

Your natural pathway to hearing

Cochlear™ Baha®



Hear now. And always





Dear Reader,

This guide is designed to support you and your family as you consider a Cochlear™ Baha® bone conduction implant system. It will help you understand how hearing works and answer some questions you may have about getting, and living with, Baha.

The Baha devices Cochlear produces today were pioneered in Sweden in the 1970s. The advances we have delivered in hearing performance mean that over 90,000 adults and children using Cochlear Baha can now live a full and productive life. No one has more experience with bone conduction implants than us and that's why Cochlear is the first choice for health professionals and patients worldwide. We hope you choose us too.

Cochlear is dedicated to researching, developing and applying solutions that can offer the gift of hearing. We will continue to do so with the same level of commitment in the future.

Once you have read through this information, we recommend you make an appointment with an audiology clinic that is experienced with Baha. You can find your nearest clinic, more information and Baha recipient stories at www.cochlear.com/au. Please feel free to contact us directly if you would like more information about the technology, services and support we can offer throughout you or your child's hearing life.

We wish you all the best on your journey to better hearing.

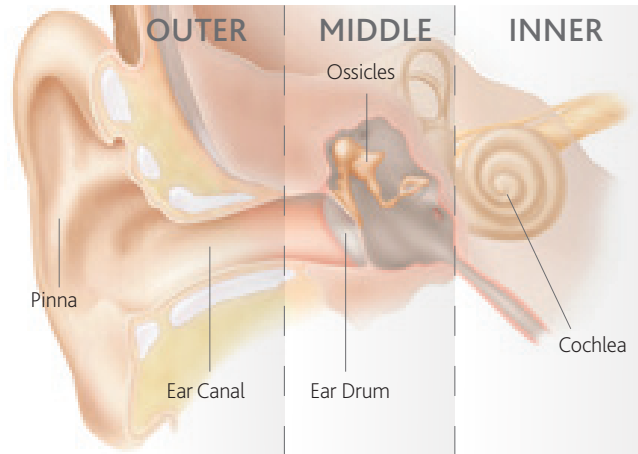
Kind regards,

A handwritten signature in black ink, appearing to read 'Shaun Hand'.

Shaun Hand
General Manager Australia & New Zealand
Cochlear Limited

Your hearing health

Let's take a look inside the ear



The ear is made up of three sections:

Outer

The outer ear consists of the pinna and the ear canal. The pinna is your external ear, which captures sound and funnels it into the ear canal.

Middle

The middle ear consists of the eardrum membrane and an air filled cavity containing three small bones called ossicles. The individual ossicles are the hammer (malleus), anvil (incus) and stirrup (stapes).

Inner

The inner ear consists of a complicated series of channels and chambers. For hearing, the important organ is the spiral shaped cochlea. Roughly the size of a pea, the cochlea contains fluid and about 30,000 tiny hair cells. Each hair cell is connected to the auditory nerve.

How we hear naturally

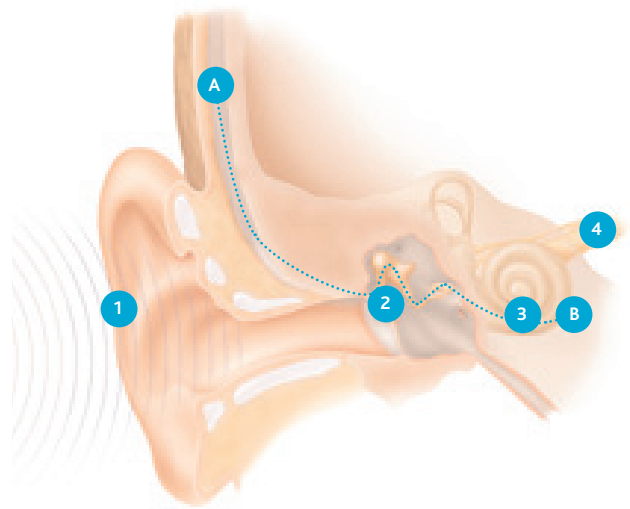
Sound is naturally delivered via two ways:

