

ENTITLEMENT ELIGIBILITY GUIDELINES

CHRONIC OTITIS MEDIA

MPC 00642
ICD - 9 318.0, 381.1, 381.2, 381.3, 381.4; 382 (Cross reference with Conductive and Sensorineural Hearing Loss and Otitic Barotrauma)

DEFINITION

Otitis Media is an inflammation in the middle ear. The middle ear is an air chamber containing the mechanism that conducts sound from the air in the external ear to the fluid in the inner ear. It includes the eardrum (tympanic membrane), the ossicles and their ligaments. Various terms are employed to categorize Otitis Media, with inconsistencies in the precise meaning of the various terms.

This guideline excludes **acute** Otitis Media. **Please note: Entitlement should be granted for a *chronic* condition only. For VAC purposes, “chronic” means that the condition has existed for at least 6 months. Signs and symptoms are generally expected to persist despite medical attention, although they may wax and wane over the 6 month period and thereafter.**

DIAGNOSTIC STANDARD

A diagnosis from a qualified medical practitioner is required. Occasionally, a tympanogram will be helpful.

Evidence of duration of a disability for at least 6 months should be provided.

ANATOMY AND PHYSIOLOGY

The usual chronology of events in Otitis Media, the various terms applied, and the categories of Otitis Media follow.

CHRONOLOGY:

The middle ear receives its ventilation and oxygen through the eustachian tube, which acts as a pressure-regulating device for the middle ear. When it is not functioning properly a condition called **aero-otitis** can develop. The term **barotrauma** may also

refer to middle ear difficulties resulting from exposure to abnormal atmospheric pressure.

The eustachian tube can remain closed for a variety of reasons. A non- functioning eustachian tube will prevent the air in the middle ear space from being exchanged with the ambient air. The result is known as **atelectasis**, i.e. the tissues of the middle ear begin absorbing the air in the middle ear. Atelectasis leads to a displacement of the drum inward, i.e. a **drum retraction**.

Following retraction, several kinds of fluid, know as **effusion**, can collect in the middle ear space. A clear, watery substance (serum) may be drawn from the surrounding tissues. A thicker substance (mucus) may be secreted from glands. Blood from ruptured vessels may collect. These three types of fluid may accumulate independently or simultaneously. The middle ear can become infected, which creates a variety of substances. If an infection is present, the effusion is described as **purulent** or **suppurative**. With time the fluid thickens and **adhesions**, i.e. bands of fibrous tissue, form on the ossicles and can ultimately destroy them.

With continuation of the infectious process, the eardrum may rupture spontaneously. This produces a discharge of purulent matter (**otorrhea**). In most cases the perforation resulting from the rupture of the eardrum will heal spontaneously. A thinner membrane at the location of the rupture may result, known as a **monomere**. Scar tissue may form, known as **tympanosclerosis**. The rupture may destroy a portion of the eardrum or create a perforation too large to heal.

A perforation which involves the margin of the eardrum may cause a **cholesteatoma**, a cystic mass. The term **keratoma** is used synonymously with cholesteoma.

Long term infections may cause pathological changes in the mucosa of the middle ear and erosion, or **necrosis** of the ossicles. It may produce acute **mastoiditis**.

When the processes of Otitis Media first occur or are readily resolved with therapy, the term **acute** is used. If the processes are still active after approximately three weeks, or if medical intervention is not successful, or if the processes have occurred so often that a permanent perforation of the tympanic membrane is present, the term **chronic** is used. If there are repeated attacks of acute Otitis Media followed by periods of normal middle ear conditions, the term **recurrent** is used.

CATEGORIES:

The common categories of Otitis Media are as follows:

- 1) **Serous Otitis Media**

There is no infection. The condition is non-suppurative. There is often no pain unless the drum is severely retracted.

2) **Secretory Otitis Media**

The mucus membranes are swollen and thickened. The effusion is mucus. If no infection is present the condition is non-suppurative. Some authorities make no distinction between secretory and serous Otitis Media.

3) **Acute Suppurative Otitis Media**

This is generally an extension of an upper respiratory infection that reaches the middle ear via the eustachian tube, or more rarely through a perforated eardrum. The main symptom is **otalgia**, a throbbing ear ache.

4) **Chronic Suppurative Otitis Media**

This type occurs when middle ear infections are not controlled. A permanent tympanic membrane perforation may result. Cholesteatomas are common in this type. If adhesions are present, the condition is referred to as **Adhesive Otitis Media**.

