

Participant Information Sheet (Hip OA)**Date Information Sheet Produced:**

2 December 2024

Project Title

An investigation of walking economy in individuals with hip joint osteoarthritis (OA).

An Invitation

My name is Bryce Hastings, I am a qualified physiotherapist currently undertaking a Ph.D. at AUT University, New Zealand.

I would like to invite you to take part in a research project I am running at Les Mills, New Lynn, West Auckland, which is part of my PhD.

What is the purpose of this research?

The focus of my research is to investigate walking economy in individuals with osteoarthritis of the hip. Walking economy is a measure of the amount of energy we use when we walk. Previous studies have found that a high energy cost when we walk is related to reduced daily activity. Osteoarthritis is a joint condition that affects many adults. We think individuals with OA of the hip might suffer from changes in their walking economy earlier than other adults – however, this has not been explored.

This research will investigate whether:

1. Individuals with OA of the hip have reduced walking economy when compared to a group without OA.
2. Exercise can help improve walking economy in individuals with hip joint OA.

The findings of this research will be used for academic publications and presentations.

Who is paying for this research?

This research is being partially funded by Les Mills International to whom I am a contractor. Les Mills International has not and will not have any input into the development, design or implementation of the study and will not have the right to embargo any of the findings.

How was I identified and why am I being invited to participate in this research?

You have received this information sheet because you expressed interest in taking part in our research following a referral from your local clinician and contacting a member of our research team.

We are looking for people over the age of 50 with Osteoarthritis of the hip.

This includes those who have:

Received a diagnosis of osteoarthritis of one or both hips from their doctor or specialist.

OR

You have hip pain (this could be buttock or groin pain).

AND

Hip joint stiffness in the mornings that lasts for less than an hour.

If you have hip pain and stiffness and you haven't received a diagnosis of OA – our team will assess your hip with some simple tests to determine if you can take part in the study.

There are a few other conditions that may interfere with our findings. We can't include anyone with the following:

- You have had an assessment or treatment for a lower back or leg condition (other than hip joint OA) in the last 6 months
- You have experienced hip trauma or had any surgery for your hip
- You have been prescribed a corticosteroid in the last 3 months
- You have a neurological condition that affects your lower limb
- You use a walking stick or any other device for walking assistance
- You have uncontrolled high blood pressure
- You have a Body Mass Index (BMI) over 40
- You have an inflammatory disease such as rheumatoid arthritis
- You have a respiratory disease
- You have a heart condition

How do I agree to participate in this research?

Your participation in this research is voluntary (it is your choice), and whether or not you choose to participate will neither advantage nor disadvantage you in relation to any treatment you are receiving. You are able to withdraw from the study at any time. If you choose to withdraw from the study, then you will be offered the choice between having any data that is identifiable as belonging to you removed or allowing it to continue to be used. However, once the findings have been produced, removal of your data may not be possible.

If you agree to participate in the research, please email or call me (details below), we will set you up with an assessment time. Before we start, I'll ask you to check the "I agree to take part in this research" box in a consent form.

What will happen in this research?

All assessment procedures mentioned in this section will take place at the Les Mills gym in New Lynn.

You will have a walking economy assessment. This will involve a walk over a 12-meter track at a comfortable speed. This test will be used to establish your preferred walking pace.

The next phase of this assessment will occur on a treadmill. We will fit you with a light face mask (illustrated below) so we can assess the amount of oxygen you consume when walking. Then, you will walk at a set slow speed for 5 minutes for the first economy reading. You will then have time to rest (if needed) before we repeat the test at your preferred walking speed, which will have been determined from your walking track test.



You will be asked to fill out surveys to capture information on age, sex, socio-economic details, levels of physical activity, any health conditions, exercise history, an assessment of pain levels, and an assessment of physical function and recreational activities related to hip function.

Your height and weight will also be measured.

You will also have an assessment of your leg motion when walking during the treadmill tests described above. This information will be collected at the same time as the walking economy tests via 2 smart phones positioned behind the treadmill.

We will then conduct some strength tests of your leg muscles. These will involve you performing muscle contractions on a treatment table resisted by a physical therapist, a squat test pulling against a cable and a squat endurance test against a wall.

Following these tests, you will be randomly allocated to one of two groups.

One group will be asked to continue as normal with no restrictions or changes – you will be acting as the control group.

The other group will be asked to undertake a specific group exercise class at Les Mills New Lynn (if you live in that region) or online via digital workouts if that's more convenient. You can also do a combination of the two. We will ask you to attend these classes at least two times per week for a 12-week period. The gym-based classes will be open to the public and will be available at a range of times throughout the week and the weekend.

