

# Bone Conduction Implants

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## What are bone conduction implants?

Bone conduction implants are U.S. Food and Drug Administration (FDA)-cleared, surgically-implanted medical devices that treat hearing loss. Bone conduction implants use your natural ability to conduct sound to bypass the damaged part of your ear, sending sound directly to the inner ear. Cochlear's bone conduction implant system is called the Baha® System.

## Who do bone conduction implants help?

Bone conduction implants help those with single-sided deafness (SSD), conductive hearing loss or mixed hearing loss. It can be a solution for those facing hearing loss from Treacher Collins syndrome, Goldenhar syndrome, chronic ear infections and middle ear issues, microtia and atresia, Down syndrome and acoustic neuroma.

Children as young as 5 years of age and adults of all ages can be candidates for bone conduction implants. Children of any age can be candidates for the non-surgical options of using the Baha Sound Processor on the Baha SoundArc or Baha Softband.

## Why are bone conduction hearing solutions significant?

The impact of hearing loss is substantial around the world and in the United States. Hearing loss affects 466 million people worldwide and almost 50 million Americans.<sup>1,2</sup> By 2050, it is estimated that over 900 million people – one in every ten people – will have disabling hearing loss across the globe.<sup>1</sup>

Developed 40 years ago, bone conduction implants are a FDA-cleared, proven medical treatment to help those with SSD, conductive hearing loss or mixed hearing loss. While a hearing aid's only ability is to push sound through the damaged part of the ear, the Baha System utilizes the body's natural ability to conduct sound to skip over the damaged parts of the outer and middle ear, sending clear, crisp sound directly to the inner ear.<sup>3</sup>

## How can bone conduction implants help?

The Baha System has improved the lives of tens of thousands of people around the world of all ages.

Whether someone suddenly couldn't hear on one side, they've gone through life struggling with hearing aids, or they've learned to cope with hearing loss without knowing there was a solution available for their loss, if one has a working inner ear (*cochlea*), the Baha System is designed to provide an immediate, positive impact on how well someone hears and ultimately communicates.

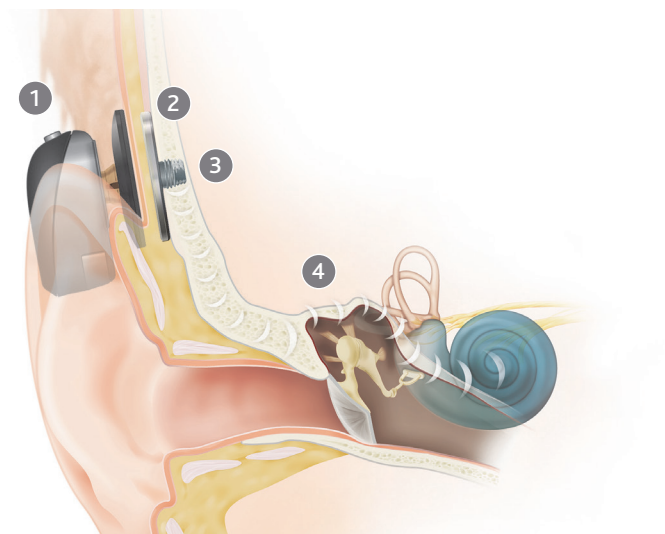
For children, because learning to communicate begins early, getting access to sound through the Baha solution can provide them with the hearing performance they need to facilitate language development on par with their hearing peers.<sup>4</sup>

## How does the Baha System work?

There are three components to the Baha System. The implant, an abutment or magnetic attachment and a sound processor.

**Cochlear offers two types of Baha attachment systems to fit a person's hearing loss needs:**

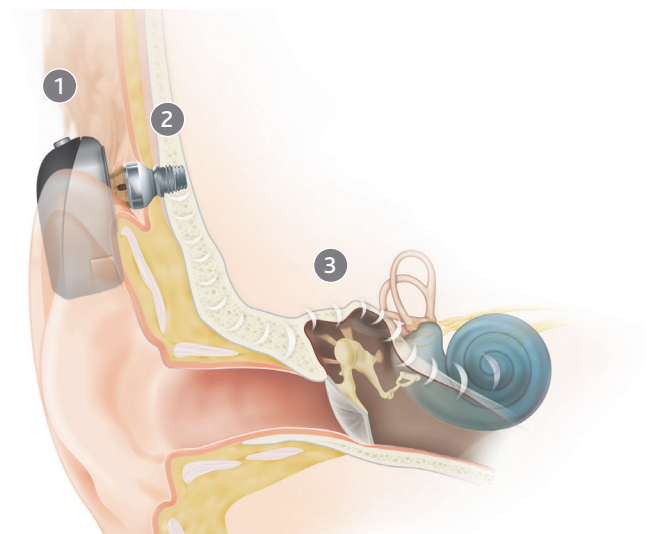
**The Baha Attract System**, a magnetic connection



#### **HOW THE BAHHA ATTRACT SYSTEM WORKS**

- 1** The sound processor picks up sound vibrations from the environment.
- 2** The sound processor passes the sound vibrations to the attached external magnet that attracts to the internal magnet.
- 3** The sound vibrations are transferred through the magnetic attachment to the small titanium implant inserted in the bone behind the ear.
- 4** The sound vibrations are then sent directly through the bone to the inner ear (cochlea) when they are converted into electrical impulses by tiny hair cells inside the cochlea. These impulses travel to the brain, allowing you to perceive sound naturally.

