Lancaster University

UK Research and Innovation

# HELP US UNDERSTAND CHILDREN'S HEARING TECHNOLOGY MORE!

We're inviting children aged 6-11 with mild-to-moderate hearing loss to take part in a fun research study. We are also asking hearing children to take part. This helps us understand what is the same for all children and what might be different for children with hearing loss.

With your help, we want to learn more about how deaf kids like you hear, listen, and learn with the help of hearing aids and other cool technology - like remote microphones.

You'll visit your local audiologist a few times, just like you've done before, and come to Lancaster University for some fun activities that include listening games, memory puzzles, and exciting challenges.



**Ready to find out more?**

# DID YOU KNOW?

Did you know that children like you, with mild-to-moderate hearing loss (MMHL), are the most common group of deaf kids?

But here's the catch! There is still not much information about how hearing aids or other technology can really help you. Most hearing devices are designed for adults, and that's where this study comes in.

We need your help to figure out what kids, ages 6-11, really need to hear and listen more easily.

With your help, we can work out what hearing devices are best for you and other deaf kids.



## DO I HAVE TO TAKE PART?

No, you don’t have to take part if you don’t want to! It’s completely up to you and your parent or guardian to decide.

If you do choose to join, you can stop at any time, and that’s totally okay.

# WHY ARE WE DOING THIS RESEARCH?

This research is all about understanding how hearing aids and other technology can help deaf kids communicate more easily in a classroom.

It can help make sure deaf kids get the best support they need in school and everyday life.

# WILL MY INFORMATION BE KEPT PRIVATE

GDPR is a law that helps keep your personal information safe. In this study, we will use some information about you, like from your doctor, but only what we need.

Very few people will see your name, and everyone will keep it safe.

After the study, we might keep some information to check things or help with future research, but nobody will know it's about you.

SCAN ME!

Scan the QR code to watch a short video that explains GDPR.

# WHAT WILL I BE ASKED TO DO?

As part of the study, you'll get a brand-new hearing aid called Oticon Play SI. Some children will also get to try out an extra piece of technology called the EduMic.

You might get the EduMic, or you might not - it's a surprise for now, even for us!

This is part of a special NHS-approved study where no one knows who gets which device at first, but at the end we will get to see who got what device and work out what worked best.

You'll use the study hearing aids just like your current ones for three months for as long as possible each day. At the end of the study, you'll talk with your audiologist about what technology you want to keep using.

## Hearing Aids

You will get a pair of Oticon Play SI hearing aids.







## EduMic

EduMic is a small microphone that your teacher or grown-up can wear. It connects to your hearing aids. So you can hear even better in noisy places, like classrooms.

# WHAT WILL I BE ASKED TO DO?

If you decide to join the study, here's what you will be doing at each visit. The visits will happen over three months. We'll explain what each one will look like and how much time it will take.

You will see your local audiologist three times to check your hearing, get your study hearing devices and make sure everything is working well.

You will also visit Lancaster University two times. These visits will take up most of your day, similar to a school day, but there will be plenty of breaks, fun activities, and games to keep things exciting!

## Want to see where you'll be going?

Check out the video below to meet the team and get a sneak peek of the lab!

Scan the QR code to watch.

**Scan Me!**



# USING MICROPHONES AND CAMERAS IN OUR ACTIVITIES





### Microphones

For some of the games and activities, we use microphones to help us remember what you say in the games.

### Cameras

For some of the games and activities, we use video to see what happens during the tasks and to help keep everyone safe.

## WHY DO WE DO THIS?

These recordings help us look back later to make sure we didn't miss anything important you said or did. We will let you know for each activity if your voice or video is being recorded.

