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MEDICAL POLICY – 7.01.158 Balloon Dilation of the Eustachian Tube

| BCBSA Ref. Policy: | 7.01.158 | |
|--------------------|---------------|---------------------------|
| Effective Date: | Dec. 1, 2024 | RELATED MEDICAL POLICIES: |
| Last Revised: | Nov. 11, 2024 | None |
| Replaces: | N/A | |

Select a hyperlink below to be directed to that section.

POLICY CRITERIA | DOCUMENTATION REQUIREMENTS | CODING RELATED INFORMATION | EVIDENCE REVIEW | REFERENCES | HISTORY

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Introduction

The eustachian tube is a small, hollow structure that connects the middle ear to the back of the nose. Each ear has an eustachian tube, which is usually filled with air. Its function is to keep pressure inside the ear the same as the pressure outside of the body. It does this by opening and closing, like a valve. These are the tubes that open as a person swallows or yawns, and that make your ears "pop" when you change altitude. If one or both tubes aren't able to open and close properly, this can lead to symptoms like muffled hearing, a feeling of fullness in the ear, ringing in the ear (tinnitus), and feeling dizzy (vertigo). Over time, ongoing problems with the eustachian tube(s) can lead to inflammation, damage to the eardrum, and possible hearing loss. A technique has been developed in which a small tube containing a balloon is inserted into the nose and then threaded into the eustachian tube. The tiny balloon is then inflated, which opens the tube. The balloon is left in place for a couple of minutes, deflated, and removed. This policy discusses when this technique is considered medically necessary.

Note: The Introduction section is for your general knowledge and is not to be taken as policy coverage criteria. The rest of the policy uses specific words and concepts familiar to medical professionals. It is intended for providers. A provider can be a person, such as a doctor, nurse, psychologist, or dentist. A provider also can be a place where medical care is given, like a hospital, clinic, or lab. This policy informs them about when a service may be covered.

| Procedure | Medical Necessity |
|--|---|
| Balloon dilation of the eustachian tube | Balloon dilation of the eustachian tube (BDET) for treatment of chronic eustachian tube dysfunction (ETD) may be considered medically necessary when ALL of the following criteria are met: The individual is aged 22 years or older Symptoms of obstructive ETD (aural fullness, aural pressure, otalgia [earache], and/or hearing loss) are present for at least 12 months in one or both ears that significantly affect quality of life or functional health status: Aural fullness and pressure (see Related Information) Symptoms occur only in response to barochallenge such as pressure changes while flying) A previous BDET procedure has not been performed AND A comprehensive diagnostic assessment has been performed with the following findings: (see Related Information) Abnormal tympanogram (Type B or C) (see Related Information) Abnormal tympanic membrane (retracted membrane, effusion, perforation, or any other abnormality identified on |
| | otoscopy exam) AND If applicable, there was failure to respond to appropriate medical management of potential co-occurring conditions, such as: Allergic rhinitis, rhinosinusitis 4-6 weeks of a nasal steroid spray, if indicated Laryngopharyngeal reflux Proton pump inhibitor or antacid treatment AND Other causes of aural fullness have been ruled out, such as: |



| Procedure | Medical Necessity |
|-----------|--|
| | Endolymphatic hydrops (excessive buildup of the |
| | endolymph fluid of the inner ear) |
| | \circ Extrinsic obstruction of the eustachian tube (e.g., adenoid |
| | tissue, tumor) |
| | Superior semicircular canal (SSC) dehiscence (opening in |
| | the bone covering the SSC of the inner ear) |
| | Temporomandibular joint disorders |
| | AND |
| | • If there is a history of tympanostomy tube placement, |
| | symptoms of obstructive ETD improved while tubes were |
| | patent |
| | AND |
| | There is no contraindication to the procedure (see Related |
| | Information), including patulous ETD (where the eustachian |
| | tube stays open)AND |
| | • The individual's eustachian tube dysfunction has been shown |
| | to be reversible (see Related Information) |

| Procedure | Investigational |
|-------------------------|--|
| Balloon dilation of the | BDET is considered investigational if the above criteria are not |
| eustachian tube | met. |

Documentation Requirements

The individual's medical records submitted for review for all conditions should document that medical necessity criteria are met. The record should include the following:

