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Introducing the first splash and sweat-resistant speech processor.

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**Nucleus recipient, age 59**
David received his Nucleus implant 4 years ago.
**"Using the phone at home is a kick..."**
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**Kelin M.**
**Nucleus recipient, age 9**
Kelin received her Nucleus implant at age 4.
**"She can now sing and play flute and**

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Cochlear continues to lead the industry in Cochlear Implant Reliability.

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## Meet Robbie Barnes

"Oklahoma!" belted out 12-year-old Robbie Barnes while participating in the chorus of his school's musical production.

Watching him sing with so much feeling, no bystander would be surprised to learn he truly enjoys music. Besides singing, he loves playing the recorder, violin, and piano. But to those who know him, Robbie's ability to enjoy music is nothing short of amazing.

Robbie Barnes was born deaf. Yet for most of his life, Robbie has been able to hear. That's because he has a Nucleus cochlear implant.

Robbie's deafness was diagnosed at 13 months. Two months later, he was fitted with hearing aides. He received weekly speech therapy and auditory-verbal therapy, and was enrolled in an early intervention program. At first, he made progress, but hit a plateau around his third birthday. That's when his parents began to investigate the options for a cochlear implant.

They soon learned they had a choice in brands for cochlear implants. After exploring the options, their decision came down to customer service.

**MeetRobbie Barnes**

**Residence**
Decatur, Alabama

**Birthdate**
Friday, May 01, 1992

**Age at onset**
Birth

**Age When Implanted**

**Hearing Loss Type**

**Duration of Loss**
0-5 years

**Etiology**
Congenital / Heredity

Do you have a story to tell?
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"We were concerned about the ceramic casing of some implants, knowing how active young boys could be. Then we discovered that Cochlear's Nucleus system has a silicone casing. The durability of the silicone casing was appealing, but there was a problem. We were concerned about Robbie's allergy to silicone," says Robbie's mom.

Before going forward with an implant, [Name] needed to know whether Robbie would have an adverse reaction to the silicone coating from Nucleus implant's casing. To find out, Cochlear sent several samples of the silicone material to Robbie's doctor. The doctor determined Robbie would not have a problem with the casing.

"We were very impressed when Cochlear took the time to address our son`s allergy. That customer service was the deciding factor. We went with the Nucleus system."

As the years have gone by, Robbie has upgraded his speech processor, and now uses the ESPrit 3G for the Nucleus 22. "He likes its style, how inconspicuous it is, and the freedom from the long cord going to the body processor."

"I have to say, we've been impressed with Cochlear's commitment to offering updates as technology improves. It shows that customer service is still Cochlear's main concern."

When asked what she likes most about Robbie's Nucleus implant, she says, "There are no language barriers holding him back from relationships with his family. He is active in sports, Cub

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Scouts, and our church, and carries himself with confidence and a joy of life. He is able to follow his interests, whether that is a Civil War reenactment, Space Camp, or musical performance. The implant has allowed Robbie to be the child he was meant to be."

Document last modified: Wednesday, December 07, 2005

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## Meet Ruth Fox

Music is back into Ruth Fox's life.

Although she was born with a significant hearing loss, music has always been the center of her life. At age 8, Ruth began studying the violin. Playing for hours a day, she soon became an accomplished violinist. As a young adult, she played solo or in chamber and orchestral performances.

"Each day I spent hours with my violin," Ruth says. "I could hear the sound of my violin better than the voices of the people around me, so the violin became my best friend."

Ruth's hearing loss was the result of a rare form of Muscular Dystrophy called Mitochondrial Myopathy. Initially, Ruth's parents chose not to let her wear hearing aids. With her hearing limited to very low frequency sounds, she learned to speak by lip reading. When she turned 17, one of her teachers finally convinced Ruth's parents to let her have hearing aids.

But as time passed, Ruth's limited hearing deteriorated, and hearing aids were of little use.

