PARTICIPANT INFORMATION LETTER

TITLE OF PROJECT: Effects of resistance, endurance and high intensity interval training in adults

PRINCIPAL INVESTIGATOR: Dr Donny Camera
ASSOCIATE INVESTIGATORS: Prof John Hawley, Dr Evelyn Parr, Dr Brooke Devlin, Dr Ryan Timmins and A/Prof Leah Brennan
STUDENT RESEARCHER: Mr Marcus Callahan

Dear Participant,

You are invited to participate in a research project conducted by Australian Catholic University (ACU) described within this Participant Information Letter.

This Participant Information Letter/Consent Form informs you about the research project. It explains the tests and research involved. Knowing what is involved will help you decide if you want to take part in the research.

Please read this information carefully and ask questions about anything that you don't understand or want to know more about. Before deciding whether or not to take part, you might want to talk about it with a relative, friend or local doctor.

Participation in this research is voluntary. If you don't wish to take part, you don't have to. You will receive the best possible care whether or not you take part.

If you decide you want to take part in the research project, you will be asked to sign the consent section. By signing it you are telling us that you:

- Understand what you have read.
- Consent to take part in the research project.
- Consent to the tests and research that are described.
- Consent to the use of your personal and health information as described.

You will be given a copy of this Participant Information Letter and Consent Form to keep.

What is the project about?

You have been invited to participate in this research study because you are aged between 35-45 years and belong to an important target group for investigating the health effects of different types of exercise with protein supplementation. After the age of 30, adults naturally lose 3-8% of their total muscle mass per decade with more noticeable declines evident after the age of 50. Despite the inevitable loss of muscle mass with aging, changes to behaviour (e.g. diet and exercise) can help to maintain muscle mass and reduce the impact of sarcopenia (muscle wasting with age).

High intensity interval training (HIIT) is a time-efficient alternative to traditional endurance exercise that can improve aerobic fitness. HIIT requires rapid contraction of muscle fibres important for increasing muscle mass as seen with resistance exercise (e.g. weights). Whether

HIIT can also increase muscle mass following longer term training (i.e. 6 weeks) remains understudied in the literature.

Comparisons between HIIT, resistance exercise and traditional endurance training will help to better understand if HIIT is a viable alternative to isolated forms of exercise for both aerobic fitness and strength gains when performed with protein supplementation.

When an individual stops training (i.e. detraining), loss of adaptation from exercise can occur. However, no study to date has investigated the effects of a short-term (i.e. 2½ weeks) detraining period on measures of strength and aerobic fitness between resistance, endurance and HIIT training.

The effects of HIIT compared to resistance exercise and endurance exercise alone when coupled with protein supplementation on strength and aerobic fitness in adults has not been thoroughly examined. Therefore, the study aims to investigate the effects of six weeks of HIIT with protein supplementation on measures of strength and aerobic fitness. Further, the study aims to compare the anabolic effects of six weeks of HIIT with protein supplementation vs resistance exercise with protein supplementation and the metabolic effects of six weeks of HIIT with protein supplementation vs endurance exercise with protein supplementation. Lastly, the study will aim to investigate the effects of a 2½-week detraining period on measures of strength and aerobic fitness between resistance, endurance and HIIT training.

Who is undertaking the project?

This project is being conducted by Dr Donny Camera in the Centre of Exercise and Nutrition within the Mary MacKillop Institute for Health Research at ACU. The co-investigators for this study will be Professor John Hawley, Dr Evelyn Parr, Dr Brooke Devlin, Dr Ryan Timmins, Associate Professor Leah Brennan and PhD student Mr Marcus Callahan. Dr Donny Camera is a post-doctoral research fellow at ACU who has extensive experience in the coordination of exercise and dietary controlled studies. Dr Evelyn Parr is a post-doctoral research fellow at ACU whose research has involved all of the measures being taken in the current study. Dr Parr is experienced in venepuncture (with certification) and is a qualified DXA technician. Dr Brooke Devlin is a Researcher Officer at ACU, an Accredited Practising Dietitian (APD), a qualified DXA technician and the research dietitian within the Centre of Exercise and Nutrition. Dr Ryan Timmins is a lecturer at ACU who specialises in muscle ultrasound measurements. Associate Professor Leah Brennan will lead cognition tests and questionnaires throughout the study. Mr Marcus Callahan is a PhD student who has previously worked as a research assistant in the Centre for Exercise and Nutrition. This project will be the first of Mr Callahan's for his doctoral studies. Mr Callahan has experience as both a laboratory assistant and participant in training studies similar to the project described in this document. Mr Callahan is qualified in phlebotomy and possesses a current DXA technician certificate. All researchers that are involved in exercise training and biological sampling in this research project (Camera, Parr, Devlin, Garnham and Callahan) have current first aid certification.