# WHAT WILL HAPPEN DURING EACH VISIT?



1

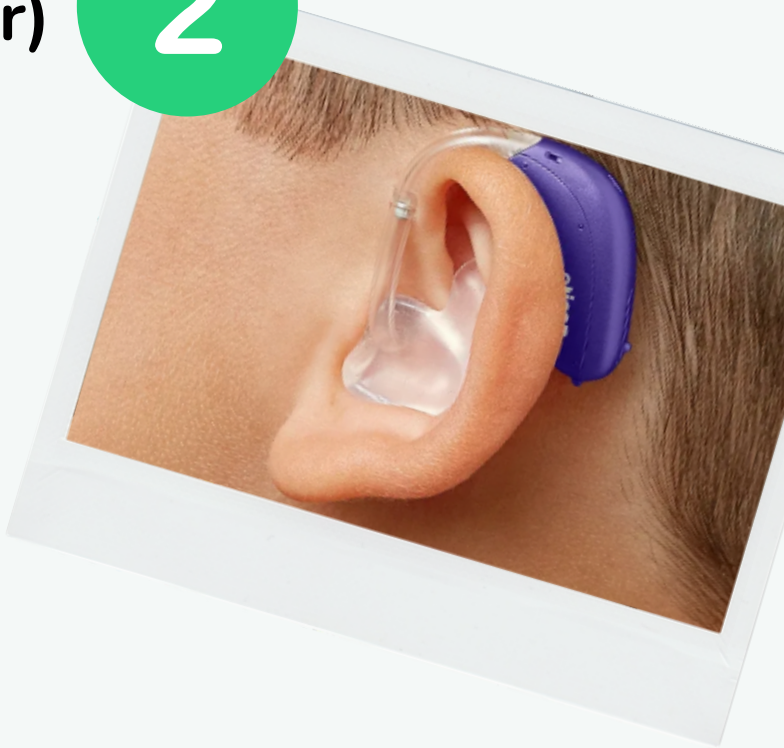
## Audiologist Visit (1 hour)

This first visit is at your local audiology clinic. You might have been here before! Your audiologist will check your hearing by looking inside your ears, checking your ear health and doing a quick hearing test. You will be measured for new ear moulds so your new hearing devices fit perfectly.

## Audiologist Visit (1 hour)

2

About 3 weeks after your first visit, you'll come back to the audiology clinic to get your study hearing devices. The audiologist will show you how to wear and care for them, and if needed, explain how to use any extra equipment like a remote microphone. You'll get a chance to try them out for the first time!



# OUR METHODS EXPLAINED

## Eye-Tracking Glasses (ET)

These are special glasses that show us where your eyes are looking. They don't change your vision or hurt at all. They help us see what catches your attention in the classroom.





## Functional near-infrared spectroscopy (fNIRS)

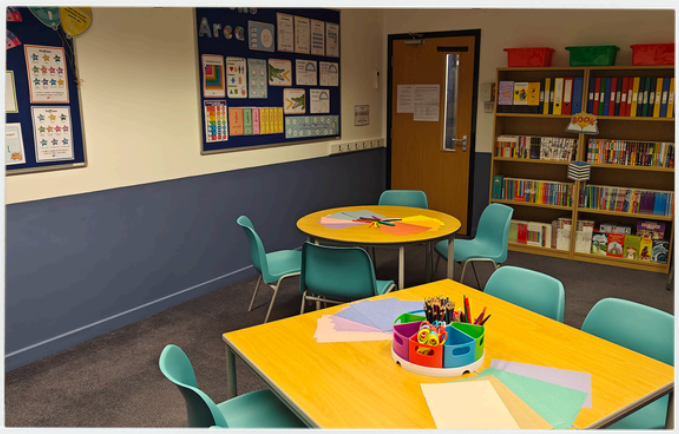
The fNIRS kit helps us see how your brain is working. It includes a special cap and other equipment that will be in a backpack for you to carry. The cap fits comfortably on your head and helps us measure your brain's activity while you do fun activities!

# 3 Lancaster University Visit (2-3 hours)

4-6 weeks after you get your new hearing devices, you'll come to Lancaster University to take part in our classroom activity. You'll be in a special room made to look and feel like a real classroom. Here's what you might wear during this visit:

- A comfy cap with little red lights (fNIRS) to see how your brain is working
- Glasses that track where you're looking
- A small microphone to pick up your voice
- Motion capture cameras will follow how you move around





- You might do the classroom activity with a teacher on your own, or with a teacher and two other children around your age.

# 4 Lancaster University Visit (3-4 hours)

Two weeks later, you'll come back to do some fun activities like listening and memory games, thinking puzzles and a little bit of reading and maths.

These help us learn more about how your brain works when you're learning and paying attention just like you would in a real classroom!

These two visits will take most of the day, but don't worry! There will be plenty of breaks and fun games to keep it exciting.

# 5 Audiologist Visit (1 hour)

A few months after you get your new hearing devices, you'll go back to your local audiology clinic for one final check-up.



Your audiologist will:

- Make sure your hearing devices are still working well
- Tweak or adjust anything if needed to help you hear your best



At this visit, you'll get to hear more about the study and find out which group you were in.

