



## Corporate Medical Policy

# Implantable Bone Conduction Hearing Aids

**File Name:** implantable\_bone\_conduction\_hearing\_aids  
**Policy Number:** SUR6381  
**Origination:** 6/2006  
**Last CAP Review:** 6/2008  
**Next CAP Review:** 6/2010  
**Last Review:** 10/2009

### Description of Procedure or Service

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Conventional [external](#) hearing aids can be generally subdivided into air conduction hearing aids and bone conduction hearing aids. Air conduction hearing aids require the use of ear molds, which may be problematic in patients with [chronic middle ear](#) and [ear canal](#) infections, [atresia](#) of the [external](#) canal, or an [ear canal](#) that cannot accommodate an ear mold. In these patients, bone conduction hearing aids may be an alternative. The traditional [external](#) bone conduction hearing aid functions by transmitting sound waves through the bone to the ossicles of the [middle ear](#). The [external](#) devices must be closely applied to the temporal bone, with either a steel spring over the top of the head or with the use of a spring-loaded arm on a pair of spectacles. These devices may be associated with either pressure headaches or soreness. Semi-implantable bone conduction hearing aids have been investigated as an alternative. Although no longer marketed, the Audiant™ bone conductor (Medtronic Xomed, Inc. Jacksonville, FL) was a device approved by the U.S. Food and Drug Administration (FDA) that consisted of an [external](#) processor that used [transcutaneous](#) inductive electromagnetic energy to cause vibration of an implanted titanium magnet screwed into the temporal bone. The currently marketed BAHA device (bone anchored hearing aid, Entific Medical System, Minneapolis, MN) is based on the same concept.

Note: [Cochlear](#) implants, used for the treatment of severe to profound deafness, are addressed in policy No. SUR6150.

**\*\*\*Note: This Medical Policy is complex and technical. For questions concerning the technical language and/or specific clinical indications for its use, please consult your physician.**

### Policy

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**BCBSNC will provide coverage for the Implantable Bone Conduction Hearing Aid when it is determined to be medically necessary because the medical criteria and guidelines shown below are met.**

### Benefits Application

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Please refer to Certificate for availability of benefits. This policy relates only to the services or supplies described herein. Benefits may vary according to benefit design, therefore certificate language should be reviewed before applying the terms of the policy.

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### When the Implantable Bone Conduction Hearing Aid is covered

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- A. An implantable bone conduction hearing aid may be considered medically necessary in patients that meet the following criteria:
1. **Bilateral** hearing loss with 25 **dB** or worse air conduction threshold in the better ear, **AND**
  2. Hearing loss is not correctable in at least one ear by medical or surgical intervention, **AND**
  3. Patient is unable to use conventional air conduction hearing aids in either ear because of **any one** of the following reasons:
    - a. **congenital** or surgically induced **malformations** (e.g., **atresia**) of the **external ear canal** or **middle ear**; **OR**
    - b. **chronic external otitis** or active **chronic** suppurative **otitis** media, provided that the condition can not be corrected by medical or surgical management as documented by appropriate medical records; **OR**
    - c. tumors of the **external** canal and/or **tympanic cavity**; **OR**
    - d. **dermatitis** of the **external** canal refractory to medical management as documented by medical records,
- AND**
4. The patient meets the FDA audiologic criteria for use of the specific model requested,
- OR**
- B. On an individual consideration basis for children  $\leq 5$  years old with unilateral **congenital atresia** of the **ear canal** or **middle ear** in the presence of a maximum conductive hearing loss and adequate **cochlear (inner ear)** function. Adequate **cochlear** function is demonstrated audiologically when stimulation via bone conduction results in significantly improved and functional hearing in the involved ear.
- C. For children and patients with **congenital malformations**, sufficient bone volume and bone quality must be present for a successful fixture implantation. Alternative treatment such as conventional bone conduction hearing aids, should be considered for patients having a disease state that might jeopardize osseointegration.

### When the Implantable Bone Conduction Hearing Aid is not covered

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An implantable bone conduction hearing aid is not covered for indications other than those listed above.

The use of an implantable bone conduction hearing aid in persons with single-sided deafness (unilateral deafness in one ear while the other ear has serviceable hearing) is considered not medically necessary.

