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# Auditory Evoked Potential Assessment

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*This document outlines procedures to assess auditory function using electrophysiological methods.*

## **Expected Outcomes**

An auditory evoked potential (AEP) assessment objectively examines the auditory pathway from the cochlea to the cortex. This electrophysiological information assists in differential diagnosis and in estimating hearing thresholds and central auditory function. The assessment may result in recommendations for treatment, follow-up or in referral for other services.

## **Clinical Indications**

An auditory evoked potential assessment is indicated for objective evaluation of hearing thresholds or function. Assessments are conducted with clients who are not able to be tested by conventional behavioural methods, such as infants, or to supplement behavioural information or to resolve conflicting diagnostic information.

Auditory evoked potential procedures may be indicated for clients of all ages presenting with suspected central or peripheral auditory or vestibular system disease or disorder.

## **Clinical Process**

The Client is prepared for the procedure using recording electrodes applied with accepted techniques and following recommended infection control procedures.

AEP procedures include:

- Electrocochleography (ECoChG)
- Auditory brainstem response (ABR)
- Middle latency response (MLR)
- Cortical auditory evoked potentials (CAEPs) / late latency response (LLR)
- Auditory steady state response (ASSR)

Meaningful data descriptors (typically peak latencies and amplitudes and interpeak comparisons) are measured from the evoked responses and are compared with normative data and other test results.



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When testing under general anaesthetic or sedation, relevant guidelines and safety procedures should be followed.

### Documentation

The documentation should include comments about recording and stimulus parameters (e.g. stimulus rate, stimulus type, electrode montage, transducer type etc), ambient noise levels (including equipment noise), subject state during testing, pertinent background information, assessment results, interpretation and specific recommendations. Recommendations may address the need for further assessment, follow-up or referral.

### Settings and Equipment

All procedures should be carried out on equipment that is calibrated and that complies with the electrical safety requirements of the organisation. Calibration and electrical safety checks should occur at regular intervals throughout the lifespan of the equipment. Electrical noise in the environment should be kept to a minimum and ideally should not interfere with recording. Equipment stimulus and recording parameters may need to be modified to achieve this when recording conditions are poor. All auditory evoked potential results should be interpreted in view of the electrical and ambient noise levels.

Ambient noise levels need to be minimised and where possible should meet standards for audiometric testing. Particular care should be taken to ensure that ambient noise levels meet audiometric standards for bone conduction testing, if the ears are not occluded by insert earphones.

For a number of reasons (e.g. comfort during prolonged testing, increased inter-aural separation, avoidance of earcanal collapse), insert earphones are recommended for air conduction evoked potential assessments.

### Related References

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