The hearing loss that is produced by Otitis Media depends on a variety of factors. It can result from negative middle ear air pressure, from effusion, from adhesions, from a necrosis which results in a complete disarticulation of the ossicles, and from perforation of the tympanic membrane.

CLINICAL FEATURES

Otitis Media is one of the most common causes of Conductive Hearing Loss, if not **the** most common cause. Fluctuating hearing sensitivity occurs. Perforation of the eardrum may result in ear drainage. Vertigo and/or Tinnitus may accompany Chronic Otitis Media.

Generally, Otitis Media with an intact eardrum results in minimal changes in hearing sensitivity, approximately 30 dB. There may be more of an impact on the lower frequencies, (up to about 1000 Hz), than on the higher frequencies. Ossicular discontinuities are associated with the maximum conductive hearing losses, of approximately 60 dB.

Treatment depends on the specific conditions involved. Surgery may be required depending on the reason for the dysfunction. If there is a danger that the drum may rupture spontaneously, an incision in the drum (myringotomy) may be made. If healing of a perforation does not occur, surgical repair (myringoplasty) may be performed. This procedure is one of a class of reconstructive operations called tympanoplasty. To

prevent infection or growth reaching the covering of the brain, a modified radical mastoidectomy may be performed.

Much otological surgery is devoted to improvement or restoration of function. The aim of all tympanoplasty procedures is the restoration of hearing.

PENSION CONSIDERATIONS

A. CAUSES AND/OR AGGRAVATION

THE TIMELINES CITED BELOW ARE NOT BINDING. EACH CASE SHOULD BE ADJUDICATED ON THE EVIDENCE PROVIDED AND ITS OWN MERITS.

1. Dysfunction of the eustachian tube prior to clinical onset or aggravation
Dysfunction can be influenced by, but not limited to, the following:
 - Barotrauma
 - Upper respiratory tract infection
 - Incomplete eustachian tube maturation
 - Abnormal or incomplete development of the muscles that open the eustachian tube (such as in congenital cleft palate)
 - Swelling of eustachian tube entrance in the nasopharynx due to allergy or infection
 - Swelling of adenoid tissue around the eustachian tube due to allergy or infection
 - Scar tissue after adenoidectomy
 - Improper nose blowing which may contribute to the secondary involvement of the ear during an upper respiratory infection

2. Rupture of tympanic membrane
For this factor to be considered, Otitis Media must occur before the healing of the rupture.

Rupture of the drum membrane may be caused from the outside with a dirty instrument, such as a toothpick or a hairpin. In this manner, infection can be introduced. Rupture may be also caused by indirect trauma, such as blast injuries.

3. Inability to obtain appropriate clinical management

B. MEDICAL CONDITIONS WHICH ARE TO BE INCLUDED IN ENTITLEMENT/ASSESSMENT

C. COMMON MEDICAL CONDITIONS WHICH MAY RESULT IN WHOLE OR IN PART FROM CHRONIC OTITIS MEDIA AND/OR ITS TREATMENT

- Chronic mastoiditis
- Cholesteatoma
- Tinnitus
- Vertigo
- Facial nerve paralysis
- Chronic otitis externa
- Hearing loss

Although the following conditions normally resolve completely, in some instances, permanent sequellae may result and consideration for pensioned entitlement could be considered. Medical consultation(s) should be requested on the following:

- Meningitis
- Subdural abscess
- Cerebral abscess

REFERENCES FOR CHRONIC OTITIS MEDIA

1. Canada. Department of Veterans Affairs. Medical Guidelines on *Hearing Loss*.
2. Fauci, Anthony S. and Eugene Braunwald, et al, eds. *Harrison's Principles of Internal Medicine*. 14th ed. Montreal: McGraw-Hill, 1998.
3. Hallowell Davis and S. Richard Silverman. *Hearing and Deafness*. 4th ed. Montreal: Holt Rineheart and Winston, 1978, pp 107 - 111.
4. Newby, Hayes A. and Gerald R. Popelka. *Audiology*. 6th ed. New Jersey: Prentice Hall, 1992, pp 71 - 80.
5. Paparella, Michael and Donald A. Shumrick, et al, eds. *Otolaryngology Vol II Otology and Neuro-Otology*. 3rd ed. Chapter 45. Philadelphia: W. B. Saunders, 1991.
6. Berkow, Robert and Andrew J. Fletcher, eds. *The Merck Manual of Diagnosis and Therapy*. 16th ed. New Jersey: Merck, 1992.