Air conduction

1. Soundwaves move through the ear canal and strike the ear drum
2. The eardrum vibrates, transferring its movement to the small bones inside the middle ear (the ossicles)
3. The vibration of the ossicles causes fluid motion in the inner ear (the cochlea) stimulating the hair cells inside which send an electrical signal along the auditory nerve to the brain
4. We then hear sound

Bone conduction

- A. Sound vibrations are picked up by the skull and stimulate the cochlea directly as it is encased in bone
- B. The vibration of the skull causes fluid motion in the inner ear (the cochlea) stimulating the hair cells inside which send an electrical signal along the auditory nerve to the brain. We then hear sound



Your audiogram and what it means

As part of the hearing tests done for you or your child, you'll be given an audiogram, which shows the hearing profiles for the left and right ears.

The audiogram plots the usable hearing and hearing loss for each ear. Your audiologist will test different sounds one frequency at a time and plot the softest level at which the frequency can be heard. The closer the marks are to the top of the graph, the quieter the sound that can be heard in that frequency band.

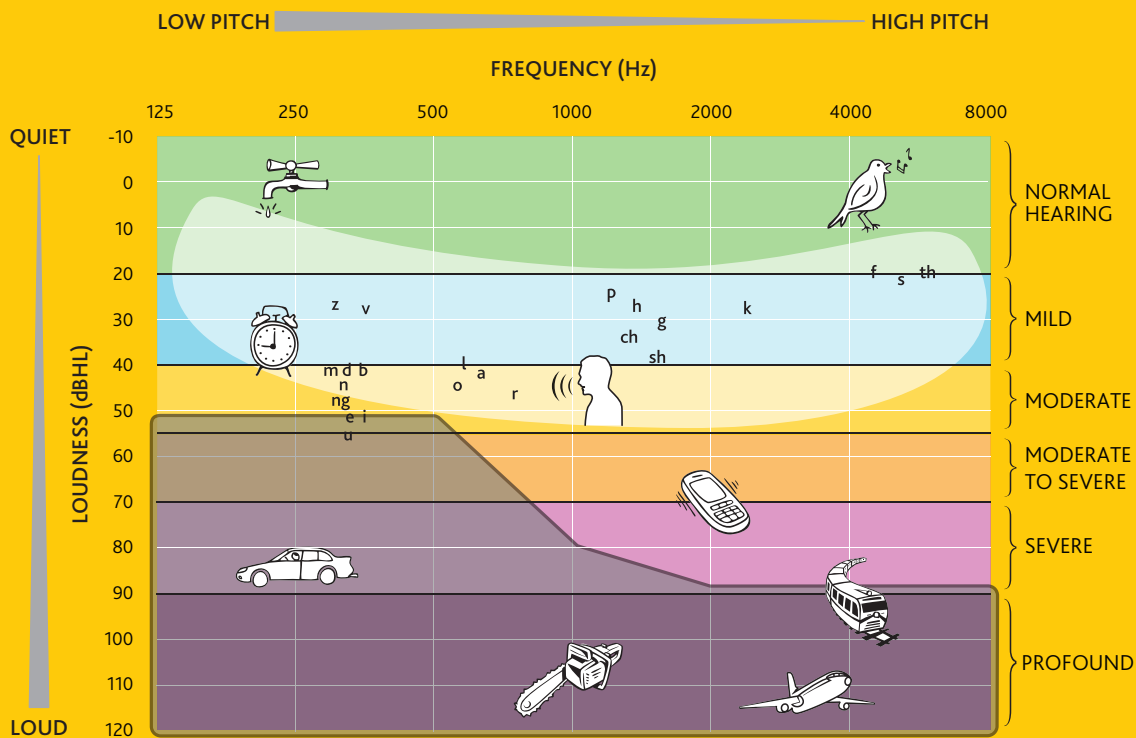
The most important pitches for speech fall into the lightly shaded area, which we call the 'speech banana'.

