Auditory Brainstem Response Testing with Sedation

Information for patients, parents, and carers

What is an Auditory Brainstem Response (ABR) test?
An ABR test can be used to assess your child's ability to hear. It involves placing small sensors (electrodes) on your child's head and playing sounds through a small headphone, which is positioned either in or on the ear. The sensors are used to find out if your child's brainstem (lowest part of the brain) responds to sounds being played through these headphones.

ABR tests are safe and will not hurt your child. They are very useful for children who can't have their hearing tested because they find it hard to follow instructions and/or sit still.

Other tests may also be used to check your child's hearing:

Tympanometry - A small probe is placed in your child's ear. This test can be useful to assess for a blockage in your child's middle ear, which can affect hearing.

Otoacoustic Emissions - A small probe is placed in your child's ear. This test is used to measure how well your child's inner ear (cochlea) is working.

Auditory Steady State Response – This test uses the same sensors and headphone as the ABR test. It is another way of measuring your child's ability to hear.

If you have any questions about your child's planned hearing test, please contact Children's Audiology Service on 8303 1530. An audiologist (hearing expert) from this service will talk with you about your child's results straight after their test**.**

Why do we give sedation for an ABR test?
Your child needs to remain very still during their test so that we can accurately assess their hearing. Testing can take between 60 to 120 minutes.

How sedated will my child be?
Your child will be put into a deep sleep to keep them very still. They will not be able to talk or respond to gentle touch, including the stimulation from having testing equipment on them.

What sedating medicine do we usually give for ABR testing?
Usually, we use dexmedetomidine, a useful sedative and anaesthetic medicine. It provides sedation that is like a natural sleep. It also reduces anxiety, provides pain relief, and your child is less likely to need a general anaesthetic for their hearing test This medicine has very little effect on your child's breathing.

What if my child needs more sedation for their ABR test?
After having dexmedetomidine, if your child is still moving too much for their test, we can give another sedative medicine called midazolam.

Midazolam belongs to the same family as diazepam. It has a calming effect and helps your child forget their hearing test.

Are there any side effects from sedation medicines?
These medicines will make your child very sleepy. It may take a few hours for them to fully wake up after. They may have a low heart rate, but this will increase again as they wake up.

Midazolam can sometimes make your child agitated or upset instead of sleepy. They will settle again with cuddles and reassurance, but this might take some time.

How do we keep your child safe?
Your child will be monitored (checked) by our staff the whole time they are sedated. We will check their heart rate (pulse), oxygen levels, breathing, and continuously observe their progress.

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Why does my child need to fast?
Although dexmedetomidine does not commonly cause nausea and vomiting, your child will still need to fast to keep them safe. We will tell you how long before their ABR test they need to stop eating and drinking.

How can I help my child before their ABR test?
Let them know what will happen in a way they can understand. Tell your child they will be asleep, comfortable, and safe.

Carefully follow the instructions you were given about how to prepare for the ABR test.

How can I help my child during the procedure?
Having an adult with your child that they trust is very helpful.

Keeping your words positive and encouraging is also very important.

Use your regular settling techniques to encourage your child to sleep once the medicine has been given. Be available for cuddles, and to help with resettling if required.

After the procedure
Your child may sleep for a few hours after the ABR test is finished. We will closely monitor them.

Your child will need to stay at the hospital until the effects of the medicines have worn off. Their recovery time will depend on your child's age, the medicine used, and your child's medical history.

Our staff will tell you when your child is able to go home. They must be fully awake and have had something to eat and drink.

After leaving the hospital:

- For 24 hours after leaving the hospital, your child may be sleepy or clumsy due to delayed effects of the medicine.
- You should take your child home in a private car. We strongly advise you have 2 adults with your child during the drive home – one to drive and the other to watch your child.
- Put your child in their usual child restraint (e.g., car seat). Position them so that, if they fall into a deep sleep, their head will not fall forward. This makes it hard for them to breathe.
- Sometimes, even though your child was awake when leaving the hospital, they may still go into a deep sleep.
- **Should your child fall asleep within 2 hours of leaving the hospital, check them every 10 minutes to make sure you can wake them. If you are the only adult in the car, pull over every 10 minutes to check this.**
- Your child can start to eat and drink normally once they are no longer sleepy.
- Occasionally, your child may vomit. Do not worry if they vomit once or twice, but if they keep vomiting take them to a doctor.
- For 24 hours after having a sedative medicine your child should not:
  - Climb on equipment
  - Ride a bike
  - Drive
  - Swim
  - Use machines or toys that might cause an accident

If you are concerned about your child, bring them back to the hospital.

If you cannot wake your child, ring emergency services (000) straight away.

For more information
Women's and Children's Hospital
Surgical Services
72 King William Rd, North Adelaide SA 5006
Telephone (08) 8161 7000

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