Dr Andrew Garnham is the doctor who is employed within the Centre of Exercise and Nutrition. Dr Garnham's primary role will be to take the muscle biopsy samples on trial days and follow up with participants as and if required. Dr Garnham has previously taken muscle biopsies from >16 studies from our laboratory group alone and he is the leading muscle biopsy specialist in Melbourne (works for VU, Deakin, RMIT and Melbourne Universities where needed).

The project has been approved by the ACU Human Research Ethics Committee (2017-104H) and is supported by a grant from ACU to Dr Donny Camera for work into exercise, nutrition and skeletal muscle physiology.

What does participation in this research involve?

Thirty six sedentary (<150 min/week moderate-intensity exercise), but otherwise healthy, volunteers will be required for this study. The study is seeking males who are 35-45 years old and in the normal-overweight range (BMI 25 – 35 kg/m^2).

Screening: Initial screening will take place via telephone. This screening will comprise medical history, age, self-reported height/weight (in order to calculate BMI), self-reported activity levels and completion of the Exercise and Sports Science Australia exercise pre-screening tool to assess readiness to exercise.

Consent form: If you decide to participate in this study and meet the selection criteria, a consent form will need to be signed prior to any assessments being performed. Prior to signing, you will be given the opportunity to ask any questions and have any concerns clarified.

Participation in this project will involve **11** visits for testing and **18** training sessions at the Centre for Exercise and Nutrition at the Australian Catholic University (Fitzroy, Melbourne). **Table 1** outlines the study.

Specific details of each visit, the time commitment and procedures are outlined below.

We are located in the Daniel Mannix Building (17 Young Street or 8 Brunswick Street, Fitzroy) and the initial testing will take place on Level One in the Centre for Exercise and Nutrition's research lab – Room 1.03. To find the room, take the lift to level 1 and exit to your left, follow the signs and you will find room 1.03 where measurements will occur.

Table 1. Participation summary

Study week	Visit	**Dates** (pick and stick with one)	Time	Comment
-3	1	TBC	30-60 min	Meet and greet, forms
Preliminary testing				
-2	2*	TBC	2.5 h	Oral glucose screening test
-2	3*	Sat or Sun	~3 h	Main testing day 1
-1	4	Tues or Wed	~1 h	Ultrasound + fitness test (endurance)
-1	5	Wed or Thu	1.5 h	Fitness test (strength)
Exercise training				
1-6	18 sessions (3 / week)	TBC	30-60 min / session	Cycling or weights depending on which group you are randomized to
Post exercise testing				
6	6*	Sat or Sun	~3 h	Main testing day 2
7	7	Mon or Tue	~1 h	Ultrasound + fitness test (endurance)
7	8	Tue or Wed	1.5 h	Fitness test (strength)
9	9*	Sat or Sun	~3 h	Main testing day 3
10	10	Mon or Tue	~1 h	Ultrasound + fitness test (endurance)
10	11	Tue or Wed	1.5 h	Fitness test (strength)

***must arrive fasted between 6:00 – 8:00 AM**

For example, if you pick Saturday as your Main testing day 1, you must stick with this for Main testing day 2 and 3. Same applies for other visits.