Air and Bone Conduction Tests

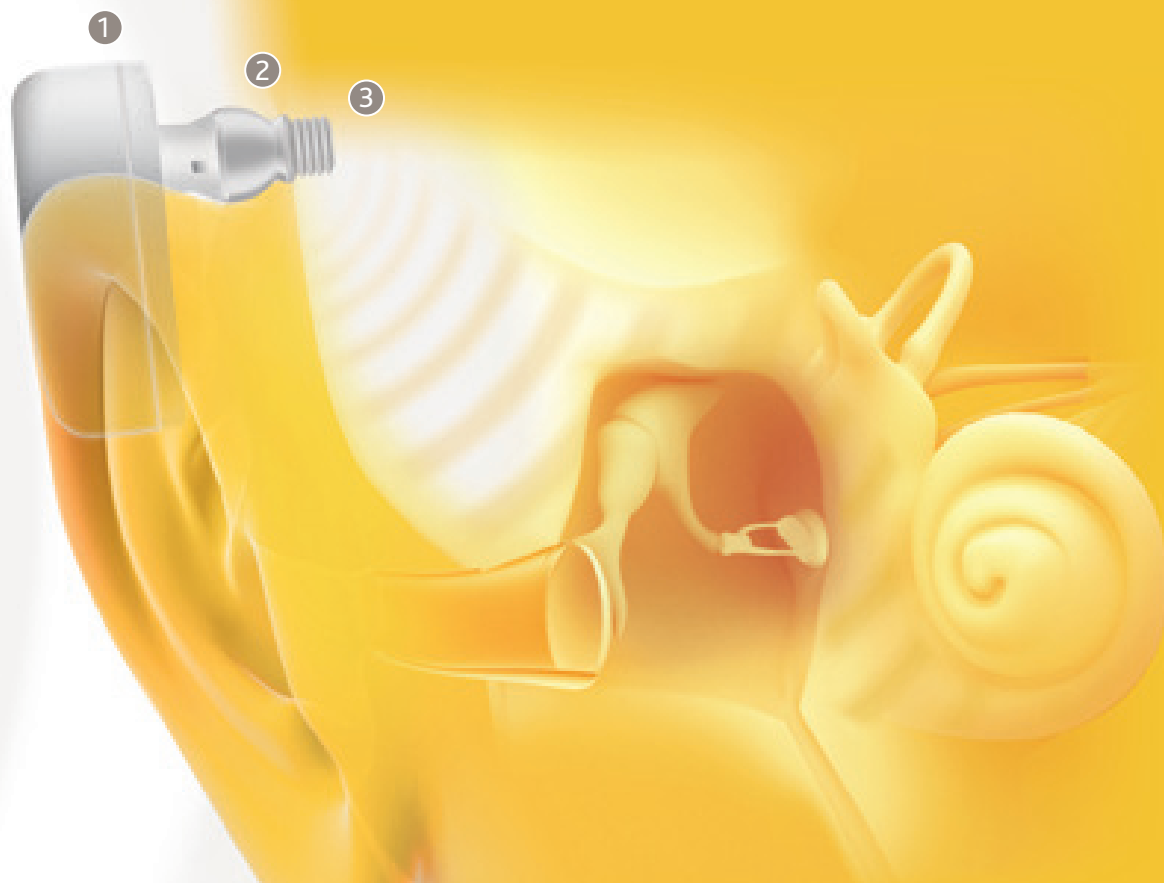
Both the air and bone conduction of each ear will also be tested to see which part of the hearing system isn't working properly.

The Air Conduction Test checks the natural hearing pathway, where sound travels through the air into the outer and middle ear to reach the cochlea.

The Bone Conduction Test checks the function of the cochlea. A metal band with an attachment called a bone oscillator is placed against the bone behind the ear. Sounds are sent directly to the cochlea through the bone bypassing the outer and middle ear to test the function of the cochlea.



How a Baha system works



Clear natural sound

Baha was the world's first implantable bone conduction hearing system.