"I was in denial about the seriousness of my hearing loss, and went on to receive a bachelor of music degree in performance on the violin. Soon after I graduated from college, the remainder of my usable hearing disappeared. I had to put my violin away into its case."

**MeetRuth Fox**

**Residence**
Muskegon, Michigan

**Birthdate**
Sunday, February 15, 1948

**Age at onset**
Birth

**Age When Implanted**

**Hearing Loss Type**
Progressive loss before age 18

**Duration of Loss**
Greater than 20 years

Do you have a story to tell?
Tell Us Your Story

Yet many years later, Ruth was once again able to take out her violin and perform solo and in an orchestra. At age 39, Ruth had received a cochlear implant, which gave back her hearing—and her music.

For Ruth, hearing music with a cochlear implant has been a new and different experience. "When I wore hearing aids, I could hear the other instruments in the orchestra only when I sat in the midst of them on stage. But if I sat in the audience, I was too far away to hear them." Now Ruth can hear and frequently identify music and instruments as she sits in the audience. She gets enough auditory information to identify the sound of each instrument.

"My soul sings again with the sound of music," says Ruth. "Even though my active participation in music performance has ended, because the disorder that robbed me of my hearing has also taken my muscle strength and endurance, I can enjoy listening to the performances of others."

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## Meet Cathy Bell

Even after receiving degrees in laboratory and computer science, Cathy Bell found it hard to find and hold down a job. Her hearing loss was making life difficult. A cochlear implant made all the difference.

Cathy was born with a hearing loss from nerve damage in both ears. When she turned three, Cathy was diagnosed with a moderately severe loss and was fitted with hearing aids in both ears. But as she got older, Cathy's hearing deteriorated. Eventually she had a profound hearing loss.

"I went to regular schools and found school easy as long as I had my mother's help and did lots of work at home. I went to college and graduated with a bachelor's degree in laboratory science. It was tough getting through school with my hearing difficulties. At one point I quit school and later went back as a part-time student. After graduation, I worked as a laboratory technician for about ten years at various companies. But I was never able to hold a job for more than three years. Tired of that, I went back to school to upgrade my skills. I graduated with a degree in computer science. Still, it took me two years to find permanent work in the computer field."

Then, in her early forties, Cathy received an implant, which she believes has improved her chances of retaining work.

"I think my work potential has improved. My score on the CNC word test was 42%; scores on the HINT sentences were above 80%. Now, I'm employed at a bank and hopefully it will continue to work out well."

**MeetCathy Bell**

**Residence**
Ontario

**Birthdate**
Monday, October 21, 1957

**Age at onset**
Birth

**Age When Implanted**
44

**Hearing Loss Type**
Progressive loss before age 18

**Duration of Loss**
6-10 years

**Etiology**
Congenital / Heredity

Do you have a story to tell?
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## Meet Cindy Campbell

When Cindy Campbell received her cochlear implant twenty years ago, it was considered experimental. Only a handful before her had gone through the procedure. Although everyone had high hopes for the implant's success, no one knew for sure what the future would hold.

Cindy began losing her hearing when she was a child. "At age four, after having the mumps, I had periods of total hearing loss," Cindy explains. "When I turned 13, I totally lost the hearing in my right ear. Then fourteen years later, at age 27, I became completely deaf in both ears."

Because her deafness was too severe, a hearing aid didn't work. Cindy needed something much more advanced. She found out about research being done on cochlear implants… [how?]

Even though "going first" was a bit risky, a cochlear implant was Cindy's best chance of ever hearing again. If she could get any hearing at all, Cindy felt it would be worth the risk.

And it was worth it. The implant was a success.

"The very first time I was hooked up I was able to hear," Cindy happily recalls.

