Electrodiagnostic Testing at RCH

There are two main Electrodiagnostic Tests performed at The Royal Children's Hospital:

An Electroretinogram (ERG) to check how well the retina inside the eye works.

A Visual Evoked Potential (VEP) to check the connection between the eye and the brain.

Either or both of these tests may be requested by your child's doctor to help answer questions about how well your child can see or to help confirm their diagnosis.

How does it work?
The retina (back of the eye) and the parts of the brain concerned with vision create tiny electrical pulses when there is a flash of light or when we look at something different. The tiny pulses are recording and analysed to tell us how well different parts of the eyes and brain are working.

What is involved?
Wires will be attached to your child's face and head with a salt-based paste and a small piece of paper tape.

The wires detect the electrical pulses made by the eyes. The children do not feel anything while the recording is happening, the wires simply record the normal activity of the eyes.

None of the testing will hurt your child, although very young children may not like having the small pieces of paper tape on their face or head.

What will happen during an ERG test?

1. For ERG testing, the first part of the test involves putting drops into the child's eyes which makes the pupils bigger. There might be some stinging immediately after the drops are put in. This only lasts a few seconds. The pupils may stay big for up to 24 hours. Vision may be blurry for a few hours after the drops are put in.

2. The ERG tests the parts of the eye used for night vision first, so instead of normal room lighting, a red light is used. You will be with your child at all times and younger patients sit on a parents lap during the test.

3. The wires are now put on the child's face and head and they are ready to be tested.

4. When the ERG test begins, the patient faces a small screen which flashes different coloured lights. The different flashes of light stop and start for about 10 to 15 minutes.

What will happen during a VEP test?

The VEP test is done in normal room lighting and the patient does not need eye drops.

1. In most cases, three wires will be attached to your child's head with a salt-based paste and a small piece of paper tape.

2. The child watches either a light flashing or a pattern on a large computer screen. This test takes about half an hour.

Will the test hurt?
No. The tests are entirely painless although there may be some discomfort for a few seconds after putting in the eye drops

The main complaint from children is that they are not free to move around as the wires are less than a meter long.

Other information for parents
It is generally preferred that only one parent sits with the child for testing. If siblings attend the appointment it is necessary for them to remain in the waiting room with another parent or carer.

How long will these tests take?
Depending on how many tests are done, 45mins to 90mins

What should I do before the tests?
Give normal medication as usual. Children can eat and drink as normal. Bring any glasses your child wears.

For babies
Best test results are obtained if your baby is awake and settled.
If your appointment time clashes with your child's normal nap time then please contact us on
(03)9345 6347 so your appointment time can be altered to give best possible results.
Bring familiar toys or favourite blanket (squeaky toys and rattles OK, toys with lights are not permitted)
Bring a dummy/pacifier if it is likely to help keep your baby settled
Bottle if likely to be hungry – a microwave is available

For older children
No cosmetics/make-up or hair gel.
No chewing gum

What will happen after the tests?
A detailed report of the test results will be sent to your ophthalmologist which they can discuss with you at your next appointment.

Where are these tests performed?
The EDT test room is located on the Ground Floor of the Royal Children's Hospital in the Specialist Clinics at Desk A5.

This form gives general information.