Baha makes use of your body's natural ability to send sound via bone directly to your functioning inner ear (cochlea), bypassing hearing roadblocks which may exist in the outer or middle ear.

After a straightforward surgical procedure, the bone integrates with the small titanium implant in a process known as osseointegration. This same process has been used in dental implants as well as Baha with great success for more than 30 years.



There are three components to the Baha System:

① **SOUND PROCESSOR**
The processor detects sound and transforms it into vibrations.



② **CONNECTING ABUTMENT**
The connecting abutment receives the amplified vibrations and transfers them to your osseointegrated titanium implant.



③ **TITANIUM IMPLANT**
Using bone conduction, the titanium implant transfers sound vibrations directly to the hearing nerve via your cochlea.

Actual size

Is Baha right for me?



Experience Baha!

The Baha sound processor can be tested before the operation. Ask your Baha hearing health professional for a demonstration and experience the unique sound of Baha!

Baha is the preferred treatment for children and adults with conductive hearing loss, mixed hearing loss or single-sided sensorineural deafness.^{1,2,3,4} If you suffer from any of these types of hearing loss, you may be a perfect candidate for Baha.

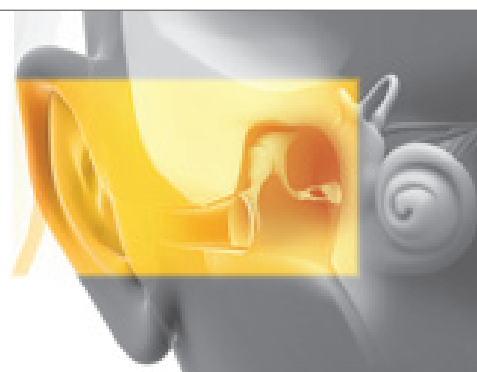
CONDUCTIVE HEARING LOSS

(OUTER OR MIDDLE EAR PROBLEMS)

A person may suffer from conductive hearing loss if there is a problem with their outer or middle ear. This means that sound is unable to travel or 'conduct' from the outer ear to the inner ear.

Baha re-directs the sound through the skull bone to the inner ear, bypassing the blockage. This helps to avoid distortion and feedback, as well as providing exceptional clarity.

Conventional hearing aids simply make sounds louder. In the case of a conductive hearing loss, simply amplifying sound may not provide real hearing benefits. This is like turning your stereo up too loud; the higher the volume, the more distorted and uncomfortable the sound becomes.



MIXED HEARING LOSS

(BOTH OUTER/MIDDLE AND INNER EAR PROBLEMS)

This condition involves complications both in the outer or middle ear and the inner ear (cochlea).

Baha accesses the cochlea via direct bone conduction, bypassing the outer or middle ear to deliver the right amount of amplification to suit your hearing needs.

The result is less distortion and feedback, and an increased level of comfort and sound clarity.



SINGLE-SIDED SENSORINEURAL DEAFNESS

(TOTAL DEAFNESS IN ONE EAR)

Single-sided sensorineural deafness is profound inner ear hearing loss in one side only. The cause of this loss centres on problems in both the cochlea ('sensori') and the hearing nerve ('neural'), hence the name sensorineural.

This condition causes a person to experience many challenges in everyday hearing. With only one working ear, it's difficult to locate sounds, and even harder to hear and understand speech when coming from the non-working side.

Recent studies have demonstrated that Baha is the most effective solution for single-sided deafness.^{5,6,7} Baha transfers the sound directly to the healthy cochlea, making it possible to hear sounds from both sides.



The right choice

● in direct bone conduction ●

More than 90,000 success stories

Cochlear Baha is the number one choice for patients and health care professionals for bone conduction hearing solutions. No one has more experience with bone conduction implants than Cochlear.

Over 90,000 people around the world enjoy improved quality of life thanks to their Baha. You can read some of their stories on our website at www.cochlear.com/au.