Table 2. Each visit in more detail

Visit/Training session	What will happen?
Visit 1	• Meet and greet • Sign forms
2	• Oral glucose tolerance test (OGTT) • Diet recording explained • Collect pre-biopsy dinner meal

3	• Main testing day 1
	  ○ DXA scan
	  ○ RMR test
	  ○ Muscle biopsy
	  ○ Cognitive tasks
	  ○ Activity monitors attached

4	• Leg muscle ultrasound • Endurance fitness test • Diet consult
5	• Strength test
Training sessions 1-18	• All morning sessions at ACU lab or gym • Mon, Wed, Fri or Tues, Thu, Sat **(you choose, must stick with choice)** • Daily diet recording using phone App • Activity monitors attached

Visit 6	• Main testing day 2
	  ○ DXA scan
	  ○ RMR test
	  ○ Muscle biopsy
	  ○ OGTT
	  ○ Cognitive tasks

7	• Leg muscle ultrasound • Endurance fitness test
8	• Strength test • Activity monitors attached

9	• Main testing day 3
	  ○ DXA scan
	  ○ RMR test
	  ○ Muscle biopsy
	  ○ OGTT
	  ○ Cognitive tasks

10	• Leg muscle ultrasound • Endurance fitness test
11	• Strength test • Activity monitors removed

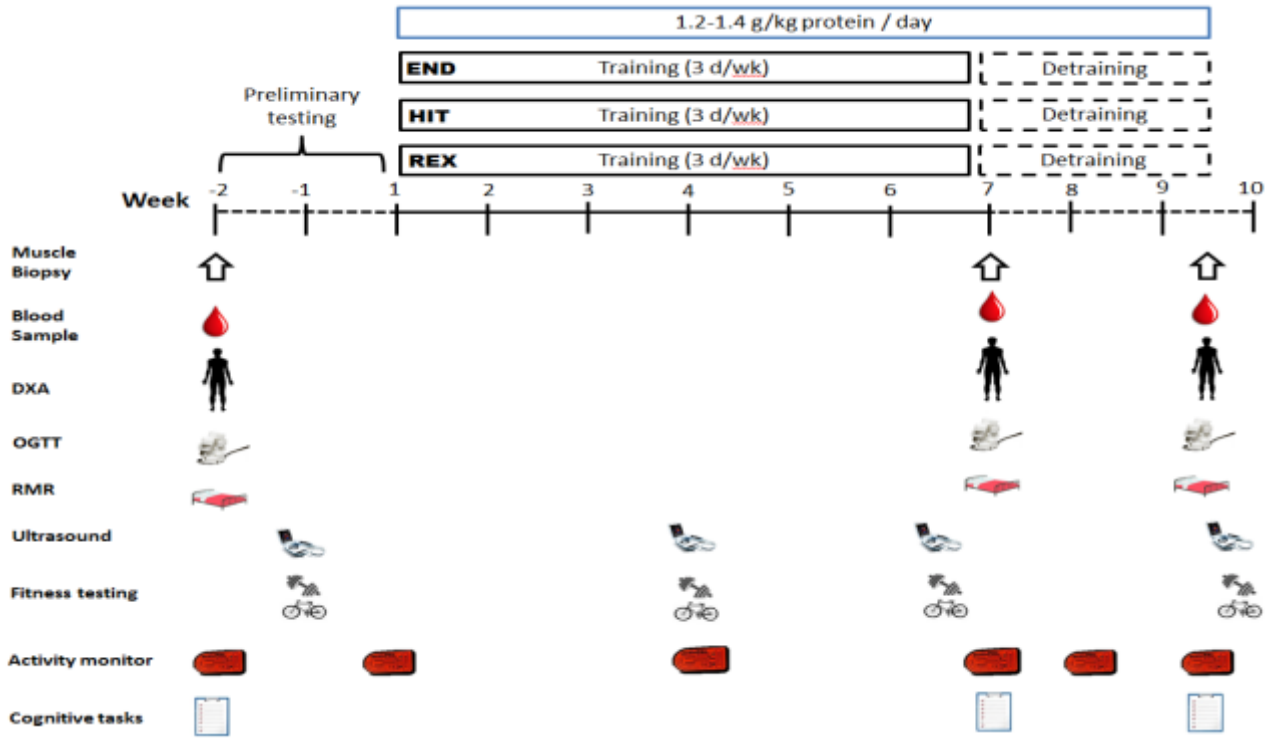

Figure 1. Overview of experimental protocol.

PROCEDURES

Pre-study procedures

Screening via telephone: Initially screening will take place via telephone. This screening will comprise medical history, age, height and weight (in order to calculate BMI) and completion of the Exercise and Sports Science Australia pre-screening tool. If this tool designates you to be at high-risk for high intensity exercise then you will be asked to visit your GP to attain clearance to perform the study measures and training.

