

# WELCOME TO THE PEDIATRIC COCHLEAR IMPLANT PROGRAM

We are a multidisciplinary team of audiologists, speech language pathologists, and educators. We work with children with severe to profound sensorineural hearing loss who are being evaluated for Cochlear Implantation (CI) and those who have undergone CI.

Families seeking CI for their child must understand the significance of this type of intervention which starts with a thorough CI evaluation. This is done to ensure that the child is an appropriate candidate, and that appropriate follow up is in place.

After a child has received an implant, ongoing care must ensure that a child's hearing is optimized, that spoken language goals are met and that the family is prepared to advocate for the child.

*"Continuing care is second to none."*



# WHAT IS A COCHLEAR IMPLANT?



The cochlear implant is a highly technical medical device designed to bypass damaged parts of the inner ear and send electrical stimulation directly to the auditory nerve, where it is then interpreted as sound by the brain.

The device provides the potential for useful hearing sensation and improved communication ability for people who have a severe to profound sensorineural hearing loss.

Cochlear implants provide an important option for individuals who receive little or no benefit from a conventional hearing aid.

*“Cochlear implants have had a dramatic impact on the lives of deaf people.”*

# HOW DOES A COCHLEAR IMPLANT WORK?



The Cochlear Implant system works in the following way:

1. Sounds are picked up by the small, directional microphone located in the ear level processor.
2. The speech processor filters, analyzes and digitizes the sound into coded signals.
3. The coded signals are sent from the speech processor to the transmitting coil.
4. The transmitting coil sends the coded signals as FM radio signals to the Cochlear Implant under the skin.
5. The Cochlear Implant delivers the appropriate electrical energy to the array of electrodes inserted into the cochlea.
6. The electrodes along the array stimulate the remaining auditory nerve fibers in the cochlea.
7. The resulting electrical sound information is sent through the auditory system to the brain for interpretation.

*"Only after the audiologist showed me how the sound processor worked did I realize how important it was to be functioning at all times. Without it, my child was back to being deaf!"*

# PREPARING FOR A COCHLEAR IMPLANT

Patients who are considering Cochlear Implantation will meet with selected members of our implant team, including:

Surgeons  
Audiologists  
Speech-Language Pathologists  
Early Childhood Educators

Team members conduct a complete evaluation to assess each patient's needs and determine the appropriate way to address those needs. All types of implants are considered. After the evaluation is complete, the team meets to confirm candidacy for Cochlear Implantation. Our specialists then continue to evaluate patients to ensure that their treatment is progressing satisfactorily.

*“When they told us our child was deaf, our world changed. It was only after we met the Cochlear Implant Team that we felt reassured that we were making the right choice for our child”*





More and more, patients are benefiting from bilateral implantation. The advantages are being able to locate the speaker or direction of sound (that requires both ears) and better understanding of words in noise.

It is important to recognize that implantation of the second ear does not double a person's ability to hear. The benefit has been estimated at roughly 20 percent.

However, that 20 percent can be very important in reaching one's full potential in many aspects of life. If you are interested in bilateral implantation, be sure to ask your team about it.

*"There were many issues to consider... we knew we were making the right choice."*



## ● **Surgery**

Surgery is performed at the American Hospital Dubai. The implantation procedure, which lasts two to three hours, requires the use of general anesthesia. Patients arrive for surgery in the morning and usually go home the next day. They then return to the out patient clinic for medical follow-up.

## ● **Mapping Sessions**

The Audiologist uses a special programming technique to maximize auditory functioning. Patients are seen about four weeks after surgery to activate the implant. The initial visit lasts two to three hours. A second visit is usually scheduled within a week.

Speech perception errors are assessed during each mapping session and maps are modified accordingly with the goal that every phoneme will be heard. This offers the best possibility of optimal hearing with the Cochlear Implant. Additional mapping sessions are scheduled on a quarterly basis or as needed.

## ● **Post operative speech and language therapy**

Implant recipients experience the best results when they participate in post-operative therapy. For children, therapy is scheduled as soon as their sound processor is programmed.

Speech, language and auditory therapy are included in the program to help the child learn to use hearing for language reception and perception of speech and to facilitate oral communication.

*“Switch on was the scariest and most joyous event of my whole life.”*

## OUR OBJECTIVES

- To help adults and children with severe/profound hearing impairment reach their potential using the Cochlear Implant and other related technologies to facilitate integration into a hearing & speaking world.
- Maintain world class medical and surgical procedures for Cochlear Implantation and other technologies.
- To provide children, adults and their families with superior audiological care, assessment and management services.
- Provide quality habilitation and ongoing management to maximize the benefits of Cochlear Implantation.

