
# COMPREHENSIVE ASSESSMENT AND TREATMENT OF PATULOUS EUSTACHIAN TUBE: A MODERN DIAGNOSTIC AND THERAPEUTIC APPROACH

**Akhmedov L.L.**
**Tukhtaev M.B.**
**Republican Specialized Scientific and Practical Medical Center of Otorhinolaryngology and Head and Neck Diseases, Tashkent, Uzbekistan**

**https://doi.org/10.5281/zenodo.21054985**

**ARTICLE INFO**

Received: 25th June 2026
Accepted: 27th June 2026
Online: 29th June 2026

**KEYWORDS**

*Patulous Eustachian tube; autophony; Eustachian tube dysfunction; tympanometry; ETF test; sonotubometry; diagnosis; treatment; tinnitus*

**ABSTRACT**

*Patulous Eustachian tube (PET) is a relatively uncommon but clinically significant disorder characterized by persistent abnormal patency of the Eustachian tube. Patients commonly experience autophony, respiratory synchronous tinnitus, aural fullness, and fluctuating hearing-related complaints that considerably impair quality of life. Owing to the absence of standardized diagnostic criteria and treatment algorithms, PET remains a diagnostic and therapeutic challenge in contemporary otorhinolaryngology.*

Patulous Eustachian tube (PET) is a relatively uncommon but clinically significant disorder characterized by persistent abnormal patency of the Eustachian tube. Patients commonly experience autophony, respiratory synchronous tinnitus, aural fullness, and fluctuating hearing-related complaints that considerably impair quality of life. Owing to the absence of standardized diagnostic criteria and treatment algorithms, PET remains a diagnostic and therapeutic challenge in contemporary otorhinolaryngology.

**Objective.** To evaluate the role of a comprehensive diagnostic approach and individualized treatment strategy in patients with patulous Eustachian tube.

**Methods.** A comprehensive diagnostic protocol was developed based on current evidence and included detailed clinical history, otoendoscopy, otomicroscopy, pure-tone audiometry, tympanometry with Eustachian Tube Function (ETF) testing, sonotubometry, and dynamic assessment of tympanic membrane movement during respiration. High-resolution computed tomography of the temporal bone and nasopharynx was performed when indicated to exclude anatomical abnormalities. Therapeutic interventions were selected according to disease severity and included conservative management (hydration, body weight optimization, topical nasal therapy, and behavioral modification) as well as minimally invasive and surgical procedures in refractory cases.

**Results.** The multimodal diagnostic algorithm improved the accuracy of PET diagnosis by allowing objective confirmation of abnormal tubal patency and differentiation from obstructive Eustachian tube dysfunction. Tympanometry combined with ETF testing and dynamic otoscopic evaluation demonstrated the highest clinical value for confirming the diagnosis. Individualized treatment significantly reduced autophony, respiratory tinnitus, and

ear fullness while improving patients' quality of life. Patients receiving treatment tailored to clinical severity achieved better functional outcomes than those managed using conventional symptomatic therapy alone.

**Conclusions.** Comprehensive evaluation integrating clinical examination with functional and instrumental assessment enables accurate diagnosis of patulous Eustachian tube and facilitates appropriate treatment selection. An individualized therapeutic strategy based on disease severity provides superior clinical outcomes and may represent an effective approach for managing this challenging condition.