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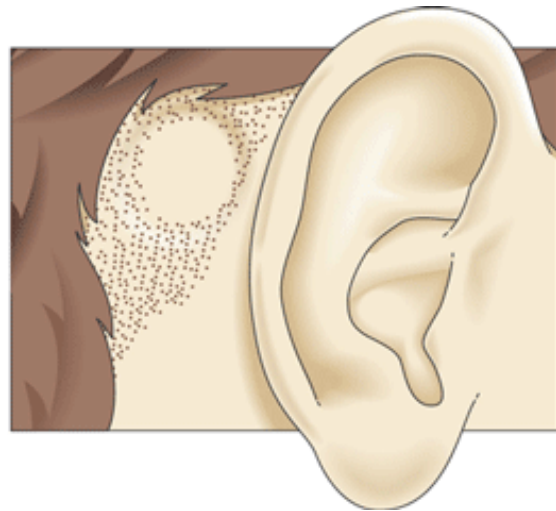
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## Bone anchored hearing aids (BAHA)

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**Introduction:** Bone anchored hearing aids (BAHA) are implantable hearing aids that can be used to treat hearing loss of a severe magnitude. This device works directly by stimulating the inner ear via bone conduction. It has been in use from 1977 in Europe. It got approved by the FDA only in 1996.

### Indications for use of BAHA:

1. Bilateral canal atresia is an absolute indication for the use of BAHA. This is because canal atresia prevents insertion of ear mould for an air conduction aid.
2. In chronic ear infections when insertion of ear moulds is a problem.
3. Unilateral deafness which cannot benefit from use of regular hearing aids.

### Components of BAHA:

BAHA has 3 components. They are :

1. Titanium screw that becomes integrated with the skull bone behind the ear.
2. Titanium abutment is fitted to the titanium screw which is already integrated to the skull bone.
3. Ear level sound vibrator.

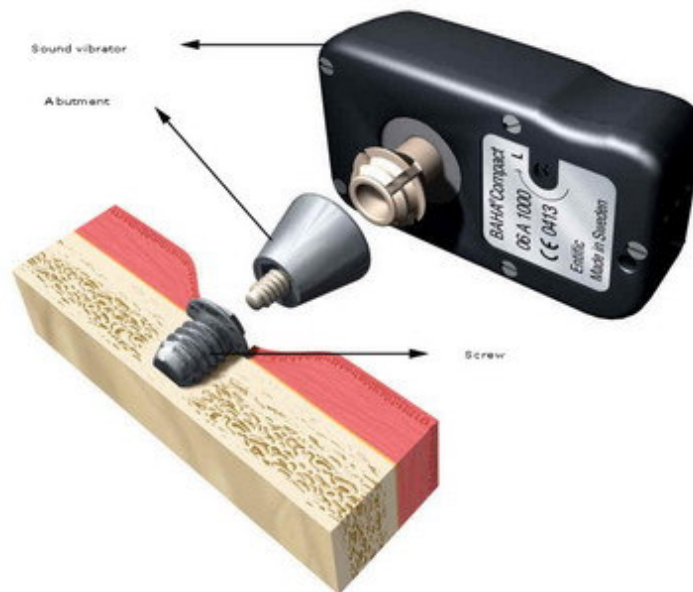


Figure showing the components of BAHA

**Requirements for BAHA implant:** The prime requirement for a successful BAHA implant is that the patient should have adequate bone conduction thresholds. It has been suggested that bone conduction threshold should be at least 45dB for effective functioning of BAHA. Preoperative speech audiometry should be performed in all patients before BAHA implant.

#### **Implantation procedure:**

BAHA implantation is a surgical procedure. Surgery is performed under local / general anesthesia. It is a relatively simple surgical procedure. The bone postero-superior to the ear canal is usually of sufficient thickness over the age of three to take an implant, and allow osseointegration. In adults mostly a single stage procedure is preferred.

In this procedure bone over the skull just postero superior to

the ear canal is drilled and the titanium screw is inserted into it. Three month period is allowed to elapse for osseointegration to take place. Abutment is introduced after the osseointegration is complete. The ear level sound vibrator can be attached to the abutment.

#### **Complications of BAHA insertion :**

- 1. Infection**
- 2. Crusting**
- 3. Screw falling out**

**How BAHA works:** It works by taking the sound from the outside and transmitting it to the inner ear through the bone. This bypasses the ear canal and the middle ear.

#### **BAHA care:**

- 1. Clean the area around the abutment *DAILY*: Washing your hair will soften any crust. Use the supplied Entific soft cleaning brush and gently wipe the bristles against the side of the abutment, not the skin. Remove any debris around or inside the abutment. Antibacterial soap is recommended. Dry the area gently.**
- 2. Do not allow hair to wrap itself around the abutment.**
- 3. Do not keep hot air from a hair dryer on the abutment for a long period.**
- 4. No hair will grow under the processor.**
- 5. Whenever strong chemicals, such as hair dyeing solutions, are being applied to your hair, please cover the abutment and skin graft site with plastic to protect your skin and the abutment from the chemicals. When exposed to strong chemicals, the skin surrounding the abutment may become red, swollen, infected, or burned.**
- 6. BAHA should be removed before undergoing MRI imaging.**
- 7. For best benefit it should be worn throughout the day.**
- 8. The processor will whistle when touched or when it comes into contact with other objects. Whistling can be reduced by**

**simply repositioning the processor.**

**9. During windy conditions outdoors, the directional microphones may pick up wind sounds. Simply rotate the processor on the abutment 90 degrees or until the wind sound stops.**

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