VISIT 1

Once identified as eligible, and any questions you may have about the study are answered, researchers will arrange dates and times for a 'meet and greet' at ACU to meet the research staff and see the facilities used for this study.

Study procedures/assessments

Preliminary testing (weeks -2 and -1)

VISIT 2

At the next visit, you will go through the participant information letter, sign the study consent form and a muscle biopsy consent form. At this stage, you will also participate in the following measures:

1. **Anthropometric measurements (~5 min):** Height will be measured using a wall mounted stadiometer. Weight will be measured using digital scales. Hip, waist and neck circumferences will be measured with a metal tape measure. All measures will be taken in duplicate.
2. **Oral glucose tolerance test (OGTT) (~2 h):** This test involves consumption of a drink containing 75 g of sugar to measure blood glucose levels and subsequently assess if a person has diabetes. An indwelling cannula will be inserted to a forearm vein to take one blood sample every 30 min for 2 hours (5 blood samples in total). Once you have consumed the drink, you will sit down and have the phone App used for diet recording explained to you (as per below). Following this, you may watch a movie or use the WiFi available at ACU. If the final blood sample reveals that you have a blood glucose level at that of a person with type 2 diabetes, you will not be able to participate in this study and a letter for you to take to your GP will be provided. You will be provided with light refreshements after the OGTT (e.g. muesli bar, raisin toast, Up'n'Go).
3. **Diet recording explained (~15 min):** You will be asked to record ALL food and fluid consumed over a three-day period prior to the experimental period to establish habitual dietary intake using the 'Easy Diet Diary' or 'My Fitness Pal' phone application. To assist with compliance, and reduce the burden on you, household measures will be recorded. A comprehensive document will be provided and this will be explained to you in detail.
4. **Collect standardised meal:** You will be provided with a dinner meal to be eaten the night prior to the muscle biopsy. This meal must be consumed at least 10 hours prior to the muscle biopsy.

VISIT 3

1. **Body composition assessment (~30 min):** A dual-energy x-ray absorptiometry scan (DXA) is a specialised x-ray technique to provide a measure of body composition. This is similar to a normal x-ray, with no pain involved and will obtain a measure of total body mass, fat mass and lean mass. Participants are required to lay supine on the scanning bed for the duration of the scan, which is approximately 15 minutes and will be one to two scans depending on your body shape. The machine uses **small doses (<1% of the yearly radiation dose) of radiation** to estimate tissue density. This test **requires you to be fasted** with no food, fluid or exercise/activity prior to the test and requires you to wear light clothing with no metal items (i.e. zips, domes, clips, underwire etc.) and remove all jewellery. Please check with the research staff if you are unsure. All measures will be taken by trained researchers Dr Evelyn Parr, Dr Brooke Devlin or Mr Marcus Callahan.
2. **Resting Metabolic Rate (~25 min):** This assessment also involves you being fasted and therefore will be completed immediately after the DXA san. For 25 minutes you will be lying in a quiet, dim-lit room where we can measure your resting metabolic rate using an automated gas analyser. A hood, as in the picture, will go over your head and is connected to the gas analyser. There is a 10 minute rest period followed by a 15 minute period where the data will be collected. The information from

this test will also be used to give an assessment of estimated energy requirements for comparison with your dietary intake information. These measures will be taken by Mr Marcus Callahan or Dr Evelyn Parr.

3. **Muscle biopsy sample (~20 min):** In preparation for a biopsy, a small amount of local anaesthetic is injected under your skin, which may result in a mild burning sensation while the fluid is injected. A small, 4-5 mm incision is then made into the skin to create an opening for the biopsy needle. There is often a small amount of bleeding from the incision; however, this bleeding is generally minimal. The biopsy needle is then inserted through the incision site. You may feel the sensation of deep pressure in the biopsy site, and on some occasions this is moderately painful. However, the discomfort very quickly passes and participants are capable of performing exercise and daily activities within minutes. There may also be some minimal bleeding when the needle is removed which may require the application of pressure for a few minutes. Some of the researchers on this project have had several muscle biopsies themselves so please direct any concerns or questions about the procedure to them if you have any.

