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Patient information

Auditory Brainstem Response (ABR) under General Anaesthetic



(Centres for disease control and prevention, 2021)



Introduction

Welcome to Barts Health NHS Trust Paediatric Audiology department.

We have attempted to test your child's hearing on several occasions in clinic and have not been able to obtain reliable results. Following these behavioural hearing tests, you have met with the Audio-Vestibular Physician (AVP), who has discussed with you the need to perform a hearing test under general anaesthetic (GA).

The purpose of this leaflet is to outline what an Auditory Brainstem Response test (ABR) under general anaesthetic entails, why it has been recommended by the AVP and what to expect before, during and after testing.

References

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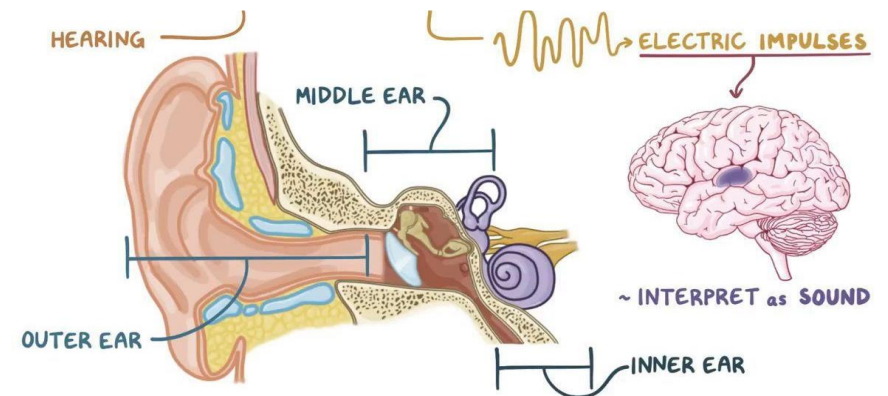
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What is a GA Auditory Brainstem Response test?

'GA' stands for General Anaesthetic. A GA is a type of medicine that is given to patients to put them into a deep sleep before a medical procedure. It is usually given within the setting of an operating theatre as the equipment and staff required to monitor the patient are available in this setting.

An ABR test is a type of hearing test that measures how well different levels of sounds are detected at the brainstem. The brainstem is the lower part of the brain connected to the spinal cord and is the location where sound signals are interpreted as recognisable sounds. This test requires patients to be in a deep sleep.



(Osmosis, 2022)

Why has a GA-ABR been recommended for your child?

There are many reasons why an AVP or Audiologist may recommend that your child undergoes this procedure. These will have been discussed with you in detail before your child is added to the waiting list.

They include concerns from yourself and/or the doctor / audiologist that your child may have a hearing loss. Usually this procedure is recommended when we are unable to confirm this with regular tests.

Is a GA – ABR a ‘surgical procedure’?


No, the ‘ABR’ is a hearing test that does not involve any operating/cutting.

If your child is due to have an ear related surgical procedure during the same anaesthetic session, then this will have been discussed with you by the AVP.

Contact Information:

Once you have been contacted with a date, if you have a query regarding admission details, including fasting rules, please contact the Royal London Hospital admissions office on **020 3594 6739**.

If you have a query regarding the test results after the procedure, please contact your audiology department. The contact details are provided below.

<p>Paediatric Audiology Hackney Ark Downs Park Road London E8 2FP Tel: 020 7014 7010 Email: BHNT.HackneyArkAudiology@nhs.net</p>		<p>Paediatric Audiology West Ham Lane Health Centre 84 West Ham Lane London E15 4PT Tel: 0207 363 9097 Email: newhampaedaudiology@nhs.net</p>
<p>Paediatric Audiology Wood Street Health Centre 1st Floor 6 Linford Road E17 3LA Tel: 0208 430 7830 Email: bhnt.paediatricaudiologywx@nhs.net</p>	<p>Paediatric Audiology Loxford Polyclinic 417 Ilford Lane Ilford IG1 2SN Tel: 0300 300 1580 Email: bhnt.paediatricaudiologywx@nhs.net</p>	

How long will the GA-ABR take?

On average your child will be under anaesthetic for 90-120 minutes. Sometimes this will be longer if we need to get more information and sometimes this will be less. You will be asked to wait in the day surgery unit and you will be informed once the procedure is finished. Please set aside the entire day to allow for the procedure to take place including recovery from your child's GA and any on day theatre delays. Your child will need to fast beforehand therefore you will need to be prepared for this; especially if you have an afternoon appointment.