**Bilateral** implantation of bone conduction hearing aids is considered not medically necessary.

### Policy Guidelines

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Hearing aids make sounds louder (amplifies) and deliver sounds to the **ear canal** or **external auditory canal**. The ear mold or hearing aid generally fits the **ear canal** closely so that only sound from the hearing aid enters the ear. The amplified sounds are then heard normally through a process known as "air conduction". When you hear normally, sound passes along the **ear canal** to the **tympanic membrane** (eardrum) making it vibrate. That is what is meant by "air conduction". These vibrations are passed to three small bones or ossicles (the malleus, incus, and stapes) in the **middle ear**. The small bones amplify the sound and send it through the entrance to the **inner ear** (oval window) and into the fluid-filled hearing organ (**cochlea**).

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The vibrations create ripples in the fluid that bend projections from tiny hair cells in the [cochlea](#), causing electrical impulses that the [auditory](#) (hearing) nerve or eighth cranial nerve, sends to the brain. The brain translates these impulses into what we experience as sound.

A bone conduction hearing aid works by conducting - or carrying - sound through the bone in the skull. This process is known as "bone conduction". The sounds are heard when the vibrations of the sound are transmitted directly from the vibrating part of the bone conduction hearing aid through the skin to the skull to the [cochlea](#), missing the outer and [middle ear](#)s. A traditional bone conduction hearing aid consists of a body-worn aid and bone conductor or vibrator fitted to a headband or a pair of specially strengthened spectacles.

Bone-anchored hearing aids are different from other forms of implanted devices used to treat hearing loss, including [cochlear](#) implants and [auditory](#) brainstem implants. A bone-anchored hearing aid (BAHA) consists of a permanent titanium fixture, or implant, which is surgically inserted into the part of the skull bone that is behind the ear. It has a separate directional microphone and a detachable [external](#) sound processor. The surgery is usually carried out in two stages. The first stage involves the insertion of a 3-4 mm titanium implant into the mastoid bone, which is the part of the skull located directly behind the ear. The second stage will be done three or four months after stage one. By this time the titanium implant should have bonded strongly to the skull bone. This is known as "osseointegration". During this stage, the implant will be connected through the skin to a small screw called a "percutaneous abutment". This is the vibrating part, which conducts sound through the skull bone to the [inner ear](#). About a month after the second stage, the processor may be used. The patient will be shown how to attach and remove the processor, which can be snapped on and off, how to use the controls and how to clean the area around the screw.

[Cochlear](#) implants and [auditory](#) brainstem implants are devices that replace the function of [cochlear](#) structures or [auditory](#) (hearing) nerves and provide electrical energy to [auditory](#) (hearing) nerve fibers and other neural tissue via implanted electrode arrays. (Refer to SUR6150 for [Cochlear](#) Implant and EBG.SUR6045 for [Auditory](#) Brainstem Implants.)

Osseointegrated implants are devices implanted in the skull that replace the function of the [middle ear](#) and provide mechanical energy to the [cochlea](#) via a mechanical transducer. The Implantable Bone Conduction Hearing Aid (BAHA) is an osseointegrated implant (sound is transmitted directly through the bones of the skull to the [cochlea](#), bypassing the [middle ear](#)) and payable as a prosthetic device if the medical necessity criteria above is met.

## Billing/Coding/Physician Documentation Information

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This policy may apply to the following codes. Inclusion of a code in this section does not guarantee that it will be reimbursed. For further information on reimbursement guidelines, please see Administrative Policies on the Blue Cross Blue Shield of North Carolina web site at [www.bcbsnc.com](http://www.bcbsnc.com). They are listed in the Category Search on the Medical Policy search page.

*Applicable codes: 69714, 69715, 69717, 69718, L8690, L8691, L8692*

BCBSNC may request medical records for determination of medical necessity. When medical records are requested, letters of support and/or explanation are often useful, but are not sufficient documentation unless all [specific](#) information needed to make a medical necessity determination is included.

## Scientific Background and Reference Sources

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BCBSA Medical Policy Reference Manual [Electronic Version]. 7.01.03, 9/27/05

ECRI Hotline Response - Bone-Anchored Hearing Aid Implants (09/15/2005) retrieved on 1/19/06 from

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[http://www.ta.ecri.org/Hotline/Prod/summary/detail.aspx?e=6&doc\\_id=7918&q=Implantable+bone+anchored+hearing+aid&anm](http://www.ta.ecri.org/Hotline/Prod/summary/detail.aspx?e=6&doc_id=7918&q=Implantable+bone+anchored+hearing+aid&anm)

Specialty Matched Consultant Advisory Panel review - 6/2006

BCBSA Medical Policy Reference Manual [Electronic Version]. 7.01.03, 12/12/06

BCBSA Medical Policy Reference Manual [Electronic Version]. 7.01.03, 8/2/07

BCBSA Medical Policy Reference Manual [Electronic Version]. 7.01.03, 9/18/07

Specialty Matched Consultant Advisory Panel review - 6/23/08

BCBSA Medical Policy Reference Manual [Electronic Version]. 7.01.03, 10/07/08.

