

Video EEG (VEEG), children

You can find illustrated information (for shorter EEG examination) for children at <https://hoito-ohjeet.fi> using the search term "Retki aivojen maailmaan" (PDF, Finnish)

Purpose of the video EEG test

EEG (electroencephalography) is a technique used to record electrical brain activity (brain waves). The test consists of EEG recording combined with video recording. An EEG can be used to help diagnose and monitor a number of conditions affecting the brain. It may help identify the cause of certain symptoms – such as seizures (fits) – or find out more about a condition you have already been diagnosed with. The main use of an EEG is to detect and investigate epilepsy, a condition that causes repeated seizures.

Preparing for the test

Before the test begins, it is important that your child's hair is clean and dry. After washing the hair, do not use hair spray, hair gel or any other hair styling products.

Unless you have received other instructions and your child is taking medicines, you should continue to give them as normal. Having a breakfast before the test is recommended.

In some cases, you may be asked to keep your child awake before the test to help ensure they can sleep while it's carried out. This is called a sleep-deprived EEG. In this case, the following awake times are to be followed the night before the test:

- Child aged 0-1 year: awake for one feeding interval.
- Child aged 1-2 years: awakened at 5 AM (05:00), no daytime naps before the test.
- Child aged 2-7 years: allowed to sleep between 11 PM and 4 AM (23:00-04:00).
- Child/adolescent aged 8-16 years: allowed to sleep between 11 PM and 2 AM (23:00-02:00)

It is important to stay awake also on the way from home to the hospital. Cola, tea, coffee or other refreshing drinks can be enjoyed in the evening, but no longer after 12 PM (24:00).

The hospital provides your child with the clothes you will be wearing during the test. However, if the child prefers to wear their own clothing, choose cotton clothing that does not collect static electricity. Static electricity may interfere with the operation of the EEG recording device. The shirt should have buttons on the front.

For small children, you should bring the items necessary for falling asleep: baby bottle, pacifier, comforter or similar items, which will help the child to calm down and fall asleep. You may also bring along something to entertain the child, e.g. a favorite book or toy. The department has a variety of toys and games, DVDs and books.

How the test is done

Your child will feel little or no discomfort during an EEG. The electrodes don't transmit any sensations, they just record your brain waves. The test takes usually around 24 hours. You will be spending your time in a room equipped with a TV set, beds and separate toilet facilities. Your child is not allowed to leave the room during the test, but they can move around in the room and for example watch TV, listen to music, read or play.

A technician attaches discs (electrodes) to the scalp using a soft water-soluble adhesive paste. Some electrodes will also be applied on the shoulders and chest to record heart rate and muscle activity. This does not hurt but some children do not like it. While all the electrodes are being applied, your child can sit on a chair, the bed, or your lap, and can play with toys. The electrodes are connected with leads to an instrument that amplifies the brain waves and records them on computer equipment.

The technician monitors your child continuously throughout the test in a control room. If your child is old enough, the technician may ask them to do some tasks during the test, such as close their eyes for short periods of time, take deep breaths or look at flashing lights. If your child has symptoms or a seizure during the recording, the technician will do some additional testing while taking care of their security.

After the study

The wires will be detached from the examination equipment after the examination has ended. Electrodes attached to the skin of the head with a water-soluble paste are best removed in the shower or bath. A clinical neurophysiologist will analyze the recording and write a detailed report. The report is directed to the department that ordered the EEG. They will inform you of the test results and any possible follow-ups.

Information for the parents

A parent or other trusted adult must be present with the child undergoing an EEG test. The technician monitors the EEG recording in the next room and cannot be present with the child. The parents also help to identify symptoms suggestive of a seizure and create a sense of safety and comfort for the child. Parents also know best their child's habits and their presence promotes the child's ability to cope with the long test. Good cooperation guarantees good data quality.

The parent/adult who accompanies the child will also be served meals during the day. A bed is available in the room for the parent/adult for the overnight stay.