*"My son turned two last July and is now no different from any other two year old. He appreciates his old toys better than he ever did because he is able to hear the rattle, and the poor toys are getting a real beating now!!"*





**Dr. Muaaz Tarabichi, FACS - ENT Surgeon**

American Board Certified Ear, Nose and Throat Specialist. Dr. Muaaz Tarabichi was honored by the American Academy of Ear, Nose and Throat for excellence in basic research. Dr. Tarabichi serves on the Editorial Board of "The Laryngoscope". He has more than 20 years of experience in the USA and the UAE.



**Ms. Lubaina Sharafally, M.A., CCC-A - Audiologist**

Ms Sharafally has a Masters degree from the University of Kansas Medical Center, Kansas City - USA and has been certified by the American Speech Language Hearing Association since 1990. She has obtained intensive training at many major American medical centers and hospitals, and for many years was associated with the Massachusetts Eye and Ear Infirmary in Boston, MA, USA.



**Dr. Rana Batterjee, Au.D., CCC-A, ASHA-F, F-AAA - Audiologist**

Dr. Batterjee is the Director of the Cochlear Implant center at the American Hospital Dubai. She received a doctorate in Audiology from the University of Florida and is certified by the American Speech Language Hearing Association. In addition she is certified by the American Board of Audiology and is a fellow member of the American Academy of Audiology.



**Ms. Nadine Ewanchyshyn, M.S., S-LP(C), CCC-SLP - Speech-Language Pathologist**

Ms Ewanchyshyn has a Bachelor degree in Teaching in Early Childhood Education followed by a Master of Science degree in Communication Disorders. She is certified by the American Speech Language Hearing Association and the Canadian Association of Speech Language Pathologists and Audiologists and has worked in Canada, Bermuda and Dubai.



**Ms. Ghada Ajamieh - Speech-Language Pathologist**

Ms. Ajamieh has a Bachelor degree in Linguistics Science and also holds a Master's degree in Speech and Language Therapy from the University of Jordan. She has over eight years experience in evaluating speech and language disorders in children and adults in addition to providing therapy.



**Ms. Maha Salem - Early Childhood Educator**

Ms. Salem holds a degree in Early Childhood Education in Montessori Teaching Methods and is certified for Teaching English as a Foreign Language (TEFL). She has worked in early childhood education in the U.S.A. and currently is an early childhood advisor at the Sheikh Mohammed Centre for Cultural Understanding.

*"From silence to life...we will be with you all the way!"*

**Myth: Surgical risks for cochlear implantation are high.**

**Fact:** Risk is inherent in any surgery requiring general anesthesia. However, the surgical risks for Cochlear Implantation are minimal and the majority of patients require only a one-day hospital stay and have no surgical complications.

**Myth: As new & improved technology becomes available, additional surgeries are required to take advantage of the new technology.**

**Fact:** The surgically implanted unit is designed to last a lifetime. The externally worn speech processor, which is responsible for coding the speech and sending the information to the internal unit, is software-dependent and can readily accept new and improved speech-coding technology as it becomes available. Additionally, the speech processor may be upgraded as technology improves.

**Myth: Cochlear implants will help all cases of deafness, young and old.**

**Fact:** Implants are very effective in very young children who were born deaf or old people who had normal hearing during much of their life. Implants do not usually help children older than seven years of age who were born deaf and never developed any speech.

**Myth: Once I get the surgery over for my child, I do not have to worry about anything else.**

**Fact:** The surgery represent only the first step in a long journey towards making sure that the child can hear and speak. It take tremendous family commitment over the following 3 to 5 years to get to the desired result.

**Myth: Children outgrow the internal device and require an additional surgery after their bodies grow.**

**Fact:** The cochlea is fully formed at birth and the skull structures have achieved almost full growth by the age of two. The electrode array is designed to accommodate the skull growth in children.



**Myth: It's better to wait for new technology to become available before getting a Cochlear Implant.**

**Fact:** The design of the surgically implanted receiver and electrode array has changed relatively little during the history of Cochlear Implants. The external device can be changed at any time and much of the change in Cochlear Implants has been in coding strategies that are handled by the external device.

The longer the brain goes without getting sound through the ear, the less it is able to use the sound as it comes in through the implant. In children, the ear that does not hear for the first five years will not be able to recognize speech for the rest of the child's life.

**Myth: Implant users can only identify environmental noises, not speech.**

**Fact:** Cochlear Implants provide a wide range of sound information and performance on speech perception testing does vary among individuals; however, with time and appropriate rehabilitation, most users understand more speech than they did with their hearing aids and many are able to communicate by regular telephone or enjoy music!

**Myth: Implant users cannot swim, shower, or participate in sports.**

**Fact:** When NOT wearing the EXTERNAL equipment, users can swim, shower, and participate in any number of water activities. The only restriction placed on implant users relates to skydiving and scuba diving as the significant air-pressure changes encountered in these activities is not advisable.

Participation in all other athletic pursuits is unrestricted, though protective head gear is always wise.

**Myth: Cochlear Implants are new and experimental devices.**

**Fact:** Cochlear Implants have been around since the 1970's, and several devices are currently FDA-approved for use in children and adults.