- Office visit notes that contain the relevant history and physical that support a diagnosis of and treatment for chronic eustachian tube dysfunction such as:
 - o Symptoms of aural fullness and pressure are present
 - Symptoms are continuous rather than episodic
 - Symptoms have been present for ≥ 12 months
 - No prior BDET has been performed
 - Tympanogram is abnormal (include tympanometry report)
 - Documentation of tympanic membrane abnormality



Documentation Requirements

- If a co-occurring condition is present such as allergic rhinitis, rhinosinusitis or laryngopharyngeal reflux, medical management has been tried and failed, including 4-6 weeks of a nasal steroid spray, if indicated.
- o Other causes of aural fullness have been ruled out or are not present
- If tympanostomy tubes have been previously placed, symptoms of obstructive eustachian tube dysfunction improved while tube(s) were patent
- No contraindications for the procedure are present
- The eustachian tube dysfunction has been shown to be reversible

Coding

| Code | Description |
|-----------------|---|
| СРТ | |
| 69705 | Nasopharyngoscopy, surgical, with dilation of eustachian tube (i.e., balloon dilation); unilateral |
| 69706 | Nasopharyngoscopy, surgical, with dilation of eustachian tube (i.e., balloon dilation); bilateral |
| Note: CPT codes | descriptions and materials are convrighted by the American Medical Association (AMA) HCPCS |

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Related Information

Symptoms of obstructive eustachian tube dysfunction (ETD) may include aural fullness, aural pressure, otalgia (earache), and hearing loss. Nearly all individuals will have aural fullness and aural pressure. Many individuals will have otalgia but hearing loss may not be present in all individuals (e.g., individuals with Type C tympanograms).

Contraindications to Balloon Dilation of the Eustachian Tube

- The following individuals should not be considered for balloon dilation of the eustachian tube (BDET):
 - Individuals with patulous ETD
 - A diagnosis of patulous ETD (where the eustachian tube stays open) is suggested by symptoms of autophony of voice (loud hearing of a person's own voice), audible respirations, pulsatile tinnitus, and/or aural fullness.
 - Individuals with extrinsic reversible or irreversible causes of ETD including but not limited to:
 - Craniofacial syndromes, including cleft palate spectrum
 - Neoplasms causing extrinsic obstruction of the eustachian tube
 - History of radiation therapy to the nasopharynx
 - Enlarged adenoid pads
 - Nasopharyngeal mass
 - Neuromuscular disorders that lead to hypotonia/ineffective eustachian tube dynamic opening
 - Systemic mucosal or autoimmune inflammatory disease affecting the mucosa of the nasopharynx and eustachian tube (e.g. Samter's triad [aspirin exacerbated respiratory disease], Wegener's disease, mucosal pemphigus) that is ongoing/active (i.e., not in remission)
 - o Individuals with aural fullness but normal exam and tympanogram
 - Individuals with chronic and severe atelectatic ears (retracted tympanic membrane [ear drum])

Reversibility of Eustachian Tube Dysfunction

Reversibility of ETD can be demonstrated by several means, including any of the following:

• The individual states that they are able to relieve the pressure by performing a Valsalva maneuver to "pop" their ears

- Performing a Valsalva maneuver produces temporary improvement of the individual's tympanogram to Type A tympanogram
- Performing a Valsalva maneuver causes the member's middle ear to aerate, which is indicated by the provider visualizing lateral movement of the tympanic membrane on otoscopy

Balloon Dilation of the Eustachian Tube Used in Combination with Other Procedures

- Individuals undergoing BDET concurrent with sinus ostial dilation should meet the same diagnostic criteria for BDET as those undergoing BDET alone.
- Individuals with a middle ear effusion at the time of BDET may benefit from concurrent myringotomy with or without tympanostomy tube placement

Evidence Review

Description

Eustachian tube dysfunction (ETD) occurs when the functional valve of the eustachian tube (ET) fails to open and/or close properly. This failure is frequently due to inflammation and can cause symptoms such as muffled hearing, ear fullness, tinnitus, and vertigo. Chronic obstructive eustachian tube dysfunction (ETD) can lead to hearing loss, otitis media, tympanic membrane perforation, and cholesteatomas (benign skin growth in the middle ear behind the eardrum). Balloon dilation of the ET (BDET) is a procedure intended to improve patency by inflating a balloon in the cartilaginous part of the ET to cause local dilation.

