

EAR, NOSE AND THROAT ASSOCIATES OF CHESTER COUNTY

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BAHA (BONE-ANCHORED HEARING AID)

The BAHA is a surgically implantable system for treatment of hearing loss that works through direct bone conduction. A titanium implant is placed above and behind the affected ear directly in the bone of the skull through a small incision. Osseointegration (the in-growth of bone) occurs over a period of three months, stabilizing and fixing the implant. After this a processor can be snapped on, allowing the patient to hear by direct transmission of sound through the bone to the inner ear.

The BAHA was first developed in 1977 and was approved by the FDA in 1996 as a treatment for conductive and mixed hearing losses in the United States. In 2002 the FDA approved its use for the treatment of unilateral sensorineural (nerve) hearing loss.

BAHA is used to help people who cannot wear conventional hearing aids either because of chronic ear infections, congenital external auditory canal atresia (incomplete development) and single-sided deafness. The system is also applicable to patients who have a break or fixation of the ossicles (bones of the middle ear), preventing the normal conduction of vibrations from the eardrum to the inner ear. This system allows for sound to be conducted through the bone of the skull rather than through the middle ear; this process is known as direct bone conduction.

A complete physical examination as well as an audiological and surgical assessment is required in order to determine whether a patient is a satisfactory candidate for the BAHA. For one (1) week prior to surgery, you should not take any aspirin or aspirin containing drugs, nor any ibuprofen or ibuprofen containing drugs. Examples of these include Advil (Motrin), Naprosyn (Naproxen), or Fiorinal. Also, supplements which should be avoided include Vitamin E capsules, omega 3 (fish oil), or glucosamine chondroitin. If you are required to be on any of these medications, discuss this matter directly with your ENTACC provider before stopping. If you are on Coumadin (Warfarin), Aspirin, or Plavix, please discuss with the prescribing physician about how to adjust this medication prior to your surgical procedure.

The audiologist will do two types of hearing tests to help decide if the BAHA will help. The first of these is known as pure tone audiometry, in which air and bone conduction are both assessed as well as the patient's ability to understand speech when it is properly amplified. The second test that is required is a headband test. The patient will have the opportunity to "try out" a BAHA on a headband. The sound quality gotten from the headband is not as good as the BAHA would provide since the sound is muffled by having to pass through the soft tissues of the scalp. If a patient can hear reasonably well with the headband, there is an excellent likelihood that the BAHA will help them significantly.

Surgery for the implant is done in the hospital setting as an outpatient procedure. A 'U'-shaped flap incision is made above and behind the right ear, and the implant is inserted directly into the bone of the skull. The implant is brought out through a small hole in the center of the 'U'-shaped flap. A dressing is then placed directly over the flap, and a plastic cap is snapped onto the implant, securing the dressing in place. Prior to the surgery, the patient will be provided appropriate instructions as far as the care of the surgical site. The sutures are generally removed about ten days postoperatively, and the patient instructed as far as ongoing care. After three months the sound processor will be fitted directly to the implant, after which the patient will be able to hear by direct bone conduction. Care thereafter involves removing the sound processor from the abutment during sleep, showering and swimming, as with any other hearing aid. The patient also needs to be committed to proper cleaning around the abutment in order to ensure that this site remains healthy and free of infection.