If you are considering a Baha and would like to talk to someone who is already using the treatment, please visit www.cochlear.com/au to make contact with one of our Cochlear volunteers.

"It's been life changing for us."

Joshua's speech is the absolute biggest difference. Without his two Bahas he wouldn't be where he is today. He is very good at concentrating in class and he follows the exact learning curve as the rest of his classmates."

Joshua's mother

"It will change your life and you will never regret it..."

The biggest difference for me was to be able to communicate with more than two or three people at the same time – sitting around a table and participating in the conversation. The social contacts has improved so much!"

Arnold

"It's amazing!"

...it was nice to hear like everyone else. I could hear the little sounds again, like footsteps. My Baha has helped with school because I am able to hear the teacher and others in my class."

Hannah

"It was incredible!"

The first time I heard through a Baha sound processor, I was surprised. I could hear someone turning a page in a book, sounds like the computer, air, distant sounds and the TV. It was incredible."

Cristina

"Quim would not be the same without his Baha."

Hearing is so important that we wanted him to have the surgery as soon as possible. We did not want Quim to lose his language learning."

Quim's mother

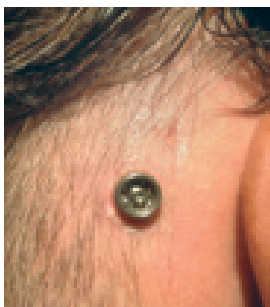


The most advanced bone conduction implant available

The Cochlear Baha DermaLock™ Abutment incorporates the best technology and features in osseointegrated implants.

The Cochlear Baha DermaLock Abutment is the industry's only abutment specifically designed for less invasive surgery with no soft tissue removal. This means better cosmetic and soft tissue outcomes for you. Baha is the only bone conduction implant with TiOblast™ surface technology⁸ to improve the stability and osseointegration of your implant.

- The Baha 3 implant is 90% more stable than the previous Baha implant.⁹
- The DermaLock™ abutment with its concave shape enhances soft tissue stability as it adheres tightly to your skin.^{10, 15}



Two weeks after surgery. Better cosmetic outcomes with the Baha DermaLock Abutment



Hearing performance

Cochlear Baha 3 Cochlear Baha 3 Power

In clinical trials Baha 3 users experienced 25%-50% improved hearing in noise compared to their previous generation sound processors.¹¹⁻¹⁴

The Baha 3 sound processors are designed specifically for bone conduction and deliver premium hearing performance for improved speech understanding in noisy situations.

Your Baha 3 sound processors contain advanced signal processing features that are designed to deliver a clean signal providing you with effortless listening throughout your day.

Speech understanding is vastly improved, making it easier to follow conversations, even in noisy situations.

You can also benefit from dedicated listening programs for music and noisy places. Your Baha can deliver superior amplification all day long – even in challenging hearing situations.

Need more power? The Baha 3 Power (BP110) is the most powerful headworn Baha available. It is designed to give sound an extra boost in the high frequencies to benefit people with greater hearing loss.



Cochlear Baha 3



Cochlear Baha 3 Power

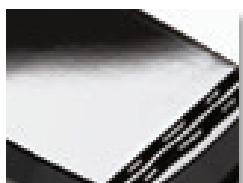
"I find it easier to communicate in large groups with my Baha BP100. I can hear my customers more clearly and I can hear my baby too!"

**LAURA,
BAHA USER**



Designed for life

The Baha 3 sound processors include many design innovations that improve reliability, usability and functionality.



GORE-TEX® covers the microphone ports, plus a silicon seal and rubber lining hinder water, moisture and dust from entering the case.



A EUOPIN AUDIO CONNECTOR links you to lifestyle accessories such as FM receivers, MP3 players and Bluetooth adapters.



THREE BUTTONS make simple volume and program adjustments easy.



IMPACT-RESISTANT PLASTIC makes the casing resilient, easy to keep clean and protects against accidental bumps.



VISUAL AND AUDIO INDICATORS confirm the processor settings and warn when the battery is running low.



