

Young Children's Speech Development

What is the research about?

The *Young Children's Speech Development* aims to understand how young children's speech movements develop. We know that speech becomes more adult-like during a child's first years of life but about 15% of children aged 2-5 have trouble developing clear speech. We know this may lead to other difficulties, including making friends and learning to read and write. This research project will provide us with more information on how young children use their jaws, lips and tongue to talk. This information will help us to further understand why some children have trouble developing speech. This may help us with the diagnosis and treatment of children with speech sound difficulties, as well as create educational resources for training speech-language pathologists. We also want to see if a tool called the Motor-Speech Hierarchy Prob Words can be used to help diagnose speech sound difficulties in young children.

Who is doing the research?

- The research is being conducted by Linda Orton, a PhD Candidate at Curtin University, under the supervision of Dr Neville Hennessey and Dr Roslyn Ward.
- The research will be conducted in accordance with the National Statement on Ethical Conduct in Human Research (2007).
- The project is funded by Curtin University Higher Degree by Research program, supported by a scholarship funded by The PROMPT Institute, the Future Health Research and Innovation Fund scheme through the WA Near-miss Award Program and Medical Research Future Fund Chronic Neurological Conditions Grant (2016518).
- There will be no costs to you and you will not be paid for participating in this project.

Why is my child being asked to take part and what will they and I have to do?

- We are looking for 225 typically developing, English speaking children aged between 24 and 47 months of age. The project will collect audio and video recordings of your child speaking in a range of tasks. There will be 3 video cameras recording your child. This will allow us to look at how your child's mouth moves from different angles.
- The tasks will be completed over 2 sessions conducted at home, and a third session at Curtin University. These sessions will need to be completed within a two-week period at Curtin University.
- Each session will take between 60-90 minutes. During the first session, we will also ask you to complete a questionnaire about your child and we will complete a hearing screen on your child.
- Your child will then participate in activities which measure their speech and language development. This will include some formal speech pathology assessment activities. Your child will also be asked to make some faces for us (e.g. open their mouth wide and smile). We will also take a 3D photograph of their face.
- Your child will then be shown pictures and asked to copy the researcher in saying what is in the pictures. The pictures will be of everyday items (e.g., ball, icecream).
- Your child will be given breaks during activities.
- You will be given a written summary of how your child's speech and language skills are

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developing. If any difficulties are found, this will be discussed with you.

- You will be offered a Coles/Myer voucher to acknowledge your participation.

Are there any risks, side-effects, discomforts or inconveniences from being in the research project?

Apart from giving up your time, we do not expect that there will be any risks or inconveniences associated with taking part in this study. All of the tasks involve activities that are appropriate for children aged 2 to 4 years. The data will be collected by qualified speech pathologists with considerable experience in working clinically with young children. They will be supported by final year speech pathology honours students in the administration of the formal speech pathology assessment. All students involved in this project are under the supervision of the investigators, have undertaken suitable training and relevant clinical experience.

This research study is being conducted in accordance with health and government regulations. As the risk of COVID 19 in Australia continues, the health and safety of our participants and researchers is a priority. It is a Curtin University requirement that all visitors to the Bentley campus, where the third appointment is held, are fully vaccinated.

We respectfully ask you to cancel your appointment if you or your child:

- Are under direction from WA Police, WA Health, or a COVID-19 testing centre, to self-isolate/quarantine.
- Are currently feeling unwell with respiratory symptoms.

In the event of the university campus being closed due to a government directive, we will reschedule your appointment.

Who will have access to my child's information?

- The information collected in this research will be re-identifiable (coded). This means that we will collect data that can identify your child but will then remove identifying information on any data and replace it with a code when we analyse the data. Only the research team have access to the code to match your child's name if it is necessary to do so.
- Electronic data (audio visual data) will be stored within the secure Curtin University shared research network drive. The data is password-protected using Multi Factor Authentication (MAF) and not publicly available. Hard copy data will be in locked storage on campus at Curtin University.
- The following people will have access to the information we collect in this research: the research team and, in the event of an audit or investigation, staff from the Curtin University Office of Research and Development.
- The information we collect in this study will be kept confidential under secure conditions at Curtin University until your child will have turned 25 years of age, and then it will be destroyed.
- With your permission, share the audiovisual data obtained at Curtin University with speech pathologists and researchers, for the purposes of developing a training package for speech pathologists. More information regarding the training package is provided below.

What if I consent to my child's information being used for educational purposes?

