Parent Information sheet

Measuring motor skills and musculoskeletal development in infants

In their first years of life a child’s muscle growth and walking development is extraordinary. However, we know very little about infant muscle growth in response to motor development skills. **We are seeking to recruit 50 families with infants** to help us better understand walking development. This will help us better understand those who have challenges learning to walk.

**What is involved in this research?**

We would like to take motion analysis measures of your child’s walking activity, and ultrasound scans of your child’s lower limb muscles. We are looking for families with infants from 1 to 2 years of age. You and your child will not be photographed for this study as we are only collecting information on your child’s walking and muscle growth development. We appreciate this can be a busy time in yours and your child’s lives so we want to make your participation as convenient and rewarding as possible.

- We will arrange a good time to meet with you to discuss the study and to plan the best arrangements for scheduling appointment dates for you.
- We will plan an appointment at the AUT Millennium motion analysis facility to measure walking motion. This will take no longer than 45 minutes.
- We will invite you to the University of Auckland at a time of your choosing to image your child’s lower limb muscles using ultrasound. This will take no longer than 45 minutes.
- If your child is in the early stages of walking we will invite you back up to 2 more times to learn more about how your child develops walking skills.
Who is eligible for this study?
To be in the study, you and your child must meet all of the following criteria:

- Have a full-term pregnancy (give birth any time after 37 weeks gestation).
- Have an uncomplicated labour and birth.
- Your child does not present any health conditions including heart murmurs or genetic syndromes.
- Your child does not present signs of a musculoskeletal disorder.

More information on:

Motion Analysis and Ultrasound
In this study, your child will have motion analysis and an ultrasound scan.

We will work around your schedule and book the appointments at a convenient time for you.

The motion analysis and ultrasound scans will be at AUT Millennium, which is situated at 17 Antares Pl, Rosedale, Auckland, in the North Shore. We will provide you with a map, directions and parking information. Please dress your baby in warm but firm fitting clothes.

Motion analysis is a safe technique for capturing the movement of an infant and assessing motion development. It involves placing reflective markers on limbs as shown below and walking on a platform. You will be encouraged to participate and walk in the lab with your child. We will be assessing the development of your child’s motor skills.
Ultrasound is a very safe non-invasive imaging method of looking at muscles. It is used during pregnancy. We will be looking at the size of your child’s muscles.

**Who is doing the research?**
This project brings together a multidisciplinary team of researchers from the University of Auckland and AUT. Biomechanics researchers Associate Professors Justin Fernandez and Thor Besier, from the Auckland Bioengineering Institute, Dr Ali Mirjalili, a GP and ultrasound expert from the Department of Anatomy and Medical Imaging, and Professor Susan Stott and Dr Sian Williams from the Department of Surgery who have many years in infant research. Infant biomechanics is supported by Prof Patria Hume (Director of SPRINZ at AUT) where data collection will occur and Dr Kelly Sheerin (AUT).

**What are the benefits of this study?**
After the study is completed, you will be given a report of the information collected on your child’s growth and development, including images of your child’s muscles. This study is the first of its kind, and the information gathered will advance paediatric knowledge in the medical field. By understanding typically developing motor skills and muscle growth during infant development, we can better understand and assess impaired muscle growth in infants.

**Will I be compensated?**
Your time will be compensated in this study by means of a $40 petrol voucher for travel expenses each time you participate in an imaging and motion analysis session.

**Are there any risks, side-effects, discomforts?**
There are no risks associated with ultrasound scans or motion analysis. During the study if we identify any abnormal imaging or motion analysis we will inform you and give you the option to meet our project General Practitioner, Dr Ali Mirjalili, or refer you to a medical health provider of your choosing.

**Who will have access to my information?**
You and your child’s identity in this research will remain confidential in the research records, documents and publications (with the exception being the consent form). All the information collected will be de-identified with a participant identification number, and only accessible to the research team. Electronic data collected from this study will be password-protected and hard copy data will be in locked storage.
The information we collect in this study will be kept under secure conditions at Auckland University until 26 years after the study end date, and then it will be destroyed. The results of this research may be presented at conferences or published in professional journals. You will not be identified in any results that are published or presented.

**Will you tell me the results of the research?**

You will receive a report containing a summary of your child’s walking development (including walking animations), and you will be allowed access to all of your baby’s ultrasound scans and motor skill development data. You will not be given any information about other participants in this study.

**Do I have to take part in the research project?**

Taking part in this research project is voluntary. If you decide to take part and then change your mind, you are free to withdraw at any time. You do not have to give us a reason. Please let us know if you want to stop so we can make sure you are aware of any thing that needs to be done so you can withdraw safely. Your decision will not affect your health care or any relationship you have with your midwife, doctor or staff of the University. If you choose to leave the study we will use any information collected unless you tell us not to. Your identity will be kept confidential.

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

If you are happy for your child to be part of this research we will ask you to sign the consent form on behalf of your child. 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 motion data and ultrasound images collected 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 your child’s information at the study conclusion. Note that you do not have to print this out, we will have copies for you, when we meet with you for the first time.
If you have more queries about the study, please feel free to contact:

Assoc Prof. Justin Fernandez  
Principal-Investigator  
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Ph: 09 923 9196

For any queries regarding ethical concerns you may contact the Chair, University of Auckland Human Participants Ethics Committee, Office of Research Strategy and Integrity, University of Auckland, Private Bag 92019, Auckland 1142. Telephone 09 373-7599 ext. 83711. Email: humanethics@auckland.ac.nz

For Māori health support please contact:  
For support, talk to your whānau in the first instance. Alternatively you may contact the administrator for He Kamaka Waiora Māori Health Team on 09 486 8324 ext 2324.