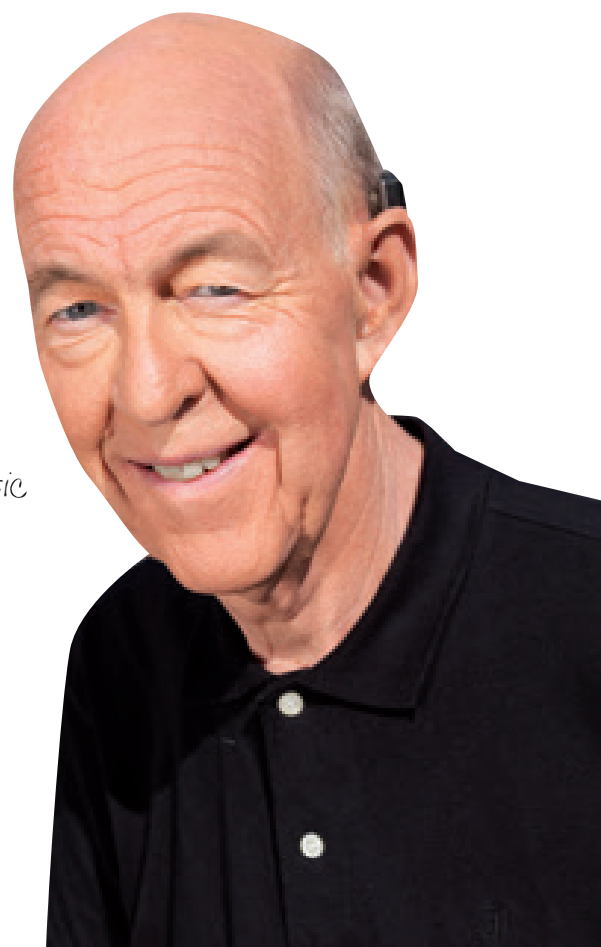
KEY LOCKS and optional **TAMPER-PROOF DOOR** protect the processor's settings from children's fingers.



The Baha **SAFETY LINE** secures your Baha to your clothing.

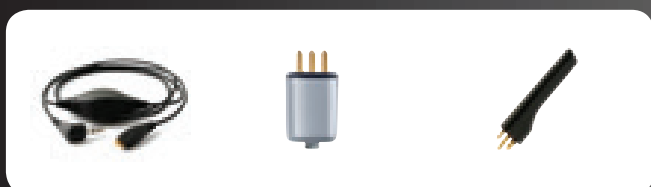
"I hear sounds in a totally different way, a way I have never experienced before. It's a fantastic feeling to be able to hear really clearly what people are saying. I felt immediately that I could not be without it."

**KENNETH, BAH3
POWER USER**



Individuality through flexibility

Every Baha candidate is an individual and the Baha portfolio celebrates this, delivering solutions for a range of hearing losses with a style as subtle or as bold as you are. Your Baha sound processor can blend discreetly with your hair colour or you can stand out from the crowd with brightly coloured battery doors.



AUDIO ADAPTER

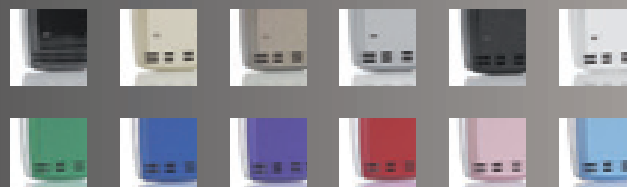
Enjoy direct input sound from stereo systems, TVs and MP3 players.

FM RECEIVER

An FM receiver enables the use of FM systems that are commonly used in school classrooms, improving the hearing performance in noisy environments. (FM receiver not sold by Cochlear).

TELECOIL

Provides improved hearing over the phone, and in buildings supplied with a loop facility e.g. schools and cinemas. The telecoil sends the signal directly to the Baha.



COLOURS AVAILABLE



Benefits for children

Paediatric features

Children with a hearing loss need the best possible access to speech at all times and the Baha 3 sound processors have been designed with this in mind. The paediatric features meet the tough challenges placed on a hearing solution by active children.

