UNIVERSITY OF WATERLOO
FACULTY OF APPLIED HEALTH SCIENCES
Department of Kinesiology

BOHM LAB
Biomechanics of Human Mobility Laboratory

*Evaluation of Lower Back and Knee Loading During Infant Lifting from the Floor Using the Tripod Technique: A Comparative Study with Squat and Kneel Lifts*

# Individuals 18+ years of age are needed for a research study. Participants will receive a $10 payment in appreciation of their time.

**Background:**
The physically demanding tasks in childcare, including frequent bending and lifting, put strain on the lower back and knees, raising the risk of lower back discomfort and knee osteoarthritis. This study examines the relationship between low back and knee joint loads during Tripod lifting compared to squat and kneel lifting techniques, which are used for lifting a child in a childcare setting. The primary objective is to identify a lifting technique that minimizes the load on the back and knees.

**Participants:**
We invite individuals between the age of 18-45 who have no history of low back or lower limb injury requiring medical intervention or more than 3 days off work in the past year, no history of surgical interventions to the back or lower limb and must be able to kneel to the ground and lift 7.7kg (17lb) without pain.

The study will take approximately 3 hours and a series of 15 lifts will be performed (3 trials of each of the following: kneel, squat, standard tripod, modified tripod, any self-selected or preferred lifting technique). Participants will lift a 7.7kg (17lb) doll from the floor, which is approximately the same mass as a large 3-month-old. Motion capture markers will be attached to the skin on your legs and back, to track the motion of your body.

**Contact:**
If you have questions or are interested in participating, please contact Sajedah Almomani at saalmoma@uwaterloo.ca.

This project was reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee (ORE#47350).


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