlear implants are extremely reliable. It is expected that a patient will never need to have their implant replaced. Less than 1% of implants have malfunction that requires replacement. Thankfully, if necessary, implants can be surgically replaced without losing any hearing performance. This also means that in the future patients can be upgraded to newer technology if warranted by the expectation of improved performance.