**The Baha Connect System**, an abutment connection



#### **HOW THE BAHHA CONNECT SYSTEM WORKS**

- 1** The sound processor picks up sound vibrations from the environment.
- 2** The sound vibrations are transferred through an abutment to a small titanium implant inserted in the bone behind the ear.
- 3** The sound vibrations are then sent directly through the bone to the inner ear (cochlea) where they are converted into electrical impulses by tiny hair cells inside the cochlea. These impulses travel to the brain, allowing you to perceive sound naturally.

**Cochlear offers three Baha sound processor options to fit a person's degree of hearing loss:**



**The Baha 5 Sound Processor**  
Fitting range up to 45dB SNHL\*



**The Baha 5 Power Sound Processor**  
Fitting range up to 55dB SNHL



**The Baha 5 SuperPower Sound Processor**  
Fitting range up to 65dB SNHL

## Is the Baha System covered by insurance?

Unlike hearing aids, bone conduction implants are covered by Medicare, many insurance plans and typically Medicaid.<sup>†</sup>

## Additional facts about the Baha products:

- The Baha 5 Sound Processor is the industry's smallest bone conduction sound processor.<sup>5</sup>
- The Baha 5 Sound Processor is the implantable hearing industry's first and only Made for iPhone\*\* hearing device.
- The Baha 5 Power and Baha 5 SuperPower Sound Processors are created for those who need additional amplification because of a greater degree of hearing loss.
- Cochlear's Baha 5 SuperPower Sound Processor is the industry's first behind-the-ear bone conduction solution with a fitting range up to 65 dB SNHL.<sup>6</sup>
- The entire portfolio of Baha 5 sound processors:
  - Feature Made for iPhone technology, which provides direct-to-device wireless streaming and control through a direct connection to iPhone, iPad® and iPod touch® devices for phone calls, FaceTime® calls and music in high-quality stereo sound, with no intermediary device needed;
  - Feature SmartSound® iQ technology, which allows the sound processor to automatically adjust to different listening environments, providing a seamless experience to the user;
  - Support Bluetooth® Smart technology;
  - Provide advanced control, further personalization and support directly from iPhone, iPad and iPod touch to the sound processor and wireless accessories through the Baha 5 Smart App,<sup>\*\*\*</sup> allowing a user to quickly and easily change programs, adjust volume, modify treble and bass, save custom settings for favorite locations and receive help finding a sound processor if misplaced; and
  - Have access to Cochlear True Wireless™ accessories, allowing users to stream conversation, phone calls, music and television programs directly to their sound processor.
- The Baha 5 Smart App is the first Smart App for bone conduction devices.

## Where do I learn more about the Baha System?

Visit [www.Cochlear.com/US/BahaSystem](http://www.Cochlear.com/US/BahaSystem).

1. Deafness and hearing loss fact sheet [Internet]. World Health Organization; c2018 [cited 5 March 2018]. Available from: <http://www.who.int/mediacentre/factsheets/fs300/en/>.
  2. Listen Up! Protect Your Hearing (infographic) [Internet]. National Institute on Deafness and Other Communication Disorders; c2017 [cited 5 March 2018]. Available from: <https://www.nidcd.nih.gov/health/listen-infographic>.
  3. Gustafsson J. BCDrive performance vs. conventional bone conduction transducer. Cochlear Bone Anchored Solutions AB, 629908, 2015.
  4. Hol MK, Cremers CW, Coppens-Schellekens W, Snik AF. The Baha Softband. A new treatment for young children with bilateral congenital aural atresia. Int J Pediatr Otorhinolaryngol. 2005;69:973-80.
  5. Flynn MC. Smart and Small –innovative technologies behind the Cochlear Baha 5 Sound Processor. Cochlear Bone Anchored Solutions AB, 629761, 2015.
  6. Norrman, J, Review of fitting ranges. Cochlear Bone Anchored Solutions AB, D773528, 2015.
- \* Sensorineural hearing level (SNHL)
- \*\* Cochlear Baha 5 sound processors are compatible with iPhone 8 Plus, iPhone 8, iPhone 7 Plus, iPhone 7, iPhone 6s Plus, iPhone 6s, iPhone 6 Plus, iPhone 6, iPhone SE, iPhone 5s, iPhone 5c, iPhone 5, iPad Pro (12.9 inch), iPad Pro (9.7 inch), iPad Air 2, iPad Air, iPad mini 4, iPad mini 3, iPad mini 2, iPad mini, iPad (4th generation), iPod touch (6th generation) and iPod touch (5th generation) using iOS 7 or later.
- \*\*\* The Baha 5 Smart App works together with all Cochlear Baha 5 sound processors. It is verified on iPhone, iPad and iPod touch running iOS 9.1 and Samsung Galaxy S6 and S7 running Android OS 5.0 Lollipop. For more detailed device compatibility see the Baha 5 Smart App description on App Store or Google Play.
- † Coverage for adult Medicaid recipients varies according to state specific guidelines.
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