   After each biopsy, the incision will be closed with sterile tape and wrapped with a bandage. Once the anaesthetic freezing wears off, your leg may feel tight and often there is the sensation of a deep bruise. Painkillers such as paracetamol (e.g. Panadol) or Ibuprofen (e.g. Advil or Neurofen) are acceptable to use if you do experience pain associated with the biopsy. Periodically applying an ice pack to the biopsy site the following day reduces any local swelling and/or residual soreness. Your leg may feel uncomfortable the following day when walking down stairs and to some lesser extent activities that involve forceful movements of the abdomen. To allow the incisions to heal properly and minimize any risk of infection, participants should avoid prolonged submersion in water for 4 days. Daily showers are acceptable, but baths, swimming, saunas etc. should be avoided for at least 4 days following the biopsy. We do encourage you to visit Dr. Andrew Garnham 7-10 days following the experimental trial day to check the biopsy safely and re-apply dressings/ bandages, should it be required.

   A **total of 3 muscle biopsies** will be taken over the entire study period. Shortly after the morning muscle biopsy sampling, you will be offered light refreshments (e.g. raisin toast, cereal, Up'n'Go).

4. **Cognitive testing and questionnaires:** Following the muscle biopsy, you will be asked to complete different cognitive tasks on a laptop. These tasks are designed to assess how the exercise training may affect your mood, behaviour and barriers to physical activity. These measures will be coordinated by A/Prof Lean Brennan.

5. **Fitted with activity monitors:** To track physical activity levels, you will be asked to wear an activity monitor on your thigh and around your waist for weeks -2, 1, 4 and 7-9. These monitors are small, non-obstructive and are worn under clothing in contact with your skin (i.e. unnoticeable during the day).

VISIT 4

1. **Muscle ultrasound (~10 min):** Two-dimensional ultrasound is the most common technique used for assessing the structure of a muscle. Participants will be required to lie on their back on top of a massage table. Two-dimensional ultrasound will then be used to assess the structure of the quadriceps muscles at three sites along the length of the thigh. Participants will then be asked to move onto their stomach. They will then

have the structure of their hamstring muscles assessed. The entire ultrasonography assessment will last approximately 10-15 minutes. Dr Ryan Timmins will co-ordinate and run all ultrasonography assessment.

2. **Maximum effort cycling exercise test [VO_2 peak] (~45 min):** Aerobic capacity will be assessed by measuring the maximum volume of oxygen (VO_2) you can breathe in and transport to your working muscles while exercising at maximal intensity. After a light 5-minute warm-up on a cycling ergometer (exercise bike), you will pedal at a fixed intensity (watts) that will increase every 1-2.5 min until volitional fatigue. During this test you will wear a mouthpiece and headpiece that is connected to a tube for the collection of expired air. Following the warm-up, the test will last for 10-15 minutes where the last few minutes should be perceived as exhaustive. After the test has finished, you will be given time to rest and recover. These measures will be taken by Mr Marcus Callahan, Dr Evelyn Parr and Dr Donny Camera.
3. **Diet consult (10 min):** You will meet briefly with a member of the research team to discuss your prescribed energy and protein targets for the following 8 weeks. Practical recommendations will also be made to assist with diet recording and spreading your protein intake across the day.

VISIT 5

1. **Strength testing (1.5 h):** Maximum muscular strength will be determined during a series of one repetition maximum (1RM) attempts. The 1RM attempts will be performed on the leg press, leg extension and bench press exercises. You will be shown correct and safe technique for each exercise by a qualified exercise scientist and will subsequently be provided with appropriate time to safely perform each technique until competent and comfortable. Following an appropriate warm-up for each selected exercise, a single exercise repetition will then be performed with 5 minutes of recovery between each attempt until the repetition load that can be completed once but not a second time is determined. These measures will be taken by Mr Marcus Callahan and Dr Donny Camera.
2. **Provided with high protein supplements and food:** To assist with reaching your prescribed energy and protein targets during each day of the experimental protocol, you will receive high-protein supplements (e.g. protein powder) and foods (e.g. yoghurt) at no charge. These products are to be consumed in accordance with the dietary protocol which will be explained by the study researchers.

