

SLHS 577: AUDITORY EVOKED RESPONSES II

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Goals/Objectives

1. Develop an understanding of the acoustic responses reflecting cochlear nonlinearity; neural bases of brainstem, thalamic, and cortical level auditory evoked responses and; utility of these responses in intraoperative monitoring.
2. Develop skills to administer and interpret these evoked responses for use in neuro-otologic diagnosis and intraoperative monitoring.
3. Develop skills to select and recommend the appropriate evoked response test to assess peripheral functional integrity (cochlea), and central functional integrity (brainstem, thalamus, and cortex).

Text Book

1. Burkard RF, Don M, and Eggermont JJ . Auditory Evoked Potentials: Basic Principles and Clinical Application.
2. Katz J (2002,5th edition). Handbook of clinical Audiology,

Other assigned readings

Course Format: Lecture/Seminar

Assessment: No exams. Course Grade will be determined by successful completion of laboratory assignments (40%); class presentations (30%); and a term paper in one of the areas presented in the course (30%). Term paper and the last lab assignment are due during the last week of class.

Course Syllabus

1. Otoacoustic emissions (OAE) (1. Ch. 8; 2. Ch 22 and other assigned readings)

Introduction

Types: Spontaneous; Transient; distortion product

Characteristics of each type

Generators

Clinical utility

(Lab 1)



College of Liberal Arts

2. Auditory Steady State Responses (ASSR) (1. 21; 2. Ch 17 and assigned Articles)

Introduction

Effects of stimulus factors on the SSEP components

Effects of recording factors on the SSEP components

Effects of subject factors on the SSEP components

Neural Generators of the SSEP components

Effects of lesions on the SSEP components

Recording strategy and protocol for clinical application **(Lab 2)**

3. Auditory Middle Latency Response (AMLR) (1. Ch 22; 2.Ch 19)

Response components and characteristics

Effects of stimulus factors on the AMLR components

Effects of recording factors on the AMLR components

Effects of subject factors on the AMLR components

Neural Generators of the AMLR components

Brain Mapping of AMLR

Effects of lesions on the AMLR components

Recording strategy and protocol for clinical application **(Lab 3)**

4. Auditory Late Evoked Responses (ALR) (1. Chs. 23 & 24; 2. Ch 20)

Effects of stimulus factors on the ALR components

Effects of recording factors on the ALR components

Effects of subject factors on the ALR components

Neural Generators of the ALR components

Brain Mapping of ALR

Effects of lesions on the ALR components

Recording strategy and protocol for clinical application **(Lab 4)**

5. Neurophysiologic Intraoperative Monitoring (1. 17; 2. Katz, Ch18).

Introduction and rationale

Types of surgery

Mechanisms for intraoperative evoked response

Alterations

Sensitivity and specificity of neuromonitoring Information

Protocol

6. Other evoked potentials (time permitting)