



Eustachian Tube Dysfunction

What is eustachian tube dysfunction (ETD)?

The eustachian tube is a narrow tube that connects the middle ear to the junction of the nose and throat. Its functions are to maintain normal middle ear air pressure, to drain fluid from the middle ear and to protect the middle ear from nasal contents or sounds. ETD is a failure of the eustachian tube to adequately perform one or more of these functions.

What causes eustachian tube dysfunction?

ETD is most commonly caused by inadequate opening of the eustachian tube. The lining of the middle ear continuously absorbs small amounts of air and the eustachian tube must allow equivalent amounts of air to enter the middle ear to maintain normal pressure. If the eustachian tube does not open adequately then the middle ear pressure becomes negative. Less commonly, the eustachian tube fails to close completely (*patulous eustachian tubes*) allowing continuous transmission of air and sound from the nose/pharynx to the middle ear.

What symptoms can you have?

Symptoms vary from patient to patient, but most patients experience symptoms of altered middle ear pressure, characterised by fluctuating ear fullness or discomfort that is usually intermittent, but can be persistent. Patients may also experience ear blockage, crackling and popping, or tinnitus. Symptoms can be unilateral or bilateral.

How is a diagnosis made?

Diagnosis is usually clinical, meaning that an ENT surgeon will take a history and perform an examination including direct examination of the tympanic membranes (eardrums). Depending on their symptoms or the presence of concurrent ear problems, some patients will require additional investigations such as an audiogram or CT scan.

How is eustachian tube dysfunction treated?

Treatment depends on severity and on the presence or absence of concurrent ear problems. For most patients, treatment is focused on controlling exacerbating conditions and re-establishing normal middle ear aeration. Many patients will also benefit from ETD exercises:

- Take a small mouthful of water without swallowing
- Pinch your nostrils tightly closed
- Equalise ('pop') your ears by trying to breathe out firmly through your nose
- Swallow the water then release your nostrils after swallowing
- Repeat 3 times morning and night for 2 weeks

For children unable to perform these exercises, blowing bubbles through a small straw or using a eustachian tube trainer (eg. Otovent) may be recommended. Some patients may also be offered other treatment options such as middle ear ventilation tubes (grommets).

More information on eustachian tube dysfunction?

More information on ETD can be found at: *Clinical Otolaryngology - Eustachian tube dysfunction: consensus statement on definition, types, clinical presentation and diagnosis*

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