Exercise training (weeks 1-6)

TRAINING SESSIONS 1-18

You will be randomized to one of the following three groups, where all sessions are to be performed in the morning:

1. **High intensity interval training (HIIT):** All training sessions will be performed indoors on an exercise bike in the CEN research lab. After warming up at a light intensity for 3 minutes, you will perform 10 x 1 min cycling work efforts at 90% of your peak power output (PPO) separated by 1 min recovery at 30 W. To finish the session, you will complete a light warm down for 3 min. The efforts will be increased in intensity progressively throughout the program.

2. **Resistance exercise (REX):** The resistance exercise protocol will consist of a whole-body routine using machines and free weights. In week 1, new movements will be introduced at low loads with very strong focus on performing the exercises with correct technique. Resistance exercise will progressively increase in weight to account for increases in muscle size and strength throughout the program. The exercises to be performed and a template of the program will be outlined in detail by the study researchers.
3. **Endurance exercise (END):** All training sessions will be performed indoors on an exercise bike in the CEN research lab. Training will vary in intensity and duration throughout the 6-week program however intensities will range between 50-65% of your maximal aerobic capacity and durations between 30-60 min. A template of the program will be outlined in detail by the study researchers.

Post-exercise testing (week 7)

VISIT 6

- DXA, RMR, muscle biopsy, OGTT and cognitive tasks (as described in visit 2 and 3)

VISIT 7

- Muscle ultrasound and endurance fitness testing (as described in visit 4)

VISIT 8

- Strength fitness testing (as described in visit 5)

Detraining period (weeks 7-9)

You will be asked to refrain from any form of exercise for 2½ weeks and consume while tracking your intake using the diet logging App compatible with your phone. During this time you will be asked to continue meeting the study diet requirements. After all study measures are complete, you will be offered 2½ weeks of exercise training at ACU under the supervision of research staff to account for the physical inactivity during the detraining period.

Post-detraining period testing (week 10)

VISIT 9

- DXA, RMR, muscle biopsy, OGTT and cognitive tasks (as described in visit 2 and 3)

VISIT 10

- Muscle ultrasound and endurance fitness testing (as described in visit 4)

VISIT 11

- Strength fitness testing (as described in visit 5)

Are there any risks associated with participating in this project?

As a participant you will be exposed to some risks arising from the study. Appropriate measures will be taken to provide you with the safest possible testing environment. The invasive procedure (blood sampling) will be conducted by a certified phlebotomist under sterile conditions and using single use sterile equipment.

The risks associated with participation in this study are:

Blood sampling – There will be 5 blood samples taken at each OGTT (3 in total). Specifically, 6 mL of blood will be drawn for the first sample and 4 mL of blood will be drawn for each of the following 4 samples. Therefore, the total volume of blood sampled in this study is 66 mL over 9 weeks. This is minimal compared to the standard 500 mL for a Red Cross donation. This may cause some discomfort or possible bruising. Sometimes, the blood vessel may swell, or a clot may develop in the blood vessel or there can be minor bleeding. Although the possibility of significant bruising or bleeding is small, if by chance it does eventuate, consult your doctor immediately and inform the study coordinator (Dr Donny Camera).

Dual-energy x-ray absorptiometry – this procedure provides an estimate of your body composition (fat and lean mass). The scan takes ~15 minutes and will be one to two scans depending on your body shape. The machine uses **small does (<1% of the yearly radiation dose) of radiation**.

Muscle biopsies – sampling of the muscle can result in a small amount of bruising, swelling, and bleeding and there is a low risk of nerve injury. All biopsies will be completed following the use of a small amount of local anaesthetic, sterile needles, sterile consumables and an extremely experienced doctor (Dr Andrew Garnham) to reduce any risk of feeling uncomfortable/pain. Dr Garnham has previously completed >10 000 muscle biopsies.

VO_2peak testing – This test will require maximal exertion and therefore can result in some discomfort. The Exercise and Sport Science Australia Pre-Screening Tool will be completed beforehand to ensure that you are suitable to undertake the test. If you are not cleared to participate by the screening tool you will need to obtain approval form a general practitioner to participate. In the unlikely event that you experience discomfort beyond what is expected with exercise, please notify research staff. You are able to end the test at any time.

