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Osseointegrated Implants (AKA BAHA or Bone Anchored Hearing Aid)

What is an osseointegrated implant?

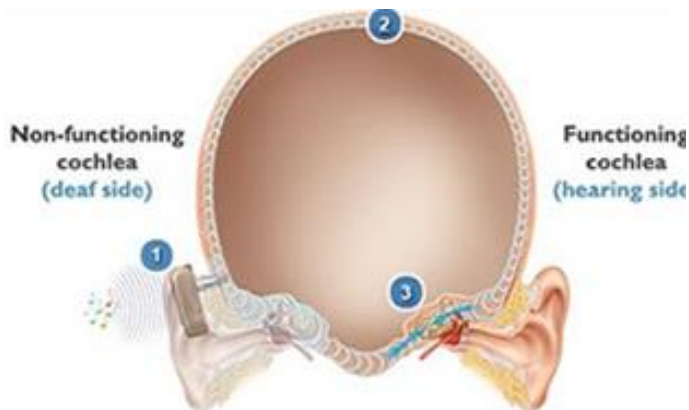
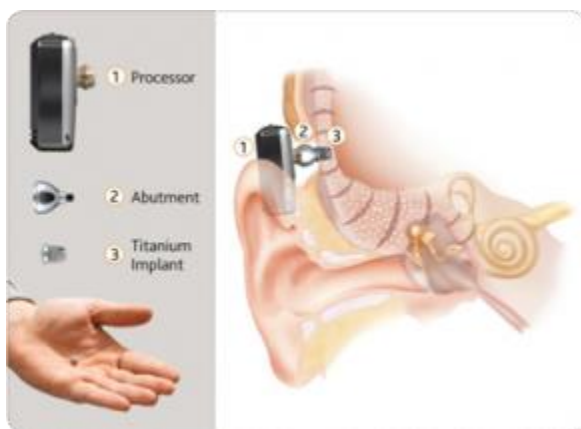
An osseointegrated implant is an implant which is placed directly into bone and while it heals the bone integrates around it. When the implant vibrates the bone around it also vibrates, allowing transmission of sound. The inner ear is housed in bone and is directly stimulated.

How does an osseointegrated implant work?

A fixture is placed 4 millimeters into the temporal bone using a small drill, similarly to a dental implant. This is allowed to osseointegrate for 4-6 weeks before activation. Then the processor is attached, which has a microphone to detect sound and vibrates when stimulated. It connects to the fixture either directly (BAHA Connect) or through a magnet (Osia), leading to vibration of the bone.

What are the reasons to have an osseointegrated implant?

- 1) Conductive hearing loss - Conductive hearing loss is a certain type of hearing loss caused by an issue in the external or middle ear. A BAHA allows a conductive hearing loss to be bypassed. This is advantageous compared to a normal hearing aid because the sound does not need to be amplified as much, leading to less feedback and a clearer sound.
- 2) Mixed hearing loss - When there is both a conductive (external or middle ear) and a sensorineural (inner ear) hearing loss, a BAHA can help bypass the conductive hearing loss and also amplify enough to overcome the sensorineural hearing loss.
- 3) Inability to wear normal hearing aid - A BAHA can be a good alternative for people who are unable to wear a traditional hearing aid. The most common reason for this is extremely narrow ear canals or chronic outer ear infections.
- 4) Single sided deafness - If you have lost your hearing in one ear, a BAHA allows you to transmit the sound that you receive from that side of your head and transmit it through vibration through your skull. This allows you to hear sound from that side of your head without wearing a hearing aid in your good ear.



What are the types of osseointegrated implants?

Both types have a fixture which is screwed directly into bone. The differences are how they are attached and powered.

BAHA Connect – Abutment which goes through the skin and the processor vibrates leading to bone vibration. Simple surgery which can be done under twilight or general anesthesia. 10-20% of patients have occasional skin reactions to the abutment.

Osia – Connects to fixture via a magnet but is powered from the fixture's attachment itself leading to sound quality comparable to BAHA Connect while still being invisible unless the processor is in place. It is still a simple surgery but more involved than with the BAHA devices and requires general anesthesia.



BAHA Connect



Osia

<i>Types</i>	<i>Attachment</i>	<i>Sound Quality</i>	<i>Surgical Time</i>	<i>Risk of Skin Complications?</i>	<i>MRI Compatible?</i>
<i>BAHA Connect</i>	Snap-on	Good	10 m	Yes	Yes, if external abutment removed
<i>Osia</i>	Magnet	Good	45 m	No	Yes, if splint is placed

What are the risks of surgery?

- Bleeding
- Infection
- Skin reactions (specific to BAHA Connect)
- Rarely, the implant can fall out or extrude

Can I get an MRI with an osseointegrated implant?

Yes, however both options require you to see Dr. Bartindale the day of the MRI. With a BAHA Connect the abutment would need to be temporarily removed during the MRI and replaced that same day. This can be done in our clinic, and it is not painful to perform. With Osia, a splint would need to be wrapped around your head which can be removed after the MRI yourself.

Will I set off metal detectors at the airport?

No, this is not an issue.

Is this covered by insurance?

Yes, unlike most traditional hearing aids, this is covered by insurance. If you choose to proceed, we will precertify with your insurance before surgery. The cost to you is oftne less than traditional hearing aids.

Postoperative Care Instructions**BAHA Connect**

- A plastic disc called a healing cap will be placed during surgery. This will be removed at your first postop appointment. Leave your abutment alone until this is removed. Try to keep it dry in the shower until removed.
- After removal, begin cleaning around the abutment with a soft brush and gentle soap 2-3 times per week. Be careful not to brush too harshly. Do not forget to clean inside the abutment as well. Pat the skin dry carefully after cleaning and let your brush air dry. Replace the brush every few months.
- Try to avoid getting hair wrapped around the abutment. Do not keep a hot hairdryer around the abutment for too long.

Osia

- Remove gauze dressing the day after surgery. It is ok to shower two days after surgery. It is ok to get the incision wet but do not scrub it.
- Apply vaseline twice per day on the incision for the first month following surgery.
- Call with any redness or increase in tenderness over the site.