



Queen Margaret University  
EDINBURGH



## ***Tongue and lip movement during speech: phase 1*** **Information for pilot participants**

**In this research project, we are using ultrasound video of the tongue and video of the lips to improve our understanding of what is going on inside the mouth when people speak.**

This sheet lets you know about the structure of the recording session, the equipment we use and what will happen to the recordings that we make.

People who take part in this study need to be native speakers of English who do not suffer from any speech disorder.

### ***Structure of the study***

**Fitting and calibration:** we will fit the stabilising headset and carry out some calibration recordings, which should take less than 5 minutes. The calibration recordings will involve swallowing water and placing a bite plate in your mouth for a few seconds. The bite plate shouldn't feel more intrusive than having a plastic spoon in your mouth.

**Recording:** We will record you reading aloud a list of short phrases, which will be presented, one at a time, on the computer screen. You will have time to read the word and when the screen changes colour, you will say the word. We will record the movements of your tongue and lips while you speak, along with audio recordings. This part of the study should take less than 25 minutes.

### ***Other information***

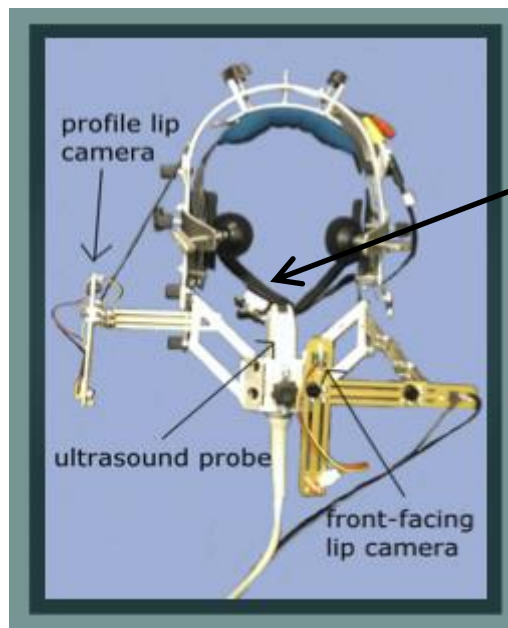
**What we do with the recordings:** We aim to keep the audio recordings and video images of your tongue's movement indefinitely. The audio recordings and written records of your speech will be used only to carry out research or to teach people about speech. We will use a code to identify your recording, rather than your name and a record of your name and contact details, linked to the code, will be stored in a password-protected file. If recordings of your voice and video of your lips are used in university teaching, or in a public talk, it is possible that someone who knows you personally and knows that you took part in research like this might be able to recognise your voice, or lips.

**The ultrasound machine:** There are no known risks associated with ultrasound. We use the same equipment that is used to scan pregnant women: here, we are scanning the throat and mouth. Gel is spread on the probe to ensure good contact with the skin and the ultrasound probe will be placed under the chin in order that we can see and record moving images of the tongue. An aluminium stabilising headset is used to keep the ultrasound probe in place (you can see it in the images below and on the next page) and to support headset-mounted micro cameras. You will have a chance to ask questions about the recording session before it begins.



**Figure 1 (Left)** The ultrasound machine and transducer (handheld probe), **(right)** the ultrasound probe and headset.

**The ultrasound headset:** Wearing the headset (Figures 1 & 2) can be uncomfortable for some people if it is worn for long periods of time, so recording sessions will be short with breaks if necessary. The headset can be adjusted to fit your head and it is padded where it comes into contact with the skin: on the top of the head; on the cheeks and on the sides of the head. It takes under five minutes to fit the ultrasound headset. At each stage, we will ask you how comfortable it feels and you will be able to tell us where it feels too tight or too loose. At the end of fitting, you should be able to shake your head from side to side without the headset moving and then we can begin recording.



**Figure 2** The ultrasound headset, front view

Researchers at Queen Margaret University have carried out many studies using ultrasound tongue imaging and the stabilising headset in recent years. Studies have involved children, adolescents and adults. The research team carrying out this project are experienced in working with ultrasound tongue imaging.

You aren't obliged to take part in this study, and you can decide not to continue to take part in the study whenever you want without giving a reason.