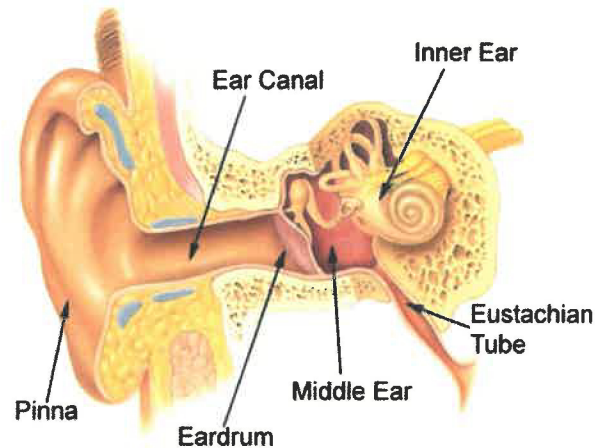


Eustachian Tube Dysfunction (ETD)

The Eustachian tubes are small, narrow passageways that connect the space behind the eardrum (middle ear) in each ear to the nose and upper throat. There are three main functions of the Eustachian tubes: (1) Ventilation (aeration) and air pressure regulation in the middle ear space, (2) Drainage of normal middle ear fluids, and (3) Preventing fluids from the nose/throat area from entering the middle ear. When a Eustachian tube is chronically blocked, the condition is called Eustachian Tube Dysfunction (ETD).



What causes ETD?

ETD results when the Eustachian tube gets inflamed and mucus, fluid and pressure build up. The most common causes include:

- ◆ Cold or flu
- ◆ Sinus infection
- ◆ Allergies
- ◆ Altitude changes

Who is most susceptible?

- ◆ **Children.** Their tubes are more horizontal in orientation than those of an adult. This makes it easier for germs to reach the middle ear and for fluid to become trapped. Also, adenoid tissue at the back of the nose can block the tubes.
- ◆ **People who smoke.** Smoking damages the cilia (the tiny hairs

that sweep mucus from the middle ear that sweep mucus from the middle ear to the back of the nose). This can allow mucus to gather in the tubes.

- ◆ **People who are obese.** Fatty deposits around the tubes can lead to chronic ETD.

What are the symptoms of ETD?

Signs and symptoms can include:

- ◆ Ears may feel plugged or full
- ◆ Sounds may seem muffled
- ◆ A popping or clicking sensation (children may say their ear “tickles”)
- ◆ Pain in one or both ears
- ◆ Ringing in the ears
- ◆ Trouble with balance

Symptoms have been known to worsen with changes in altitude. This includes flying in an airplane, riding in elevators, driving through mountains, or water diving.

How is ETD diagnosed?

ETD is diagnosed based on common symptoms and physical examination findings. During an otoscopic examination, the ENT may use an electronic device called a tympanogram to measure eardrum movement and pressure variations. There are other special tests that the ENT can perform to further evaluate the Eustachian tube appearance or function, such as a nasal scope exam.

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Eustachian Tube Dysfunction

How is ETD treated medically?

- ◆ **Leave it alone.** Most cases of simple ETD caused by a cold, or changes in altitude will self-resolve in time without any specific treatments.
- ◆ **Swallow and chew.** ETD is improved by swallowing, chewing gum, drinking, or yawning.
- ◆ **Self-Inflation.** Doing a gentle Valsalva maneuver – Take a deep breath, hold your nose and mouth closed, and try to force air up the Eustachian tubes by blowing. If you feel a “pop”, then it worked. Don’t blow too forcibly or you can make it worse, however.
- ◆ **Nasal Corticosteroids.** Steroids relieve tissue inflammation, one of the major causes of ETD. There are several types, available by prescription and over the counter.
- ◆ **Allergic Treatment.** Antihistamines may reduce the amount of rhinorrhea (runny nose) and post-nasal drainage that may be contributing to ETD. Allergy shots may also provide some benefit.
- ◆ **Decongestants.** Short-term use of a decongestant can reduce the swelling of the Eustachian tube lining.

How is ETD treated surgically?

In cases where ETD does not self-resolve or respond to medical interventions in a reasonable amount of time, surgical approaches may be suggested:

- ◆ **Myringotomy.** A tiny slit is made in the eardrum to aspirate any middle ear fluid and to allow a temporary ventilation portal into the middle ear space.
- ◆ **Myringotomy with Tubes.** A temporary tube is inserted into the slit to keep the portal open and assist

with fluid drainage, pressurization. This usually will provide relief for 6-24 months.

- ◆ **Eustachian Tube Balloon Dilation:** A long, flexible tube is inserted through the nose to place a small balloon that is inflated to open a pathway for mucus and air to flow from the Eustachian tube more freely.