

Facial and auditory nerve study for acoustic neuroma surgery

Purpose of the study

Before the operation of an acoustic neuroma (a tumour of the auditory nerve), we will study the function of your facial and auditory nerves. This will involve electroneuromyography (ENMG) of the facial muscles and brainstem auditory evoked potential (BAEP) test of your auditory nerve. During the operation, the activity of the same nerves will be monitored in an effort to prevent new nerve injuries from occurring. ENMG will be done before the operation and about one month afterwards, if needed.

Preparing for the study

- Earwax in the ear canal may affect examination results. Please arrange an appointment at your local health centre, where a nurse can clean or rinse out the ear canals before the examination. The ear canals must be clean because earwax blockage can distort the results of the BAEP.
- You can take any regularly taken medicine as you normally would. You can also eat and drink normally before the examination.
- If you are using blood thinner medicine, please inform the physician before the examination.
- The skin on your face must be clean. Avoid oiling your skin on the examination day, as excess oil on your skin will make the examination more difficult. Your face will be cleaned with a cleanser shortly before adhesive pads are applied for the study.

Facial ENMG (electroneuromyography)

Small measuring pads will be applied to your skin over several facial muscles. Electrical impulse will be used to stimulate the facial nerve near the angle of your jaw and the resulting muscle activation is recorded with the monitoring equipment. In addition, we will use a thin needle to study your facial muscles. The needle study only takes a few minutes for each muscle. Usually 3 to 5 muscles are studied. ENMG generally takes only 30 to 45 minutes overall.

BAEP (brainstem auditory evoked potential)

The BAEP examination does not cause pain and it lasts for about an hour. Adhesive labels are placed on the surface of the skin on your forehead. Audio stimuli (clinging and noise) are played and measured alternately in both ears via ear-plug-like measurement sensors placed in your ear canals. During the examination, you will rest, as relaxed as possible, either lying on your back or in a half-sitting position.

After the study

A needle stick can cause a bruise that will heal over time. On the evening of the examination day, there may be after-sensations at the injection points, but they will pass by themselves. You can take one tablet of an over-the-counter pain medicine to treat any pain.

A clinical neurophysiologist will analyse the examination and write a report. The results will be forwarded to the surgeon and will be used to create an appropriate nerve monitoring plan for the operation. The results will also be compared to the outcome after the operation so that possible changes can be evaluated.