- **VISUAL INDICATORS** (LEDs) and audible indicators deliver parental confidence
- **IMPROVED LISTENING** on a Baha Softband
- **KEYLOCK FUNCTION** to stop inadvertent setting adjustments
- Fun, child-friendly **BATTERY DOOR COLOURS**
- Optional **TAMPER-PROOF** battery doors, also available in a range of colours
- Baha **SAFETY LINE** that attaches discreetly to the bottom of the processor so you can secure it to your child's clothing.

Softband

Not only is Baha a child-friendly solution with great paediatric features, it can also be used at any age, even by infants. It's common to first use a Baha Softband so children can wear a Baha sound processor as early as possible, and then get a Baha implant when ready.



* Note accessories sold separately

Hearing is believing

Your journey to better hearing

Now that you've read what Baha can do,
how can you hear it for yourself? Easy.



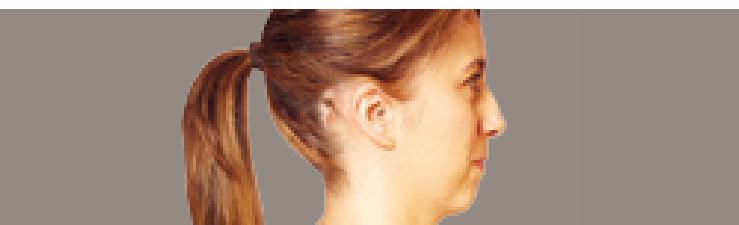
1 TRY

Ask your Baha hearing health professional for a Baha demonstration, so you or your child can hear the difference.



2 REFER

If your hearing health professional agrees that you (or your child) could benefit from a Baha, you'll be put in touch with a qualified implant surgeon. Meanwhile, or if surgery isn't an option, you can enjoy Baha hearing with a Baha Softband.



3 IMPLANT

The Baha implant procedure is routine surgery, and you'll be able to pick up your normal routine in just a few days. And unlike some types of ear surgery, there's no risk of further hearing loss.



4 FIT

Once the bone has had time to bond with your implant, your hearing health professional will fit the Baha processor and adjust it to your personal hearing needs.



CRISTINA Baha user

5 ENJOY

Apart from a follow-up appointment and routine checks, keeping the Baha abutment clean and processor dry is all you need do to enjoy your new world of sound.

Our lifetime commitment to your hearing

Cochlear continues to bring the latest advances in technology to our Baha recipients, whether they were implanted 30 years ago, or just yesterday. As upgrades and innovations become available, you'll be able to take advantage of them, usually without further surgery – so you can keep improving your hearing and live an active and connected life.

Our commitment to developing the latest hearing technology guarantees you don't get left behind as science progresses. It's a commitment from the world leader in hearing implants and is backed by the industry's largest investment in research and development and the largest collaboration program with leading specialists around the world.

A lifelong solution – it's just the beginning.



**ANNIE, BAH
USER, AGE 6**



Frequently asked questions

CAN I TRY A BAHА SOUND PROCESSOR BEFORE MAKING UP MY MIND?

Yes. Baha can be connected to a test band, test rod or Baha Softband, allowing you to try the sound processor in different environments such as at home, at work or out and about. See your audiologist for a Baha trial.

CAN I WEAR A BAHА 24 HOURS A DAY?

You can wear a Baha for all normal activities, however you should remove the sound processor before going to sleep, showering or engaging in water sports. You may also need to wear special protection for vigorous sports, but Baha users still enjoy a wide variety of sporting activities without concern.

WHEN CAN I RETURN TO WORK AFTER SURGERY?

Most people are able to return to work a couple of days after the surgery, however it's always wise to follow the advice of your surgeon.

CAN CHILDREN LOOK AFTER THEIR BAHА THEMSELVES?

Children using Baha can be taught to clean the abutment just as they are taught to clean their teeth.

