

Bone anchored hearing aid - BAHA

What is a BAHA?

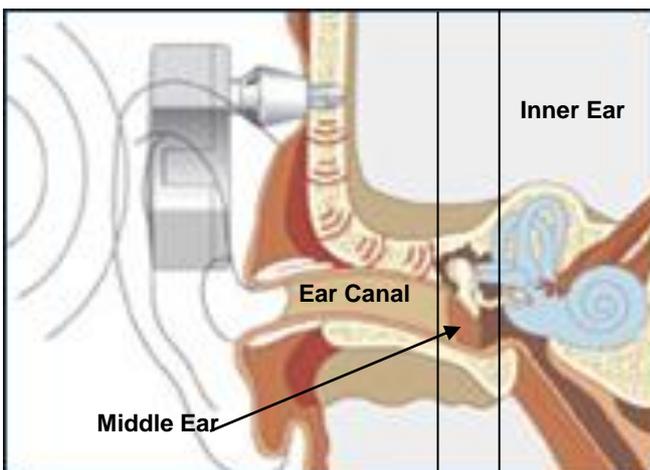
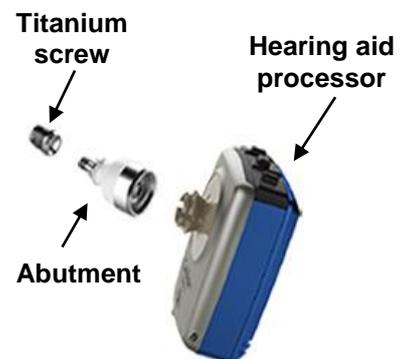
A BAHA is a surgically implantable device. It is a type of hearing aid that works by bone conduction; this means the sounds are transferred through the bone to the cochlea (hearing organ), by a mechanical vibration. It is used to treat hearing loss in people that are unable to wear conventional hearing aids.

How does it work?

The BAHA system is made up of three parts; a titanium screw fixture, an abutment, and an external hearing aid processor that is detachable.

The titanium screw fixture and abutment are surgically implanted into the skull located slightly above and behind the ear. This fixture then undergoes a process called osseointegration, which means that the bone bonds to the implant.

After a healing period (6-8 weeks) where the bone and implant have formed a sufficiently tight bond, the external hearing processor is then mounted onto the abutment. The external processor easily attaches and detaches from the abutment allowing it to be removed when not needed.



The external processor has a microphone which picks up sounds in the environment, which are then converted into mechanical vibrations that are transmitted through the skull to the inner ear and from there to the brain.

These processes by-passes the ear canal and the middle part of the ear and make use of the inner ear function only.

Who is a candidate for a BAHA?

People who are unable to wear conventional hearing aids may benefit from wearing a BAHA.

- **Chronic middle ear disease:** chronic ear infections result in persistent discharge from the ear. It is difficult to treat these infections and wear a hearing aid at the same time. This is because a hearing aid worn in the ear stops the ear from being ventilated and makes the ear canal more humid. This could make the infection worse or damage the hearing aid. When wearing a BAHA the ear canal is not occluded, therefore the infection is not aggravated. Our experience has shown the BAHA to be an effective therapy in aiding the treatment of chronic active middle ear infections.
- **Malformation of the ear canal or middle ear:** malformations can make it difficult to wear any kind of conventional hearing aid that sits in the ear canal. There is the option of using a bone conduction hearing aid in which the aid is held against the bone with a spring steel headband, however this can be uncomfortable. Using a BAHA may be a more comfortable and a more cosmetically appealing option.
- **Unilateral sensorineural hearing loss or single sided deafness:** people with this condition may experience difficulty hearing when people are on their poor side, in noisy or group situations. Wearing a BAHA on the poor hearing side will pick up sound from this side and transfer it to the better hearing ear via bone conduction. The benefits include increased awareness of sound and potentially better hearing in groups. Being able to localise the direction of sound is something that will not improve with a BAHA for this group of people as the natural ability to localise sound is still impaired; however sound awareness will improve.

What does the surgery involve?

The surgery to place the osseointegrated fixture (titanium screw) involves a local or general anaesthetic and can be done as a day stay procedure. The fixture and attached abutment is usually inserted as a single stage procedure. This involves relatively minor surgery to prepare the skin surrounding the screw site. A small incision is behind the ear and then a small amount of tissue may be removed from under the skin to accommodate the length of the abutment. The screw fixture is then drilled into the bone and the surrounding skin sutured together around the abutment. A dressing is placed to secure the skin which is held by a cover cap on the abutment for 10 to 14 days.

For the screw fixture to securely integrate with the bone, it generally takes between six to eight weeks (longer in children). After this time, when healing is complete, the hearing processor can be fitted and used.



Can I try it?

A BAHA pre-operative assessment is essential. This involves a hearing test and speech testing with and without the BAHA test unit to assess the benefit that may be obtained. We can test the BAHA unit using a connection to a spring steel headband or on an elastic headband. The real benefit of the trial period cannot be estimated completely in a sound treated booth, so we recommend you take the BAHA home, to work or wherever you normally experience difficulty hearing to fully understand whether it is likely to be of benefit. For further information speak to the Audiologist at the assessment.

How is it funded?

As the unit is implantable, people with private health insurance are able to get their device funded by their insurance provider with essentially no out-of-pocket expenses other than the surgeons and anaesthesiologist fees.

People who are able to have their device funded through the Commonwealth Hearing Services Program, with essentially no out-of-pocket expenses, include:

- Eligible pensioner concession card holders
- Department of Veterans' Affairs Repatriation Health card holders
- Receiving a Centrelink sickness allowance benefit
- Current serving member of the Australian Defence Forces.

The Commonwealth Hearing Services Program will not pay the costs of the surgery.

Public patients fulfilling certain criteria may be able to obtain the BAHA through the Royal Victorian Eye and Ear Hospital. Talk to your Audiologist at the time of the appointment to determine which funding option is most suitable for you.

For further information contact:

Audiology Department
The Royal Victorian Eye and Ear Hospital
(03) 9929 8270

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