

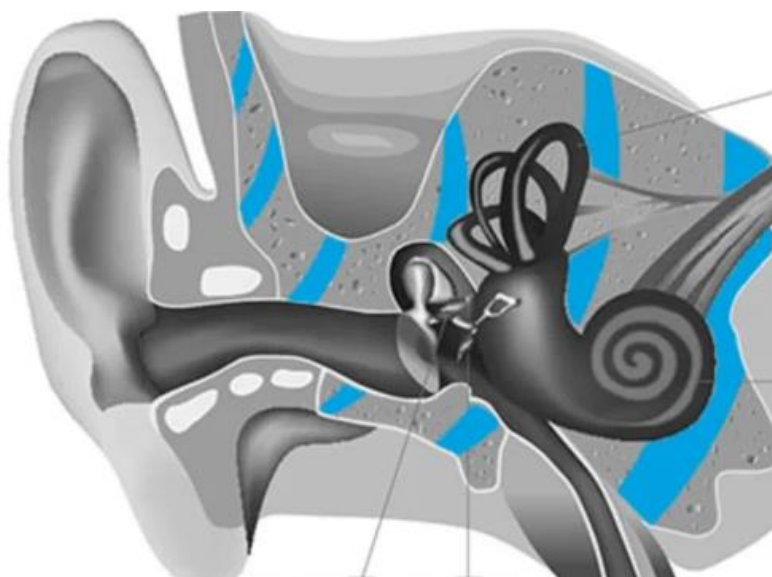


**GWASANAETH MEWNBLANIADAU
CLYWEDOL DE CYMRU**
**SOUTH WALES AUDITORY
IMPLANT SERVICE**

BONE CONDUCTION

HEARING DEVICES

THE PATIENT JOURNEY



CARDIFF IMPLANT PROGRAM

Cardiff University Health Board has a well-established specialist implant centre offering a range of hearing implants including cochlear implants and bone conduction implants. We also offer a non-implantable bone conduction hearing device if surgery is not an option for some patients.

Our implant program has two separate clinics on the same site. Adult patients are seen in the main outpatient department and children are seen in the Noah's Ark hospital.

Our current staff on the implant program includes Audiological Physicians, ENT Surgeons, Clinical Scientists, Specialist Audiologists, Specialist Hearing Therapists, Qualified Teachers of the deaf and Specialist Speech and Language Therapists.

This information leaflet is for adult patients being referred for consideration of bone conduction hearing implants only. Please refer to our other information leaflets for our cochlear implant service and our paediatric bone conduction implant service.

WHAT IS BONE CONDUCTION

We hear via two routes: air conduction and bone conduction and both work together to help us hear.

Problems in the outer and middle ear can interrupt the sound we hear by air conduction preventing the sound getting into the inner ear. Bone conduction can bypass the problems in the outer and middle ear and deliver the sound into vibrations across the skull to the inner ear enabling us to hear.

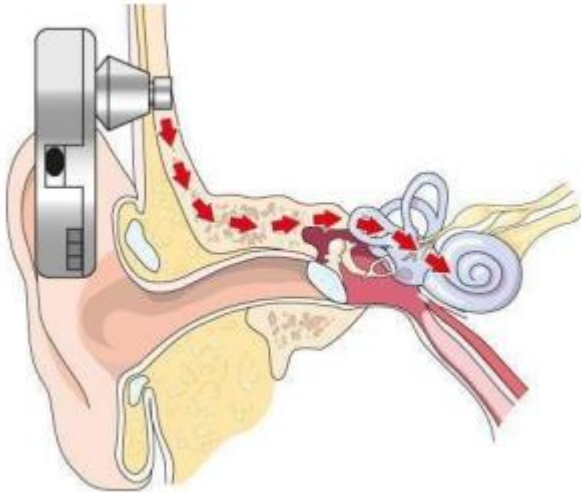
HOW BONE CONDUCTION IMPLANTS WORK

Bone conduction systems consist of an external processor that collects the sounds that we want to hear and changes these sounds into vibrations. The processor connects to either an abutment or an external magnet and the vibrations are transmitted across the skull to the inner ear enabling us to hear.

BONE CONDUCTION IMPLANTS

BAHA Connect

The BAHA Connect System uses a small abutment that offers a direct connection between the implant and the sound processor. It is easy to use and requires little daily care; you simply snap the BAHA Sound Processor onto the abutment. The external processor sends vibrations through the abutment directly to the implant and skull to the inner ear.



BAHA Attract

The Baha Attract System sets a new standard for hearing performance, comfort and simplicity. By using internal and external magnets that attract to one another, it is comfortable and both easy to use and care for. The external processor sends vibrations through the skin to the internal magnet, these vibrations pass directly to the implant and skull to the inner ear.



Osia and Bonebridge

The active bone conduction systems (e.g. Osia and Bonebridge) also use internal and external magnets but unlike the BAHA Attract which produces vibrations externally, the active internal magnet produces the vibrations and the external processor tells the internal implant to set up the vibrations. These vibrations pass directly through the skull to the inner ear.