IS A BAHА COMPATIBLE WITH MOBILE PHONES?

Yes, Baha sound processors can be used with GSM or other mobile phones. However, you should never hold the phone against the sound processor itself, as this could cause unwanted feedback.

A Telecoil unit can be used with any Baha to further improve the quality of sound from an ordinary phone. Visit www.cochlear.com for more information about using a phone with a Cochlear Baha.

WHAT TYPE OF BATTERY DOES THE BAHА SOUND PROCESSOR TAKE?

Hearing aid batteries power head-worn Baha sound processors. Most users find one battery typically lasts around one week. The Baha Cordelle II body-worn processor is powered by one 9V battery.

HOW MANY PEOPLE HAVE RECEIVED A BAHА TO DATE?

More than 90,000 people worldwide have received a Baha – some of whom have been using Baha sound processors since they were first introduced in 1977. Over the last 30 years, Baha has become the treatment of choice for thousands of hearing-impaired people worldwide and the number of Baha users is rapidly increasing.

WHAT CAN I EXPECT FROM SURGERY?

Getting a Baha does involve a minor surgical procedure. A small titanium implant is placed in the skull, behind the ear. Usually this is a day surgery procedure. For children or those with soft bone, it may be necessary to do the surgery in two stages. As each individual is different, it is best to speak to your surgeon about their specific plans for your surgery.

A dressing will be placed over the implant for about 10 days. Recovery time is short with most adults and children able to return to normal activities within a few days, however avoid activities that could bump the implant area.

WHEN CAN I START USING MY SOUND PROCESSOR?

After surgery you need to give the Baha implant time to heal and bond with the bone before you can wear your sound processor. This process is called osseointegration. Your surgeon or audiologist can tell you how long you will need to wait.

HOW DO I CARE FOR MY BAHA?

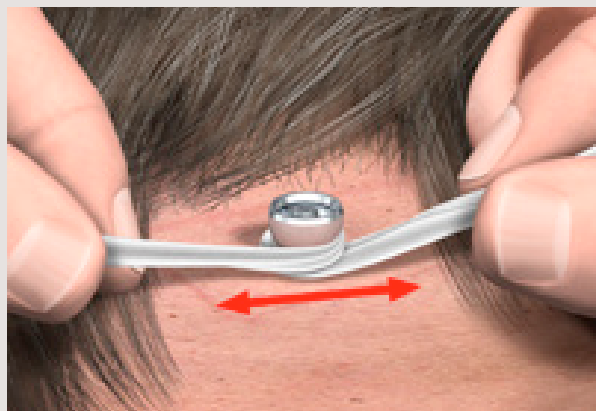
The care needed to get the most out of your Baha can be very easily incorporated into your daily routine. Very quickly it will become second nature.

Follow all your surgeon's instructions about caring for your implant site after your surgery.

For the first few weeks after your surgeon removes the dressing an alcohol free wipe can be used to clean the area. When you receive your sound processor your audiologist will show you a cleaning brush which you can then use to gently brush the area daily. These brushes should be changed every 3 months or after an infection of the area. Please also refer to the information in your Baha Aftercare Kit.

WHERE CAN I GET ADVICE ABOUT MY BAHA?

For advice about your Baha sound processor your audiologist is the best person to talk to. For advice about the area of skin around your abutment your surgeon may be the best person to advise you. The Cochlear website may also answer some general enquiries you may have. Please go to: www.cochlear.com/au



Cleaning the area around the abutment



Hear now. And always

This is Cochlear's promise to you. As the global leader in hearing solutions, Cochlear is dedicated to bringing the gift of sound to people all over the world. With our hearing solutions, Cochlear has reconnected over 250,000 people to their families, friends and communities in more than 100 countries.

Along with the industry's largest investment in research and development, we continue to partner with leading international researchers and hearing professionals, ensuring that we are at the forefront in the science of hearing.

Our commitment to those who have received a Cochlear hearing solution is that for the rest of their life, they will Hear now. And always

For more information:

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www.cochlear.com/au

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