When will I get the results of the hearing test?

Following the test your child will be placed in the recovery ward where the audiologist will meet with you to briefly discuss the results before completing a written report. The test results may also be reviewed by another audiologist.

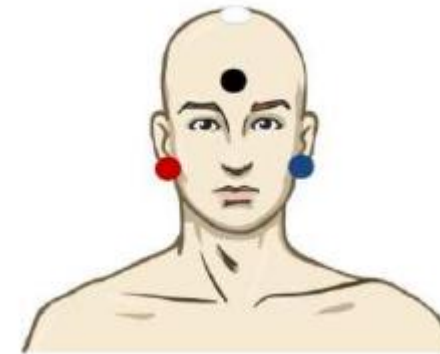


(Children's hospital of Pittsburgh, 2009)

The report will be passed on to the consultant AVP who will then contact you to formally discuss the results. This may take several weeks. *Please contact your audiology department if you have not heard back 2 weeks after the test.*

How is my child's hearing tested during a GA – ABR?

Your child will have their skin prepared with a slightly abrasive water based gel* at four points on the head (1 behind each ear, 1 on the top forehead and 1 on the right cheek or low forehead). This is in order to obtain good contact between the sticky pads and the skin. The wires will be attached to the sticky pads in order to measure the responses.



(Interacoustics, 2020)

Soft tip earphones or headphones will be placed inside / over your child's ears in order to deliver the sound stimulus into the ears.

A high pitch (4kHz) is tested in each ear. If your child is presenting with raised hearing levels, then additional testing will be completed in the same session, in order to understand the nature of the hearing loss.

The anaesthetist will be present throughout testing.

*Ingredients – water, Aluminium Oxide, 1,2 Propanediol, Sodium Polyacrylate, Methylparaben, Propylparaben, FD&C Blue 1, FD&C Red 40 and FD&C Yellow 5

What are the benefits of having this procedure?

This hearing test will be able to tell us if your child has a hearing loss when other methods of testing have failed to give enough information.

This test may help to reassure you and your consultant that your child can hear.

If your child has a hearing loss, the test can also give us information about the 'level' of hearing and sometimes the 'type' of hearing loss (for example whether it is permanent or temporary). This is important to be able to know how best to manage your child's hearing loss including the use of hearing aid devices.

What are the risks?

The hearing test itself has few 'risks'. Your child will have their skin prepared with a slightly abrasive gel and sticky pads will be attached. After removal of the sticky pads, it may be noticed that on one or more of the sites where the sticky pads were, there is a slight marking visible. This could be one or more of the following: white dry residue (dried lotion), slight pressure marking from the sticky pad being placed, or slightly redder appearance than normal of the skin. Any markings should disappear within 24 hours. *If your child develops a rash, please see your GP for advice.*

There are risks from having a general anaesthetic – these will be discussed with you by the consultant AVP and the anaesthetist.

It is possible that, due to theatre time constraints, we will be unable to 'complete' the hearing test and get all the information we would like. If this happens, we will discuss this with you at your follow-up appointment.

What are the alternatives?

GA-ABR is usually only offered as a 'last resort' after all other attempts to test your child in clinic have been exhausted. This will be discussed fully with you by the AVP and together you will discuss the risks versus the benefits of the procedure for your child.

Once you agree to a GA ABR...

Your child will be placed on a waiting list to be given an appointment slot for testing. Your AVP/audiology team will liaise with the Ear, Nose & Throat (ENT) department to arrange this.

You will be contacted by the ENT department to arrange the appointment. You may be required to attend for a 'pre-assessment' in preparation for your child being put under general anaesthetic.

Your child will be asked to fast prior to attending; this means no food or drink for several hours before the procedure. Further information regarding fasting rules and duration will be provided in the appointment letter provided by ENT.

Who can attend with my child on the day?

Two adults can attend the day surgery unit, one who must be the child's legal guardian to sign the consent form. No other children or siblings can attend. *This may change according to the Trust guidelines on COVID19 restrictions. Guidance on visiting will be outlined in the ENT appointment letter.*

What Happens on the day?

You will attend the day surgery unit where you will meet the theatre staff (nurse, anaesthetist, ENT doctor) who will prepare your child for general anaesthesia. You may be required to wait on the ward until your time slot. Your child will be fasting during this time, so you need to be prepared for this. ***In the event of a delay, we will do our best to advise you of such a delay and the theatre team will keep you updated on the likely time for your child's hearing test.***