After the study you will decide what hearing devices you want to keep using. The choice is yours and your audiologist will help you and your adult decide what feels right.

# WILL THE STUDY HELP ME?

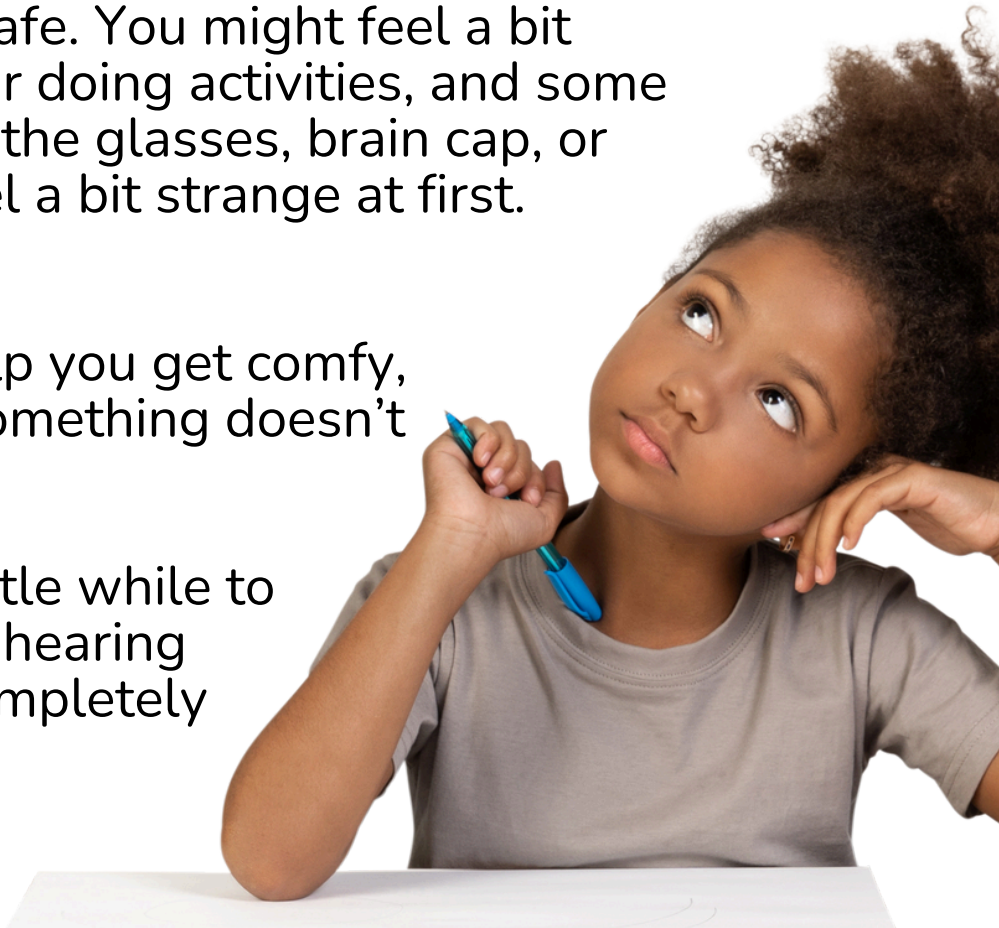
Taking part might not help you right away, but it will help us learn more about how hearing technology can support children like you to do their best as they grow. You'll be helping lots of other children in the future!

# WILL ANYTHING ABOUT THE RESEARCH UPSET ME?

Everything we do is safe. You might feel a bit tired from travelling or doing activities, and some of the equipment like the glasses, brain cap, or microphone might feel a bit strange at first. That's totally normal.

We'll take breaks, help you get comfy, and stop anytime if something doesn't feel right.

It might also take a little while to get used to your new hearing devices, and that's completely okay too.



# WHEN WILL THE STUDY BEGIN AND FINISH?

The study will start as soon as you and your family have all the information you need and you get your first appointment at the clinic. With your adults' help, you'll visit your audiologist and Lancaster University over three months.

# HOW CAN I ASK QUESTIONS OR STOP IF I CHANGE MY MIND?



Dr Brandon O'Hanlon Dr Katharina Kaduk Dr Hannah J. Stewart

If you have any questions or change your mind about taking part, just tell your parent or a researcher. You can also contact the research team at Lancaster University:

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