

Consent Form

Melbourne School of Engineering
Department of Mechanical Engineering



ANALYSIS OF GAIT BIOMECHANICS IN HEALTHY ADULTS DURING NORMAL AND CONSTRAINED WALKING

Responsible Researcher: **Dr. Tomislav Bacek**, Research Fellow

Student Researchers: **Mingrui Sun, Xiruo Cheng, Hengchang Liu, Zhongxiang Chen**

Additional Researchers: **Prof. Ying Tan, Prof. Denny Oetomo, Prof. Dana Kulic**

Name of Participant: _____

1. I consent to participate in this project, the details of which have been explained to me, and I have been provided with a written plain language statement to keep.
2. I understand that the purpose of this research is to investigate the underlying mechanisms of human walking under different walking conditions to better the design of robotic devices for use in gait rehabilitation and our understanding of human locomotion.
3. I understand that my participation in this project is for research purposes only.
4. I acknowledge that the possible effects of participating in this research project have been explained to my satisfaction.
5. I understand that, in this project, I will be required to walk on a treadmill under different walking conditions on three separate days. The conditions include four different walking speeds and five different step frequency (i.e., step time) levels, as detailed in a plain language statement. Each combination of the two factors will be repeated two times, once with no external constraints to my legs (*natural walking*), and once with constraints limiting the natural motion of my knee joint (*simulated impaired walking*).
6. I understand that an experimental study involves taking my personal data (i.e., name, age, gender, weight, height), as well as collecting joint kinematic and kinetic data, lower limb muscle activity data, and energetic data of my walking (the meaning of which has been explained clearly and to my satisfaction).
7. I understand that experimental sessions involve taking anonymous (displaying no face or any data related to me and my identity) photos and/or video-taping that may or may not be used in scientific publications and education sessions, but I can opt-out if I prefer to do so.

I agree being photographed/filmed for the purpose of this research: YES / NO

8. I understand that participation in the study involves walking with bare legs and lower trunk (to attach data collection equipment to my body) and that placing

equipment involves being touched by the study researchers (albeit the one of my gender).

I agree to wear extra markers and bare my arms and shoulders: YES / NO

9. I understand that my participation is voluntary and that I am free to withdraw from this project anytime without explanation or prejudice and to withdraw any unprocessed data that I have provided.
10. I understand that the study results will be available to me from the principal investigator upon request.
11. I understand that the principal investigator will be the only person with access to data that can reveal my identity for three (3) years. Identifiable information will be stored confidentially and will be password-protected on the principal investigator's work laptop. A copy of anonymised data will be stored at the University of Melbourne OneDrive cloud space.
12. I have been informed that the data from this research will be anonymised (non-identifiable) during analysis, and it will be made publicly and freely available to the scientific (and wider) community as a human gait biomechanics dataset for an indefinite period (on, e.g., GitHub website).
13. I understand that the results and outcomes of the study and data analysis will be used in scientific publications and presentations, albeit always in anonymised format (i.e., my data will be presented as *SubjectX*, without possibility to link data to my identity).
14. I understand that if I do not want to provide my name, age, weight, and/or height to the principal investigator, as well as any other information needed for the successful completion of the experiments, I am not able to participate in the study.
15. I declare not to have experienced any serious trauma or undergone any surgical procedure to the lower limbs in the six months preceding this study; not to be currently treated for any gait abnormalities; and not to be aware of any potential gait abnormalities that I might have. I also declare that I am not experiencing any pain whatsoever from a known or unknown source and that I am not aware of any reasons that could compromise my participation in the study.
16. I have been informed that this study is part of a project funded by the Australian Research Council (ARC) under the Discovery Program (DP) scheme, and approved by the Ethics Committee of the University of Melbourne on 11/01/21.
17. I have been informed to contact the principal investigator, Dr. Tomislav Bacek, for any concerns, doubts, or ambiguities concerning the study, either via phone (0476329752) or email (tomislav.bacek@unimelb.edu.au).
18. I understand that after I sign and return this consent form, it will be retained by the researcher.

Participant Signature: _____ **Date:** _____