The exercise sessions will be run by a qualified group exercise instructor. The classes take approximately 45 minutes and consist of a warm-up, squat and lunge tracks, hip strengthening exercises and exercises designed to increase abdominal and back muscle strength. The program has been designed to cater to any fitness level. There will be lots of options. In some tracks, the exercises will be performed on the floor – but there are options to perform these in standing if you feel uncomfortable getting on and off the floor.

During the exercise period, both groups will be asked to complete a diary, recording any exercise sessions.

Following the completion of the 12 weeks, all of the above tests will be repeated for both groups (the control and exercise groups).

At this time those who were in the control group will have access to the exercise classes for a 12-week period – this is optional.

What are the discomforts and risks?

Our research team will monitor all of the above tests. You will be able to pause or stop any assessments at any time. These tests should only create mild discomfort at most. The walking tests will be conducted at your preferred pace – exertion will, therefore, be minimal.

Although the exercise sessions (should you be in this group) are designed to challenge you. You will decide how hard you push yourself during the classes. Those who are concerned about balance will have a chair for support. A qualified instructor will monitor your technique and provide coaching to keep you safe.

As with any physical activity, there is always the risk of injury. The risk for this study is no greater than during a moderate workout. You may experience muscle discomfort. This should go away within minutes after completing each exercise. You may also experience delayed onset muscle soreness (DOMS) one or two days after testing or after the exercise classes. This discomfort/stiffness in your muscles is normal, and should go away within two or three days. In the unlikely event of an emergency during the data collection or group exercise classes, the researcher and/or group fitness instructors are trained in CPR, and care will be provided until the proper medical providers arrive. The exercise program is low impact, and uses light weights or resistance bands or body weight only. You will be provided with options to

increase or decrease the intensity of each exercise. If you feel your pain/discomfort becomes too much at any time during the assessment or exercise sessions, you are free to withdraw from the study.

How will these discomforts and risks be alleviated?

It is not anticipated that this research would cause any discomfort beyond those described above; however, should you sustain an injury because of the research, you should contact the research project supervisor, Dr Daniel O'Brien (dobrien@aut.ac.nz). Your injury will be assessed, and you will be referred for relevant medical assessment and, if needed, treatment.

What are the benefits?

We hope that the findings from this research will provide insights into the effects of OA of the hip on walking economy. We also hope to help those who create exercise programs, and design workouts that improve walking economy in this group. In addition, those individuals with hip joint OA who take the classes will potentially experience improvements in their pain and function. All participants in the study will receive information on how to improve walking economy.

This research will also contribute to my PhD.

How will my privacy be protected?

The research team will make every effort to maintain your confidentiality throughout this project. I will assign you a case number, meaning your data won't be traced back to you by anyone else on the research team. Data will be kept in secure, password-protected files, and any paper documents will be destroyed once they have been converted to digital files. Your individual results will not be reported; we will only report findings from the group. Your information will not be shared with any third parties. All data and information will be securely disposed of at the appropriate time at the completion of the project.

What are the costs of participating in this research?

The only cost to participate in this trial is your time.

Survey completion will take approximately 30 minutes. The lab assessments will take approximately one hour. These tests will be completed at the beginning and end of the 12-week period.

If you are asked to complete the exercise classes, these will take approximately 45 minutes, and you will be asked to attend these two to three times weekly.

All participants in the hip OA group (control and exercise) will be provided with a \$20 voucher at the completion of the trial as reimbursement for travel costs.

What opportunity do I have to consider this invitation?

Once you receive this information pack, you will have one month to let us know you're interested in participating in the study by returning the consent form.

Will I receive feedback on the results of this research?

Yes. We will give you a one-page summary of the findings at the end of the trial, including your individual results.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Dr Daniel O'Brien, daniel.obrien@aut.ac.nz, phone 021 815717

Concerns regarding the conduct of the research should be notified to the Executive Secretary of AUTECH, ethics@aut.ac.nz, 921 9999 ext 6038.

Whom do I contact for further information about this research?

Please keep this Information Sheet and a copy of the Consent Form for your future reference. You are also able to contact the research team as follows:

Primary Researcher:

Bryce Hastings

Bryce.hastings@lesmills.com

Phone 021 527755

Researcher Contact Details:

Bryce Hastings

Bryce.hastings@lesmills.com

Phone 021 527755

Project Supervisor Contact Details:

Dr Daniel O'Brien,

daniel.obrien@aut.ac.nz

Phone (international) 021 815717

Approved by the Auckland University of Technology Ethics Committee on:

13 December 2023

AUTEC Reference number:

23/252