Dumper J, Hodgetts B, Liu R, Brandner N. Indications for bone-anchored hearing AIDS: a functional outcomes study. *J Otolaryngol Head Neck Surg.* 2009 Feb;38(1):96-105.

Baguley DM, Bird J, Humphriss RL, Prevost AT. The evidence base for the application of contralateral bone anchored hearing aids in acquired unilateral sensorineural hearing loss in adults. *Clin Otolaryngol* 2006 Feb;31(1):6-14.

Kunst SJ, Hol MK, Mylanus EA, Leijendeckers JM, Snik AF, Cremers CW. Subjective benefit after BAHA system application in patients with congenital unilateral conductive hearing impairment. *Otol Neurotol.* 2008 Apr;29(3):353-58.

Kunst SJ, Leijendeckers JM, Mylanus EA, Hol MK, Snik AF, Cremers CW. Bone-anchored hearing aid system application for unilateral congenital conductive hearing impairment: audiometric results. *Otol Neurotol.* 2008 Jan;29(1):2-7.

Newman CW, Sandridge SA, Wodzisz LM. Longitudinal benefit from and satisfaction with the BAHA system for patients with acquired unilateral sensorineural hearing loss. *Otol Neurotol.* 2008 Dec;29(8):1123-31.

Hol MK, Spath MA, Krabbe PF, van der Pouw CT, Snik AF, Cremers CW, Mylanus EA. The bone-anchored hearing aid: quality-of-life assessment. *Arch Otolaryngol Head Neck Surg.* 2004 Apr;130(4):394-9.

Andersen HT, Schroder SA, Bonding P. Unilateral deafness after neuroma surgery: subjective hearing handicap and the effect of the bone-anchored hearing aid. *Otol Neurotol.* 2006 Sep;27(6):809-14.

Yuen HW, Bodmer D, Smilsky K, Nedzelski JM, Chen JM. Management of single-sided deafness with the bone-anchored hearing aid. *Otolaryngol Head Neck Surg.* 2009 Jul;141(1):16-23.

Hol MK, Bosman AJ, Snik AF, Mylanus EA, Cremers CW. Bone-anchored hearing aids in unilateral inner ear deafness; an evaluation of audiometric and patient outcome measurements. *Otol Neurotol.* 2005 Sept;26(5):999-1006.

Senior Medical Director review - 9/09

## Policy Implementation/Update Information

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6/19/06 New policy issued. Policy will be effective 7/1/06. Specialty Matched Consultant Advisory Panel review 6/1/06.

1/3/07 HCPCS codes L8690 and L8691 effective January 1, 2007 added to Billing/Coding section. (pmo)

6/18/07 CPT codes 69717 and 69718 added to Billing/Coding section. Reference source added. (pmo)

7/28/08 Specialty Matched Consultant Advisory Panel review 6/23/08. Reference sources added. No changes to criteria. (pmo)

9/22/08 Under "When Not Covered", removed "sensorineural" from statement "The use of an implantable bone conduction hearing aid in persons with single-sided deafness (unilateral ~~sensorineural~~ deaf-

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ness in one ear while the other ear has serviceable hearing) is considered not medically necessary.”  
Notification given 9/22/08. Effective date 12/29/08. (pmo)

10/26/09 Reference sources added. No changes to criteria. (pmo)

1/5/10 HCPCS code L8692 effective January 1, 2010 added to Billing/Coding section. (pmo)

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Medical policy is not an authorization, certification, explanation of benefits or a contract. Benefits and eligibility are determined before medical guidelines and payment guidelines are applied. Benefits are determined by the group contract and subscriber certificate that is in effect at the time services are rendered. This document is solely provided for informational purposes only and is based on research of current medical literature and review of common medical practices in the treatment and diagnosis of disease. Medical practices and knowledge are constantly changing and BCBSNC reserves the right to review and revise its medical policies periodically.