NHS
Royal Berkshire
NHS Foundation Trust

Sleep deprivation for ABR hearing testing

You have been given this leaflet because we would like to test your child's hearing while they are asleep, using melatonin. This leaflet will tell you about how to deprive your child of sleep before the test to help them fall asleep for the ABR (auditory brainstem response) test.

We would like your child to go to sleep for between 45 minutes and 2½ hours for the ABR testing. With this in mind, listed below are the guidelines we would like you to follow depending on the age of your child. You will be given a separate leaflet explaining the use of melatonin and the ABR testing itself.

In order for the melatonin to be effective, it is very important that your child is not allowed to have a full night's sleep the night before the testing.

Young babies

If your baby is asleep when we arrive to start testing, they may be disturbed by the placing of the sensors and earphones, but we would still hope to get a sleep recording. As babies tend to fall asleep after a feed, we would ask you to be prepared to feed your baby after we arrive.

Older babies and toddlers

We would like you to send your child later to bed the night before the appointment and wake them up earlier on the day of the appointment. Your child needs to arrive **awake and tired** for the appointment so that they will take a nap after we have fitted the sensors. If you are driving to the hospital you may want to ask someone else to come with you and ensure your child does not have a nap in the car, as traveling can be sleep inducing. Please ensure that you have the things available that would normally help your child to settle, such as their bedtime toys or blanket, a dummy or drink. You may be asked to lie on the bed with your child to help settle them.

Three years plus and school age children

To help us get a successful ABR test in all older children, please deprive them of adequate sleep the night before the testing. This means keeping them up later, usually by 2-3 hours, and getting them up early on the morning of the testing. You then need to make sure they are kept active until the appointment. Do not allow them to doze and do not expose them to any screen time leading to the appointment (e.g. TV or tablet).

Adolescents

Please follow the instructions for school age children, but with extra sleep deprivation. With some older teenagers we may give an appointment early in the day; in this case more sleep deprivation is needed, particularly waking your child up earlier than normal. You might want to

let your child stay up all night (watching DVDs etc) so they are much more likely to fall asleep in the morning.

Frequently Asked Questions

Q: Does melatonin make you sleep?
A: No, prescribed melatonin is a synthetic form of the natural hormone we produce at night to make us dozy. If someone wants to fight going to sleep they can do so even if they have been given melatonin. For this reason, testing with melatonin but with no sleep deprivation is usually not successful. When we arrange a test time, we also ask you what time your child is naturally more tired, bearing in mind that we have three day-time slots which we can utilise.

Q: Is testing with melatonin an easy way of obtaining hearing level results if a child is not able to provide this information by responding themselves?
A: No, testing with melatonin will require your assistance in ensuring sleep deprivation advice is followed but it also involves multidisciplinary working and time to ensure safe prescriptions. Furthermore, we cannot predict whether a child will remain asleep and for how long, even if they have taken melatonin because testing involves adjusting sensors and placing headphones which can also disturb a child's sleep. The usual success rate is around 60%.

Q: What is expected to happen if testing with melatonin does not work?
A: It depends on the question that we are trying to answer and any information already obtained. If it is pertinent for the child's development to consider managing a permanent hearing loss, then we would consider testing under sedation or general anaesthetic. Not all children are suitable for this type of testing however and the process is more elaborate meaning it may take longer to carry out the test. Usually, if there are no significant concerns about hearing, we would consider allowing a period of time for a child to develop further before attempting to test them by observing how they respond to sounds whilst awake. This is also the gold standard for hearing assessment as it tests the whole hearing pathway. Whereas hearing assessments where patients have to be asleep only evaluate the pathway up to the brainstem level.

If you have any further questions, please contact:

The Audiology Department on tel: 0118 322 7238
Email: audiology.royalberkshire@nhs.net
Website: www.royalberkshire.nhs.uk/services-and-departments/audiology/childrens-hearing-services

To find out more about our Trust visit www.royalberkshire.nhs.uk

If you would like this leaflet in other languages or formats (e.g. large print, Braille or audio), please contact the Audiology Department.

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