Background

Eustachian Tube Function and Dysfunction

The ET connects the middle ear space to the nasopharynx. The ET ventilates the middle ear space to equalize pressure across the tympanic membrane, clears mucociliary secretions, and



protects the middle ear from infection and reflux of nasopharyngeal contents.¹ Normally, the tube is closed or collapsed and opens during swallowing, sneezing or yawning. ETD occurs when the functional valve of the ET fails to open and/or close properly. This failure may be due to inflammation or anatomic abnormalities. Symptoms of chronic obstructive ETD can include aural fullness, aural pressure, hearing loss, and otalgia. In milder cases, eustachian tube dysfunction may only be apparent in situations of barochallenge (inability to equalize with rapid barometric pressure changes), with otherwise normal function in stable ambient conditions.²

Diagnosis

Because the symptoms of ETD are nonspecific, clinical practice guidelines emphasize the importance of ruling out other causes of ETD with a comprehensive diagnostic assessment that includes patient-report questionnaires, history and physical exam, tympanometry, nasal endoscopy, and audiometry to establish a diagnosis.²

Medical and Surgical Management of Eustachian Tube Dysfunction (ETD)

Medical management of ETD is directed by the underlying etiology. Treatment of identified underlying conditions, such as systemic decongestants, antihistamines, or nasal steroid sprays for allergic rhinitis; behavioral modifications and/or proton pump inhibitors for laryngopharyngeal reflux; or treatment of mass lesions, may be useful in resolving ETD.

Individuals who continue to have symptoms following medical management may be treated with surgery such as myringotomy with the placement of tympanostomy tubes or eustachian tuboplasty. These procedures create an alternative route for ventilation of the middle ear space but do not address the functional problem at the eustachian tube. There is limited evidence and no randomized controlled trials (RCTs) supporting use of these surgical techniques for this indication.³ Additionally, surgery may be associated with adverse events such as infection, perforation, and otorrhea. Tympanostomy tube placement may be a repeat procedure for the life of the individual, and the risk of complications from tympanostomy tubes increases with increasing numbers of tube placements and duration of tube placement.

Balloon Dilatation of the Eustachian Tube

Balloon dilation is a tuboplasty procedure intended to improve the patency of the cartilaginous ET to cause local dilation. During the procedure, a saline-filled balloon catheter is introduced into the ET through the nose using a minimally invasive transnasal endoscopic method. Pressure is maintained for approximately two minutes or less, after which the balloon is emptied and removed. The procedure is usually performed under general anesthesia.^{4,5}

Balloon dilation of the eustachian tube can be done as a standalone procedure or in conjunction with other procedures such as adenoidectomy, intranasal surgery (e.g., septoplasty, turbinate procedures or sinus surgery), surgery for obstructive sleep apnea or sleep disturbed breathing, and myringotomy with or without tympanostomy tube placement. This policy addresses BDET as a standalone procedure.

Summary of Evidence

For individuals who have chronic obstruction ETD despite medical management who receive balloon dilation of the ET, the evidence includes RCTs, prospective observational studies, case series, and systematic reviews of these studies. The relevant outcomes are symptoms, change in disease status, quality of life, and treatment-related morbidity. Two 6-week RCTs found more improvement with balloon dilation plus medical management than medical management alone on patient-reported symptoms, ability to perform a Valsalva maneuver, proportion of individuals with normalized tympanograms, and otoscopy findings. Durability of these effects was demonstrated at 52 weeks in the uncontrolled extension phase of both RCTs. No serious deviceor procedure-related adverse events were reported through 52 weeks of follow-up. Multiple observational studies and case series have reported that individuals experienced improvement when comparing symptoms before and after balloon dilation. The evidence is sufficient to determine that the technology results in an improvement in the net health outcome.