**MeetCindy Campbell**

**Residence**
Neotsu, Oregon

**Birthdate**
Thursday, January 27, 1955

**Age at onset**
4

**Age When Implanted**

**Hearing Loss Type**
Progressive loss before age 18

**Duration of Loss**
Greater than 20 years

Do you have a story to tell?
Tell Us Your Story

In fact, her implant "experiment" was such a success that Cindy testified before the Food and Drug Administration (FDA) in 1985. Her newfound hearing became evidence that helped moved the implant`s status from experimental to approved for adults.

Today, Cindy functions independently as a successful professional in the hearing world. She says, "Before the implant I could only work with other signing people, in occupations that involved signing. Now I have my own business. I can work with anyone, anywhere, and can use the telephone unaided."

When not at work, Cindy enjoys listening to music and to books on tape. In a noisy environment, she's able to understand what people are saying with the help of lip-reading. If it's quieter, all she has to do is listen.

Almost two decades ago, Cindy helped blaze a trail that many other severely-to-profoundly deaf adults and children have since followed. When asked to look back over her twenty-year implant journey, Cindy says the most memorable experience was meeting Graeme Clark, the inventor of her cochlear implant.

"When I was testifying before the FDA, I met Graeme. But I couldn't think of anything intelligent to say to him except, 'Thank you.' What do you say to someone who has come to your rescue? That is exactly what he did. He and his implant invention rescued me."

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## Meet Deb Silverman

The sky`s the limit, but being deaf was preventing Deb Silverman from getting there. She hoped a cochlear implant would open some doors.

Deb was born with a hereditary, sensorineural hearing loss and fitted with hearing aides at age three. Then, in the late 1960s, she attended pubic elementary school. But after failing high school English because she couldn't follow along with her classmates as they listened to Shakespeare, Deb was transferred to a special education program outside of her school district.

"The bus stop for the special education bus was right next to the bus stop for 'normal kids.' I was stigmatized beyond belief," Deb recalls with sadness. "The worse thing that ever happened to me was when a special ed teacher told me I would never amount to anything. I had big dreams to become an architect. I never understood how I ended up in the basement of an old school studying alongside people with severe physical, intellectual, mental, and emotional limitations. I was given assignments well below my grade level."

**MeetDeb Silverman**

**Residence**
Brunswick, Maine

**Birthdate**
Saturday, May 26, 1962

**Age at onset**
Birth

**Age When Implanted**

**Hearing Loss Type**

**Duration of Loss**
Greater than 20 years

**Etiology**
Congenital / Heredity

Do you have a story to tell?
Tell Us Your Story

Deb graduated high school and went to on college, where she was stigmatized once again. She was lured to the University of Arizona to study architecture with the promise of having note takers and interpreters. Then during her second year, she was told that the school would not retrofit their architectural history program for a deaf person. She was given a choice of either transferring to another program or quitting. Devastated, she quit. Years later, Deb changed career goals and returned to college to complete an undergraduate degree in engineering and master's degrees in business administration and organizational leadership.

"I'm ready to harvest my education. I am ready to get a life. I'm done focusing on school and using that as a crutch to pass time." Deb says she's ready to get a cochlear implant.

"I admit it. I'm scared. But I've read the remarkable successes of those with an implant. This has given me hope and courage. With two masters degrees, I am unable to advance professionally. I'm stuck with no place to grow. Ten years ago I was opposed to the implant saying, 'I am who I am.' But that attitude doesn't work if you have dreams and goals that require hearing. With an implant many doors will open, I hope."

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# Enjoying music

Getting an implant is an exciting time. There's so much to look forward to. It's no surprise that enjoying music often tops the list of things new cochlear implant recipients want to do.

Some will enjoy music right away. In some cases, though, it may require a bit more work. Some find the initial transmission of musical sound wasn't what was expected. Others find it difficult to recognize familiar songs at first.

Fortunately, there are ways you can improve your music listening experience. Often it just takes time and practice. With a bit of patience and willingness, you'll have a much greater chance of enjoying, perceiving and participating in music.

