



## Perforated Eardrum

- What is a perforated eardrum?
- What causes eardrum perforation?
- How is hearing affected by a perforated eardrum?
- and more...

A hole or rupture in the eardrum, a thin membrane that separates the ear canal and the middle ear, is called a perforated eardrum. The medical term for eardrum is tympanic membrane. The middle ear is connected to the nose by the Eustachian tube, which equalizes pressure in the middle ear.

A perforated eardrum is often accompanied by decreased hearing and sometimes discharge. The perforation may be accompanied by pain if it is caused by an injury or becomes infected.

### *What causes eardrum perforation?*

A perforated eardrum can occur from trauma, infection, or chronic Eustachian tube disorders.. A perforated eardrum from trauma can occur:

- If the ear is struck directly
- With a skull fracture
- After a sudden explosion
- If an object (such as a bobby pin, Q-tip, or stick) is pushed too far into the ear canal

Middle ear infections may cause pain, hearing loss, and spontaneous rupture (tear) of the eardrum, resulting in a perforation. In this circumstance, there maybe infected or bloody drainage from the ear. In medical terms, this is called otitis media with perforation. Symptoms of acute otitis media include a sense of fullness in the ear, diminished hearing, pain, and fever.

In patients with chronic Eustachian tube problems the ear drum may become weakened and perforate.

On some occasions a small hole may remain in the eardrum after a previously placed pressure-equalizing (PE) tube falls out or is removed by the physician.

Most eardrum perforations resulting from trauma or an acute ear infection heal on their own within weeks of rupture, although some may take several months to heal. During the healing process the ear must be protected from water and trauma. Eardrum perforations that do not heal on their own may require surgery.

### ***How is hearing affected by a perforated eardrum?***

Usually the size of the perforation determines the level of hearing loss - a larger hole will cause greater hearing loss than a smaller hole. The location of the perforation also affects the degree of hearing loss. If severe trauma (e.g., skull fracture) dislocates the bones in the middle ear which transmit sound, or injures the inner ear structures, hearing loss may be severe.

If the perforated eardrum is caused by a sudden traumatic or explosive event, the loss of hearing can be great and tinnitus (ringing in the ear) may occur. Chronic infection as a result of the perforation can cause persistent or progressive hearing loss.

### ***How is a perforated eardrum treated?***

Before attempting any correction of the perforation, a hearing test should be performed. The benefits of closing a perforation include prevention of water entering the middle ear while showering, bathing, or swimming (which could cause ear infection), improved hearing, and diminished tinnitus. It also may prevent the development of cholesteatoma (skin cyst in the middle ear), which can cause chronic infection and destruction of ear structures.

If the perforation is very small, an otolaryngologist may choose to observe the perforation over time to see if it will close spontaneously. He or she might try to patch a patient's eardrum in the office. Working with a microscope, your doctor may touch the edges of the eardrum with a chemical to stimulate growth and then place a thin paper patch on the eardrum. Usually with closure of the tympanic membrane, hearing is improved. Several applications of a patch may be required before the perforation closes completely. If your physician feels that a paper patch will not provide prompt or adequate closure of the hole in the eardrum, or if paper patching does not help, surgery may be required.

There are a variety of surgical techniques, but most involve grafting tissue such as fascia or cartilage across the perforation to allow healing. The name of this procedure is called tympanoplasty. Surgery is typically quite successful in repairing the perforation, restoring or improving hearing, and is often done on an outpatient basis.

Your doctor will advise you regarding the proper management of a perforated eardrum.

