



INFORMATION SHEET FOR PARENTS/GUARDIANS

Title of study: Sound processing and language in children with mild to moderate hearing loss

Name of principal researcher: Dr Lorna Halliday

We would like to invite your child to take part in a research study. Your child should only participate if you want him/her to, and if he/she wants to. We have also enclosed an information sheet for your child, so that he/she knows what is involved. Choosing not to take part will not disadvantage your child in any way. Before you decide, it is important that you read the following information carefully. Discuss it with other family members if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

What is the purpose of the study?

We have known for some time that having a permanent severe or profound hearing impairment in childhood often leads to marked delays in learning to speak and in learning to read. Much less is known about how having a permanent mild or moderate hearing loss (MMHL) in childhood affects language development. Nevertheless, recent research suggests that the language abilities of these children are mixed; whereas many go on to acquire completely normal language abilities, others show substantial impairments. The aim of this project is to investigate why some children with MMHL have impaired language. One factor that might account for the individual differences of children with MMHL is the way in which sounds are processed in the brain. In this study we will test this, by measuring the sound processing and language abilities of children with and without mild to moderate hearing loss.

Why have I been chosen?

We are asking Local Educational Authorities to give this information pack to parents/guardians of children who:

- have a mild- to –moderate hearing impairment
- speak English as their first language and are not fluent speakers of another language
- are aged between 8 and 15 years old

Does my child have to take part in this study?

No. It is up to you and your child to decide whether or not to take part in this study. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time and without giving a reason. If your child was unwilling to continue, we would not pressurise him/her to carry on. A decision to withdraw at any time, or a decision not to take part, will not affect the standard of education your child receives.

What will happen if my child does take part in the study?

If you agree to take part in this study, we would ask to see your child for two sessions. The first session would take place either at your child's school or at your home. In the first session, your child's hearing will be tested. We will assess language by asking the child to name pictures of objects, or to find a picture to match something that the researcher says. We also give a short reading test. One of our tests involves the child doing puzzles like jigsaws, and does not involve any language. Most of the tests start with easy items and then get harder. Testing stops when the test gets too difficult for the child. This session would last approximately 90 minutes, with breaks.

For the second session you will be invited to come to University College London (UCL). In this session your child's hearing will be tested again. Your child will also play computerised games in which he/she will try to

tell the difference between different sounds. Finally, we will measure your child's brain activity using EEG (ElectroEncephaloGraphy) when he/she is listening to different sounds. This is a way of detecting which parts of your child's brain are active when he/she is listening. To do this, your child will wear a special cap with receptors that can detect tiny changes in the electrical activity of the brain. This procedure is entirely non-invasive and harmless. Your child may watch a silent DVD during this part of the session. The whole session would last approximately 4 hours, with breaks for refreshments and a break for lunch.

What are the possible disadvantages of taking part?

- This study would take up quite a bit of your time, including a trip to UCL. Families will be reimbursed for travel expenses and lunch.
- It is possible that your child may need to be tested during school time. However, if you prefer, we can try to schedule appointments for during weekends and/or school holidays.
- Children may find it difficult to stay sitting still while brain activity is measured or become bored with the assessments. However, we do give them breaks and do our best to make this an enjoyable experience. Most of the children who have done this have been happy to come back for more. We would not force anyone to carry on if they do not want to.

What are the possible benefits of taking part?

- There are no benefits to your child taking part in this study. However, our findings could help other children with mild to moderate hearing loss in the future.

Will my child's results be kept confidential?

All data will be collected and stored in accordance with the Data Protection Act 1998. The information we collect will be kept strictly confidential. Test results will be identified by a code number, and will be kept in a locked room or stored on a password-protected computer. We will not give your child's test results to anyone else without your written consent.

What happens to the results of the research study?

Families that take part will receive a newsletter that gives results of the study. The results of the study will be presented at national and international conferences. We also plan to publish the results in a scientific journal, but this can take two or three years from the end of the study.

Who is organising and funding the study?

The research is organised by UCL and is funded by the Economic and Social Research Council.

Who has reviewed the study?

The study has received ethical approval from the UCL Research Ethics Committee (Project ID number: 2109/002).

Will I or my child be asked to participate in future studies?

If you agree to take part you will be asked whether you are happy to be contacted about participation in future studies. Your participation in this study will not be affected should you choose not to be re-contacted.

Who do I speak to if problems arise?

If you have any complaints about the way in which this research study has been, or is being conducted, please discuss them with the principal researcher, **Dr Lorna Halliday, Lecturer in Developmental Disorders of Communication, at Chandler House, 2 Wakefield Street, London WC1N 1PF**, telephone: **0207 679 4265**, email: l.halliday@ucl.ac.uk. If Dr Halliday cannot answer your complaint, please contact Professor Stuart Rosen, Professor of Speech and Hearing Sciences, at the same address, telephone: **0207 679 4077**, email: stuart@phon.ucl.ac.uk.

How to contact us

If you are willing for your child to take part, please **fill in the enclosed consent form and questionnaire** and return them to me in the envelope provided (no stamp is needed). If you would like to discuss the research beforehand (or have questions afterwards) please contact myself, Dr Lorna Halliday, at the telephone number/email address above.

Thank you for reading this