Ongoing and Unpublished Clinical Trials

Some currently ongoing and unpublished trials that might influence this review are listed in **Table 1** below.

| NCT No. | Trial Name | Planned | Completion |
|--------------------------|--|------------|---|
| | | Enrollment | Date |
| Ongoing | | | |
| NCT05719207 | Efficacy of Balloon Dilation of the Eustachian Tube in Eustachian Tube Dilatory Dysfunction | 76 | Dec 2024 |
| NCT05998356 | Long-term Assessment of Balloon Eustachian Tuboplasty for Obstructive Eustachian Tube Disease: A Multicenter Single-blinded Randomized Controlled Study | 96 | Jan 2027 |
| Unpublished | | | |
| NCT03499015 | Balloon Dilation of the Eustachian Tube in Children: a Randomized Side-controlled Clinical Trial | 50 | Oct 2020 (recruitment status unknown; last update Nov 2018) |
| NCT04136977 ^a | XprESS Eustachian Tube Balloon Dilation Registry | 169 | Aug 2020 (completed; results submitted July 21, 2021, but quality control review process not yet concluded) |
| NCT03886740 | Tympanostomy Tubes Versus Eustachian Tube Dilation | 32 | Aug 2021 (withdrawn, difficulty enrolling) |
| NCT05270031 | Balloon Dilation of the Eustachian Tube | 58 | Feb 2026 (terminated, lack of funding) |

Table 1. Balloon Dilation of the Eustachian Tube

NCT: national clinical trial ^aDenotes industry-sponsored or cosponsored trial.

Clinical Input from Physician Specialty Societies and Academic Medical Centers

While the various physician specialty societies and academic medical centers may collaborate with and make recommendations during this process, through the provision of appropriate reviewers, input received does not represent an endorsement or position statement by the physician specialty societies or academic medical centers, unless otherwise noted.

2020 Input

Clinical input was sought to help determine whether the use of BDET for individuals with chronic obstructive ETD despite medical management would provide a clinically meaningful improvement in net health outcome and whether the use is consistent with generally accepted medical practice. In response to requests, clinical input was received from 4 respondents, including 1 specialty society-level response including physicians with academic medical center affiliation and 3 physician-level responses affiliated with an academic medical center, identified by Blue Cross Blue Shield Association.

For individuals who have obstructive ETD who receive BDET, clinical input supports this use provides a clinically meaningful improvement in net health outcome and indicates this use is consistent with generally accepted medical practice in a subgroup of appropriately selected individuals using the following criteria:

- Obstructive ETD for 3 months or longer in one or both ears that significantly affects quality of life or functional health status;
- The individual has undergone a comprehensive diagnostic assessment; including history and physical exam, tympanometry if the tympanic membrane is intact, nasopharyngoscopy, and comprehensive audiometry; and
- Failure to respond to appropriate medical management of potential co-occurring conditions, if any, such as allergic rhinitis, rhinosinusitis, and laryngopharyngeal reflux, including 4-6 weeks of a nasal steroid spray, if indicated.

Practice Guidelines and Position Statements

The purpose of the following information is to provide reference material. Inclusion does not imply endorsement or alignment with the policy conclusions.

Guidelines or position statements will be considered for inclusion if they were issued by, or jointly by, a United States (US) professional society, an international society with US representation, or National Institute for Health and Care Excellence (NICE). Priority will be given to guidelines that are informed by a systematic review, include strength of evidence ratings, and include a description of management of conflict of interest.

American Academy of Otolaryngology-Head and Neck Surgery Foundation

In 2019, the American Academy of Otolaryngology published a clinical consensus statement on BDET.² The target population was defined as adults aged 18 years or older who are candidates for BDET because of obstructive ETD in 1 or both ears for 3 months or longer that significantly affects quality of life or functional health status. The expert panel concluded:

- BDET is an option for treatment of individuals with obstructive ETD.
- The diagnosis of obstructive ETD should not be made without a comprehensive and multifaceted assessment, including otoscopy, audiometry, and nasal endoscopy.
- BDET is contraindicated for individuals diagnosed as having a patulous ETD.
- Further study will be needed to refine individual selection and outcome assessment.

The authors emphasized the importance of identifying other potentially treatable causes of ETD, including allergic rhinitis, rhinosinusitis, and laryngopharyngeal reflux, and noted that medical management of these disorders is indicated prior to offering BDET. They also noted that potential risks of BDET that are relevant to individual counseling include bleeding, scarring, infection, development of patulous ETD, and/or the need for additional procedures.