During your visit to Curtin, your child will be recorded saying 40 words and four phrases that are elicited via imitation, using a wordlist called the Motor Speech-Hierarchy Probe Words. This

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is a wordlist speech pathologists use to visually score speech movement characteristics. Whilst the wordlist allows speech pathologists to visually score speech-movement patterns, it does not provide the objective and precise measurements required in the diagnosis of speech difficulties. Using advances in technology our team has developed an application to provide speech pathologists with objective measures, suitable for use in the clinic. We would like to develop a two-hour online training package for speech pathologists, designed to train them in the use of the application, as well as identifying typical movements from atypical movements. If the training package is found to be useful to clinicians, we would like the training package to become a clinical resource. This would mean your child's image would remain in the training package until their 16th birthday.

With your permission, a copy of your child's data will be accessed by speech-pathologists and researchers receiving training in the administration and scoring of the motor-speech hierarchy probe words. The training program will be stored in an *isolated*, trusted, and secure cloud-based research data environment for sensitive data, that is managed and provisioned within Australia. The cloud-based environment requires Multi-Factor Authentication (MFA) and does not have public internet access. The sharing and storing of your child's data will adhere to HIPAA privacy regulations and no personal information will be made available.

- The results of this research project will be written up as student dissertations and may be presented at conferences or published in professional journals. Your child will not be identified in any results that are published or presented.

Will you tell me the results of the research?

The results of this study will be published in industry journals and used to inform clinical practice. A summary of the research will be disseminated. If you would like a copy of this summary, please let us know by indicating so on the consent form.

Do I have to take part in the research project?

No. It is your choice for you and your child to take part. Participation is entirely voluntary and you are not obliged to be involved. If you choose to participate, you can withdraw at any time without giving reason. Withdrawing from the study and not participating in the study will have no consequence in any way for any current or future involvement that you or your child might have with Curtin University.

Do all members of the research team who will be having contact with children have their Working with Children Check?

Yes. Under the Working with Children (Criminal Record Checking) Act 2004, people who work with children in Western Australia must hold a Working with Children Check. The documents attached to this letter include a list of the research team who will be having contact with children, along with current evidence of their Working with Children Check

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What happens next and who can I contact about the research?

- If you would like more information about the research, please contact Linda Orton (PhD Candidate) via email linda.orton@postgrad.curtin.edu.au. You can also contact the supervisors using the contact details below.
- If you decide to take part in this research we will ask you to sign the attached **Consent Form**. By signing it is telling us that you understand what you have read and what has been discussed. Signing the consent indicates that you agree to be in the research project and have your child's information used as described. Please take your time and ask any questions you have before you decide what to do. You will be given a copy of this information and the consent form to keep.

Curtin University Human Research Ethics Committee (HREC) has approved this study (HREC number HRE2020/0327). Should you wish to discuss the study with someone not directly involved, in particular, any matters concerning the conduct of the study or your rights as a participant, or you wish to make a confidential complaint, you may contact the Ethics Officer on (08) 9266 9223 or the Manager, Research Integrity on (08) 9266 7093 or email hrec@curtin.edu.au.

If you would like further information about this research, you may also contact: Dr Neville Hennessey on 9266 2553 or by email at N.Hennessey@curtin.edu.au; or Dr Roslyn Ward on 9266 4018 or by email at R.Ward@curtin.edu.au.

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CONSENT FORM

HREC Project Number:	2020-0327
Project Title:	<i>Young Children's Speech Development</i>
Chief Investigator:	<i>Dr Neville Hennessey Senior Lecturer School of Occupational Therapy, Social Work and Speech Pathology Faculty of Health Sciences</i>
Student researcher:	<i>Linda Orton (PhD Candidate)</i>
Version Number:	5
Version Date:	08/02/2024

- I have read the information statement version listed above and I understand its contents.
- I believe I understand the purpose, extent and possible risks of my and my child's involvement in this project.
- I voluntarily consent to take part and for my child to take part in this research project.
- I have had an opportunity to ask questions and I am satisfied with the answers I have received.
- I understand that this project has been approved by Curtin University Human Research Ethics Committee and will be carried out in line with the National Statement on Ethical Conduct in Human Research (2007).
- I understand I will receive a copy of this Information Statement and Consent Form.
- I would like to receive a summary of the research after the project is complete. Tick the yes or no box: Yes No
- I consent to my child's data being used anonymously for educational purposes. Tick the yes or no box: Yes No

Participant Name	
Participant Signature	
Date	

Declaration by researcher: I have supplied an Information Letter and Consent Form to the participant who has signed above, and believe that they understand the purpose, extent and possible risks of their involvement in this project.

Researcher Name	
Researcher Signature	
Date	

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Note: All parties signing the Consent Form must date their own signature.