

## Free living evaluation of machine learning algorithms for predicting physical activity type and energy expenditure in preschool age children.

QUT Ethics Approval Number 1700000423

### RESEARCH TEAM

Principal Researcher:	Mr Matthew Ahmadi	PhD Student
Associate Researchers:	Professor Stewart Trost	Principal supervisor
	Dr Toby Pavey	Associate supervisor

**School of Exercise and Nutrition Sciences, Faculty of Health  
Queensland University of Technology (QUT)**

### DESCRIPTION

This research project is being undertaken as part of a Dissertation study for Matthew Ahmadi and will evaluate the accuracy of new methods to measure movement for predicting physical activity type and energy expenditure from wearable motion sensors in children between 3-5 years old.

The objective of this research project is to evaluate the accuracy of new methods to measure movement for predicting activity type and energy expenditure from wearable motion sensors in preschool-aged children in a real-world setting.

Your consent to your child's participation is invited because they will be 3-5 years old during the active play session.

### PARTICIPATION

Should you provide consent, your child will be invited to wear activity monitors on both wrists, hips, and ankles for a 20 minute active play session. Your child will also be invited to wear a heart rate monitor chest strap, and a portable metabolic unit that consists of a chest harness and facemask.

The active play session will be video recorded for purposes of identifying types of activities performed during the active play session.

The location of the active play session will occur at a place of convenience for you and your child, such as your home, a local park, or neighbourhood green space.

Prior to beginning the active play session, your child's date of birth, height, and weight, and will be recorded. The entire session will be approximately 40 minutes in duration with 10 minutes allotted at the beginning of the session to familiarize you and your child with the equipment, 20 minutes allotted for active play, and 10 minutes for sensor and equipment removal. Please note that all researchers hold a current Blue Card – Working with Children Check.

Your child's participation in this research project is entirely voluntary. If you do agree to your child's participation, you can withdraw consent without comment or penalty at any time. In addition, if you or your child requests that any of the devices or equipment be removed, it will be done so immediately. Your decision for your child to participate or not participate will in no way impact upon your current or future relationship with QUT or your centre. Your centre director and educators understand that your participation in this research project is entirely voluntary.



Please note that the research team are available to discuss details of the research project and any questions or concerns that may assist you to make a decision about providing consent for your child's participation.

### **EXPECTED BENEFITS**

Researchers and practitioners in public health and the movement sciences will benefit from your child's participation in this study because they will be able to complete more accurate real life assessments of physical activity in preschool-aged children. Access to validated objective measures of physical activity behaviour is an important prerequisite to conducting observational and experimental studies/research projects to describe, understand, and promote physical activity in young children. More accurate sensor-based measures of physical activity behaviour will significantly enhance the quality of research addressing the role of regular physical activity in the early prevention of childhood obesity.

### **RISKS**

There are minimal risks associated with your child's participation in this study, primarily that your child may experience discomfort from wearing the activity monitors and portable metabolic unit.

Should you consent to your child's participation:

- If your child appears uncomfortable or asks for any of the equipment to be removed, it will be removed immediately.
- The principal researcher will outline the research project to the children and answer children's questions.
- The research team is available to discuss any questions or concerns that you may have at any time before, during or after your child's participation in the study.

### **PRIVACY AND CONFIDENTIALITY**

All collected identifiable data will be de-identified.

All collected data will be stored on QUT's Research Data Storage repository. This provides a secure repository throughout the data lifecycle (acquisition, analysis and archiving). Access to the repository is password protected and will only be available to the principal researcher and supervisors.

### **CONSENT TO PARTICIPATE**

We would like to ask you to sign a written consent form (enclosed) to confirm your agreement to your child's participation.

### **QUESTIONS / FURTHER INFORMATION ABOUT THE RESEARCH PROJECT**

If you have any questions or require further information please contact one of the listed researchers:

Matthew Ahmadi	3069 7342	<a href="mailto:matthew.ahmadi@qut.edu.au">matthew.ahmadi@qut.edu.au</a>
Stewart Trost	3069 7301	<a href="mailto:s.trost@qut.edu.au">s.trost@qut.edu.au</a>
Toby Pavey	3138 5837	<a href="mailto:toby.pavey@qut.edu.au">toby.pavey@qut.edu.au</a>

### **CONCERNS / COMPLAINTS REGARDING THE CONDUCT OF THE RESEARCH PROJECT**

QUT is committed to research integrity and the ethical conduct of research projects. However, if you do have any concerns or complaints about the ethical conduct of the project you may contact the QUT Research Ethics Advisory Team on 3138 5123 or email [humanethics@qut.edu.au](mailto:humanethics@qut.edu.au). The QUT Research Ethics Advisory Team is not connected with the research project and can facilitate a resolution to your concern in an impartial manner.

**THANK YOU FOR HELPING WITH THIS RESEARCH PROJECT.  
PLEASE KEEP THIS SHEET FOR YOUR INFORMATION.**