## What you can do

### Choose from these topics

- **Developing and practicing music listening skills**
- **Tips for getting the best musical sound**

# Enjoying music: practice tips

**Developing and practicing music listening skills**
It's clear that practice and repeated exposure to musical sounds play an important role in determining how well you'll be able to enjoy music. The single biggest determinant of success will be your attitude. It helps to remember to:

- Have realistic expectations
- Be willing to try different methods for developing your listening skills
- Be patient. The rewards will be well worth the time and effort
- PRACTICE often. Recipients say that music starts to sound better after repeated listening

## Start with familiar music

Start by listening to familiar songs, such as nursery rhymes, or those with a simple, repetitive melody and beat. These are usually easiest to follow and understand. The more limited your experience with music, the simpler the songs should be when you start:

- Practice listening to sound effects until you can identify each sound.
- Look for musical selections that feature a single musical instrument or singing voice.
- Listen to music that is familiar to you, or you remember from your past.
- Have the lyrics in front of you.
- Use a keyboard to practice with simple tunes and with recognizing pitches.
- Have a family member or friend mouth the words of a song or use hand gestures to indicate pitch changes.
- Try to view the performer's face (on stage, TV, video, etc.) so that you can use visual cues to assist your understanding.

After you've mastered some of the above suggestions, gradually move to more complicated pieces, including duets, quartets or orchestras.

# Participating in sports

Part of the cochlear implant experience includes exploring the world and the opportunities it offers. For many, this includes participating in a wide variety of activites and sports. We have compiled a few ideas so that you can experience full participation, while keeping your cochlear implant components in top working condition.

## Tips for participating in sports

### Playing tennis

Wear a baseball cap or sun visor to help keep your coil on and protect the processor. Frequently wipe off your processor with a dry towel.

### Biking

For protection, always wear a helmet to protect your head from impact and reduce wind noise. To help hold your ear-level equipment in place, try using a sweatband or thin cap with a helmet. Because a helmet limits how much you hear, take additional safety precautions such as using a lapel microphone, wearing a fluorescent vest or attaching a mirror to your bike or helmet.

Helpful Hint
If you have an autosensitivity program on your processor, use it when traffic noise becomes too loud. ESPrit 3G users who have “audio mixing” enabled can use the ‘T’ setting to reduce the sensitivity of the microphone.

Helpful Hint
Don’t adjust your speech processor while biking. First stop in a safe place, and then adjust it.

### Snow skiing

While skiing, wear your body-worn speech processor in a harness or pouch under layers of clothing to keep it warm and to avoid damaging it if you fall.

Wear a thin breathable cap under your helmet. Avoid hats that trap moisture as this can affect the microphone. A thin stocking cap will ease the helmet over your coil and BTE processor or microphone and prevent them from being knocked off.

### Boating

When you wear a body-worn processor while rafting, sailing or fishing, put the processor in a zip-lock plastic bag. If you use the small, snack-size zip-lock bags, put the processor in the bag, and leave the cable outside of the bag. Zip up the bag as close to the cable as possible. If you use a large zip-lock bag, place the processor in it with the bag’s opening facing down. This will allow any moisture that gets inside to drip out. It will also prevent moisture from running along the cable into the processor. Use double bags for extra protection.

### Swimming or water activities

You can swim and participate in water sports, as long as you do not wear your processor and headset in the water. Consider leaving your headset and processor at home when you go to a lake, pool or beach. The processor is especially vulnerable to sand, water, sunlight and high temperatures.

For SCUBA divers, the internal implant was informally tested to withstand pressure at a depth of 25 meters (82 feet) underwater. However, it is

recommended that you check with your surgeon or clinician before participating in a dive. There may be other medical conditions that you will need to consider which could make diving unsafe for you.

If you do take your headset and processor with you, remember to take them off before you go into the water. Also, take these additional precautions:

- Place your speech processor in a plastic zip-lock bag, and seal it tightly.
- Keep your processor away from direct sunlight. Don't leave it in a hot car.
- Dry your hair well before you put on your headset and processor. Wet hair can damage these components.