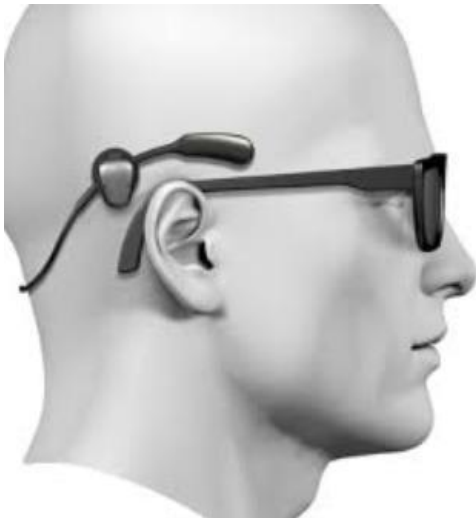
Osia

BoneBridge



Non-implantable bone conduction device

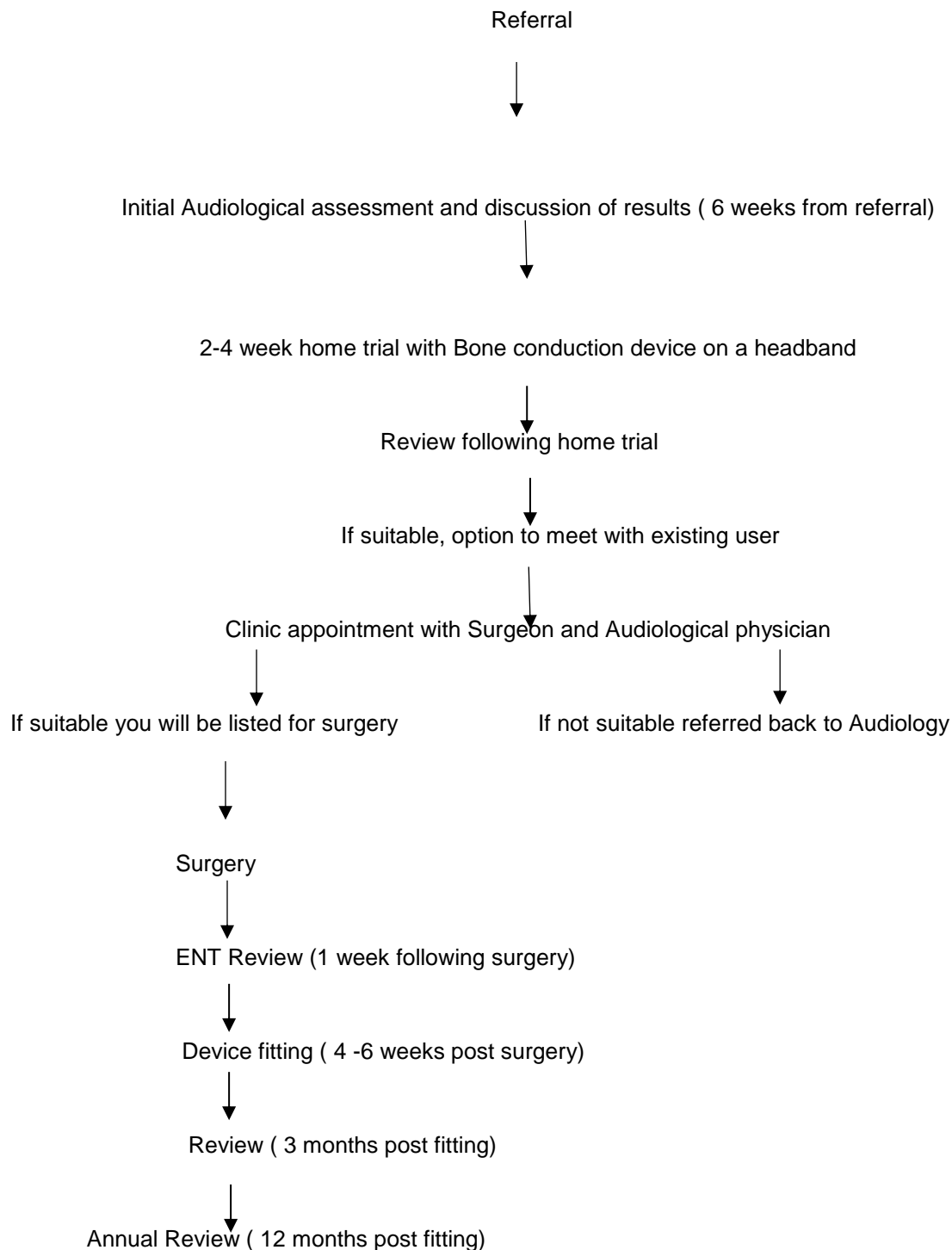
These devices require no surgery, the sound processor is attached to a headband or soft band to be worn much the same as the home trial that you would have had. The device sends vibrations across the skin to the bone where they are detected by the cochlear and perceived as sound. This is a good alternative long term option for patients who don't want or can't have surgery.