One-repetition maximum (1RM) testing – This test will require maximal exertion and therefore can result in some discomfort. Following an appropriate warm-up for each selected exercise, a single exercise repetition will then be performed with 3 min recovery periods between each attempt until the repetition load that can be completed once but not a second time is determined. The 1RM attempts will be performed on the leg press, leg extension, bench press, seated row and shoulder press exercises.

Exercise training – Similar to VO_2peak and 1RM testing, exercise training may result in some discomfort. We cannot rule out the possibility of you sustaining an injury while undertaking resistance, endurance or high-intensity interval training. These may include cardiorespiratory stress (e.g. shortness of breath) or a musculoskeletal injury (e.g. strained muscle, tendons or ligaments) however it is important to note that the risk of injury associated with this study is the same as with a typical resistance or aerobic exercise session. Importantly, the loads used for each training session in this study will be tailored to your strength or aerobic fitness capabilities

to minimize the chance of injury. In the unlikely event that you experience discomfort beyond what is expected with exercise, please notify research staff. Participation in this study can be suspended or terminated if a medical issue or distress occurs. There may be additional unforeseen or unknown risks.

What are the benefits of the research project?

We cannot guarantee or promise that you will receive any benefits from this research. However, potential personal benefits may include measurements of your blood glucose regulation, body composition, resting metabolic rate, cardiovascular fitness (VO_2peak) and strength. Participating in supervised exercise training may also be of benefit.

Can I withdraw from the study?

Participation in this study is completely voluntary. You are not under any obligation to participate. If you agree to participate, you can withdraw from the study at any time without adverse consequences. However, if you decide to leave the project, the researchers would like to keep the personal and health information about you and any blood samples that have been collected. This is to help them make sure that the results of the research can be reported properly. If you do not want them to do this, please advise them before you join the research project.

Will anyone else know the results of the project?

All information that you provide as part of your participation in the study will remain confidential and private and no publications arising from the study will contain names or other identifying information. Randomly assigned codes will be generated to identify all data such that no personal details will be linked to any measures you provide for this study. Samples will be destroyed in line with the ACU privacy policy following publication or 5 years post investigation.

Only at your request, will study personnel disclose medical results to your primary care physician or specialist. Data records will be kept securely in a non-identifiable format and will only be accessible by research staff. These records will be retained by the University for five years following publication, or five years following the completion of the project. After this period, data will be disposed of in accordance with the ACU's privacy policy.

Will I be able to find out the results of the project?

Once the study has been completed you will be provided with a summary of both your individual results and group data by mail. If the study results are published in a scientific journal you will also be sent a copy of the publication. You are free to ask questions of our research staff at any time during the study.

Who do I contact if I have questions about the project?

The principal investigator for this study, Donny Camera, can be contacted from 8:00 am to 4:00 pm on +61 3 9953 3527 or via email at donny.camera@acu.edu.au.

Reimbursement for costs

There are no costs associated with participating in this research project, nor will you be paid. However, you will be reimbursed $400 for participating in the research project to cover any costs incurred with the appointment schedules and travel/parking.

What if I have a complaint or any concerns?

The study has been reviewed by the Human Research Ethics Committee at Australian Catholic University (2017-104H). If you have any complaints or concerns about the conduct of the project, you may write to the Manager of the Human Research Ethics Committee care of the Office of the Deputy Vice Chancellor (Research).

Manager, Ethics
c/o Office of the Deputy Vice Chancellor (Research)
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North Sydney Campus
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Email: resethics.manager@acu.edu.au

Any complaint or concern will be treated in confidence and fully investigated. You will be informed of the outcome.

I want to participate! How do I sign up?

If you would like to participate in this research study, please contact Donny Camera on +61 3 9953 3527 or at donny.camera@acu.edu.au or Marcus Callahan on +61 431 084 600 or marcus.callahan@myacu.edu.au to determine if you are a suitable candidate and have a pre-screening phone call.

Yours sincerely,

Dr Donny Camera
Principal Investigator

Professor John Hawley
Dr Evelyn Parr
Dr Brooke Devlin
Dr Ryan Timmins
A/Prof Leah Brennan
Associate Investigators

Mr Marcus Callahan
PhD student