

Cardiff & Vale University Health Board

ENT & AUDIOLOGICAL MEDICINE DEPARTMENTS

**REFLEX TEST TO INVESTIGATE THE PRESENCE OF PATULOUS
EUSTACHIAN TUBE (PET)**

Title: Reflex Test for Patulous Eustachian Tube (PET) investigation using GSI Middle Ear Analyzer

References: GSI 33 middle ear analyzer, reference instructions.

Issue Date: September 2014

Application: Patients may report that they hear sounds along with other symptoms which need to be investigated. If the Audiological Physician should feel that these symptoms originate from a problem with the Eustachian tube they may very well investigate this further by checking if PET condition is present.

1. INTRODUCTION

The function of the Eustachian Tube is to equalize pressure in the atmosphere, with that in the middle ear cavity. There are many causes of abnormal Eustachian Tube function. Among the most common are:

- obstructions occurring as a result of an anatomic abnormality
- local mucosal changes created by otitis media or allergies
- Patulous Eustachian Tube
- Palatal Myoclonus

This protocol will cover just Patulous Eustachian Tube. PET is a condition where the Eustachian tube remains open and the flow of air when breathing causes the Tympanic Membrane to move.

Patients with suspected PET will present with any of the following symptoms:

Muffled Hearing

Autophony

Blocked feeling in the ears

Eustachian Tube function can be assessed using most conventional tympanometers. Firstly there is a need to establish a 'normal' tympanogram.

To investigate PET you will need to run contra lateral reflex decay.

Title: Patulous Eustachian tube test

Author:

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2. EQUIPMENT PREPARATION

Carry out daily checks on the relevant tympanometer, using the appropriate test cavities.

Ensure that there are a selection of clean probe tips available for test procedure.

3. TEST PREPARATION

The patient's notes will accompany the patient, and are examined by the tester prior to the test.

The tester should ensure that the notes correspond to the patient; in order to obtain a medical history and to determine the requirements of the referring body.

Every reasonable precaution should be taken in order to avoid the possibility of injury or cross infection, through contact with the test equipment or suite facilities.

The Clinician should introduce him/herself, and any support staff, to the patient.

A visual examination of the patient's ears is made using an auroscope in order to check the status of the external auditory meatus and to observe any contra-indications to testing.

4. PATIENT PREPARATION

The patient should be informed that the test purpose is to measure the function of the Eustachian Tube, by the introduction of a small probe to the external auditory meatus. He/she should be told that they may hear a "buzzing" noise.

Patient instruction:

Request the patient to keep very still throughout the procedure, unless otherwise instructed.

5. TEST PROCEDURE

Check the patient's ear for any wax, infection etc. Also assess the size and shape of the ear for selection of appropriately sized probe tip.

Position the test probe in the ear to obtain a good acoustic seal.

From the main control panel, select 'Special' This will open the Reflex decay screen.

Select Contra not Ipsi to run the test.

(no need to put the contra lateral probe in the other ear as no acoustic stimuli should be used during the test. We just want to monitor the tympanic membranes behaviour in quiet).

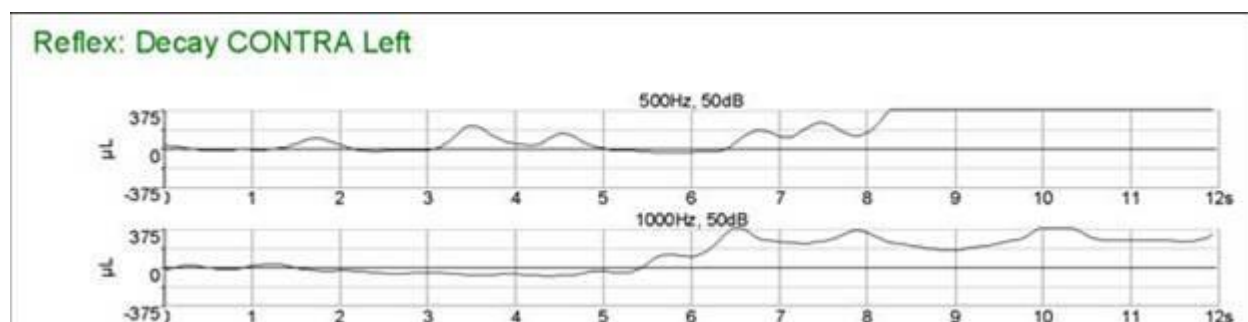
Press the left arrow (start) to pressurise '←'

Once pressurised press the 'present' button. If the ear is adequately pressurised the equipment will monitor the status of the test ear for 15 seconds. Before you pressurise ask the patient to take slow deep breaths in and out through the nostrils. If there is a true condition of PET then you will see oscillations with smooth undulations. Run the test again and ask the patient to hold their breath, no response should be seen.

Repeat test for the other ear if required or requested by Audiological Physician.

Interpretation:

PET: Due to respiratory movement through a patulous and open ET, the respiratory movement can be recorded. To confirm it is due to respiration, testing is done with breath holding: no response seen. Then do with deep breaths ideally through the nose and oscillations will be seen as smooth undulations



6. WHAT TO DO WITH RESULTS

Once test is complete, print off the results obtained and pass them on to the doctor who requested the test.