REFERRAL

You have been referred for consideration for a bone conduction implantable device. The entire patient pathway can take up to 26 weeks from referral. This amount of time is necessary in order to determine if you would benefit from a bone conduction hearing implant.

Patient pathway:-



AUDIOLOGICAL ASSESSMENT

The aim of the bone conduction hearing implant assessment is to provide you with more information about implant options and to assess if a hearing implant will be more suitable for you than the conventional air conduction hearing aids.

Before being referred to the implant programme you will have been diagnosed with a moderate to severe mixed/conductive hearing loss and experiencing difficulty wearing traditional air conduction hearing aids or gaining very little benefit from them. Patients with single sided sensory neural hearing loss will also be considered for bone conduction hearing devices.

Your Audiologist will look at your audiological records and you may then be fitted with more suitable hearing aids which you need to wear for a set period of time. Once your Audiologist is happy that you have been optimally aided with conventional hearing aids they will then proceed with the bone conduction hearing implant assessment.

During the assessment your Audiologist will retest your hearing and perform a bone conduction speech test. These tests will determine whether you are within the fitting criteria for a bone conduction implantable hearing device. It is the bone conduction hearing that is considered when deciding which device would be suitable for your hearing loss.

As part of the assessment a bone conduction hearing device will be programmed and will be fitted to a headband for you to trial in clinic. You will then be given the opportunity to take the device home for 2-4 weeks trial.

Following the home trial your Audiologist will review you in clinic and ask how you got on with the device. If you have had a positive experience and you wish to proceed you will be given an appointment to come back to clinic to meet with the ENT Surgeon and Audiological physician.

If you find the bone conduction hearing device beneficial but don't want to proceed with surgery then the MDT may discuss the option of you wearing the bone conduction device on a headband long term to help you hear.

MEDICAL EVALUATION

Our ENT Consultant Surgeons and Audiological physician will consider your medical history and discuss all suitable options with you. They will explain what is involved in the operation and the risks involved. Radiological procedures such as Xrays/CT scans may be requested and evaluated by the surgeon. We may also request information from other medical professionals.

Once the surgeon is happy to proceed you will be listed for surgery. The wait time for surgery does vary so we are unable to inform you how long you will have to wait.

There are different types of bone conduction implants and your Audiologist and surgeon will discuss the different options with you and a decision will be made as to which one would be most suitable for you.

SURGERY

The surgeon will discuss the detail of the surgery with you once a final decision has been agreed on what device will be suitable for you. On the day of the surgery they will answer any additional questions you may have and will ask you to give your permission to proceed by asking you to sign a consent form.

Bone conduction hearing implantation is a simple procedure done in the operating theatre which takes approximately 1 - 2 hours. You are likely to be discharged the same day. Your surgeon will decide whether a general or local anaesthesia is necessary depending on your medical history and the type of implant you are having. A small area of your hair will be shaved during the operation to help the surgeon insert the implant. The wound will be closed using stitches which will usually dissolve within 2 weeks.

After the surgery your head will likely be wrapped in a bandage to protect the incision site, and you will be given instructions on how to care for the implant site along with medication and possible activity restrictions. Once you take the bandage off, you may have some swelling around the incision site. You may have some discomfort for up to 48 hours after the surgery. You will be advised to keep the implant site dry for at least a week after the operation to help with the healing process.

Two weeks following the surgery you will be reviewed by your surgeon in ENT. At this appointment the implant site will be examined to check that everything has healed and that you are well. If the surgeon is happy they will contact your Audiologist so that a date can be arranged for you to have

your hearing processor fitted. This is usually 6 weeks following surgery to ensure that the implant fixture is secure.

PROCESSOR FITTING

You will be seen by one of the Audiologists for the fitting of your hearing processor in an outpatient clinic. During this appointment the hearing processor will be connected to the implant and programmed using computer software. Hearing tests will be performed to ensure the processor is set to optimise your hearing.

REVIEW

You will be given an appointment to attend the Audiology clinic for a review 3 months after you have had the device fitted. At this appointment your Audiologist will ask you to complete some questionnaires and will carry out some hearing tests. If necessary the Audiologist can adjust your processor to improve the sound quality for you. If you and your Audiologist are both happy with your progress then you will be reviewed 1 year post fitting and then you will be followed up every 3 years.

If you should develop a problem with the process or the implant site at any time you can access the service by telephone or email. The details can be found on the front of this information leaflet.

CONTACT INFORMATION

Audiology Department

Clinic 7, Outpatients

University Hospital Wales Cardiff

Heath Park, Cardiff CF14 4XW

Tel: 02921 843179

Email: Audiology.Helpline.CAV@wales.nhs.uk

Last document review date: January 2024