National Institute for Health and Care Excellence (NICE)

In 2019, the NICE published updated guidance on BDET.¹² The guidance was based on a rapid review of the evidence,¹³ and stated, "Evidence on the safety and efficacy of balloon dilation for



eustachian tube dysfunction is adequate to support the use of this procedure provided that standard arrangements are in place for clinical governance, consent and audit." NICE standard arrangements recommendations mean that there is enough evidence for doctors to consider the procedure as an option.

The guidance also noted:

- The procedure was not effective in all patients, and there was little evidence on the benefit of repeat procedures.
- The procedure is only indicated for chronic ETD refractory to medical treatment.

Medicare National Coverage

There is no national coverage determination.

Regulatory Status

Table 2. Devices Cleared by the US Food and Drug Administration (FDA)

| Device | Manufacturer | Date Cleared | 510(k) No. | Indication |
|--|--------------------------|--------------|------------|--------------------------|
| Acclarent Aera Eustachian Tube Balloon Dilation System | Acclarent, Inc. | 01/16/2018 | K171761 | Eustachian tube dilation |
| Xpress ENT Dilation System | Entellus Medical, Inc. | 04/05/2017 | K163509 | Eustachian tube dilation |
| Nuvent Eustachian Tube Dilation Balloon | Medtronic Xomed, Inc. | 08/16/2021 | K210841 | Eustachian tube dilation |
| Audion Et Dilation System | Entellus Medical, Inc. | 04/12/2022 | K220027 | Eustachian tube dilation |
| Vensure Balloon Dilation System | Fiagon GmbH | 05/26/2023 | K230065 | Eustachian tube dilation |

Multiple devices have been given a de novo 510(k) classification by the US Food and Drug Administration (FDA) (class II, FDA product code: PNZ)



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- 11. Cutler JL, Meyer TA, Nguyen SA, et al. Long-term Outcomes of Balloon Dilation for Persistent Eustachian Tube Dysfunction. Otol Neurotol. Dec 2019; 40(10): 1322-1325. PMID 31385858
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- National Institute for Health and Care Excellence. Interventional procedure overview of balloon dilation for chronic eustachian tube dysfunction. https://www.nice.org.uk/guidance/ipg665/documents/overview-2 December 2019. Accessed October 14, 2024.

History

| Date | Comments |
|----------|--|
| 05/01/18 | New policy, approved April 10, 2018. Policy created with literature review through |
| | October 2017. Balloon dilation of the Eustachian tube for treatment of patients with |
| | chronic Eustachian tube dilatory dysfunction is considered investigational. |

| Date | Comments |
|----------|---|
| 05/01/19 | Annual Review, approved April 18, 2019. Policy updated with literature review through January 2019. references14-15 added. Policy statement unchanged. Removed HCPCS code E1399. |
| 11/01/20 | Coding update. Added HCPCS code C9745. |
| 12/01/20 | Annual Review, approved November 10, 2020. Policy updated with literature review through July 2020. references added. Policy statement changed: Balloon dilation of the eustachian tube for treatment of patients with chronic obstructive eustachian tube dysfunction may be considered medically necessary when criteria are met. |
| 12/01/21 | Annual Review, approved November 2, 2021. Policy updated with literature review through August 3, 2021; no references added. Policy statement unchanged. Remove CPT code 67999. |
| 12/01/22 | Annual Review, approved November 7, 2022. Policy updated with literature review through June 20, 2022; no references added. Minor refinements to policy statements; intent unchanged. Changed the wording from "patient" to "individual" throughout the policy for standardization. Removed HCPCS code C9745. |
| 12/01/23 | Annual Review, approved November 6, 2023. Policy updated with literature review through August 3, 2023; reference added. Policy statements unchanged. |
| 12/01/24 | Annual Review, approved November 11, 2024. Policy updated with literature review through August 1, 2024; no references added. Policy statements unchanged. |

Disclaimer: This medical policy is a guide in evaluating the medical necessity of a particular service or treatment. The Company adopts policies after careful review of published peer-reviewed scientific literature, national guidelines and local standards of practice. Since medical technology is constantly changing, the Company reserves the right to review and update policies as appropriate. Member contracts differ in their benefits. Always consult the member benefit booklet or contact a member service representative to determine coverage for a specific medical service or supply. CPT codes, descriptions and materials are copyrighted by the American Medical Association (AMA). ©2024 Premera All Rights Reserved.

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