

Participant Information Sheet



Title of Project:

Effects of CHO availability on exercise capacity following a sleep-low approach to training adaptation.

Name of Researcher[s]: David McMullan, Paul Lynch, Douglas Crichton, Hannah Mayho & William Payne

Name of Research Supervisor: Dr James Morton

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Contact Details:

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You are being invited to take part in a student research study. Before you decide, it is important that you understand why the research is being done and what it involves. Please take time to read the following information and decide whether you wish to take part in the study.

What is the purpose of the study?

The aim of this study is to investigate the effect of carbohydrate availability on exercise capacity.

Why have I been chosen?

You have been selected as you fit the criteria of being male between the ages of 18-35 with an anticipated VO₂ max of greater than 50 mL/kg⁻¹/min⁻¹.

Do I have to take part?

You are not required to take part and do so on a purely voluntary basis.

What will happen if I volunteer to take part in this research?

If you chose to take part in this study, please contact the research team as below. We will then send you a declaration form to sign and return to us.

What will the research involve?

You will be required to participate for a total of 4 weeks. The first week will consist of a VO₂ max and a lactate threshold/turn point assessment where finger prick blood samples will be taken and gas analysis will be used. You will then undergo a full familiarisation of the protocol three days later.

The following three weeks will require three treadmill sessions per week split over 2 consecutive days, as below:

Day 1

- **8am** – An aerobic high intensity interval training session involving a 5-minute warm up, followed by 6 x 3 minute efforts at high intensity interspersed with 90 seconds of recovery at walking pace.
- **3pm** – A glycogen depletion involving a self-selected 5-minute warm up, will commence with 2 minutes of running at 100% VO₂ max followed by 2 minutes recovery at 60% VO₂ max. Once the subject cannot complete 1 minute at 70% VO₂ max, or after 90 minutes of the protocol, the glycogen depletion will be ceased and subjects will be asked to perform a 5 minute cool down at standardised walking pace of 5-6km/hr.

In between these sessions food will be provided and must be consumed hourly. Following the evening session either food or a sports drink will be provided which must also be consumed hourly.

Day 2 (following day)

- **8am** – An exercise capacity test to exhaustion. The same 5-minute self-selected warm-up will be followed by 30 minutes at lactate threshold intensity. Once 30 minutes has been completed, the subject will then proceed to complete 5-minute efforts at lactate turn point intensity interspersed with 1-minute recovery at walking pace until exhaustion.
- Three finger prick blood samples will be taken at the beginning, halfway point and end of the 30 min period. Gas analysis will take place during the exercise capacity test.

Will I receive financial reward for taking part?

We are unable to offer any financial reward for this study. However, upon completion of the full protocol, we will provide you with a Science in Sport goody bag and a complimentary body composition assessment.

What are the possible benefits of taking part?

You will undergo physiological tests, which will offer an insight into your current fitness levels and provide information that may help to inform your current training and nutrition regimes. You will gain exposure to highly technical and specialised methods of research and may be able to take note of methodologies used, and if you are a student potentially apply them to your own research in future.

What are the side effects of taking part?

There are no predicted side effects to participation in this study.

Will participation involve any physical discomfort or harm?

The protocol and physiological tests require maximal effort and are therefore likely to be physically uncomfortable at times. Efforts will be made to minimise any discomfort, for example the use of a fan during testing.

Will I have to provide any bodily samples (e.g. blood or saliva)?

You will be required to have blood taken via a finger prick, during some physiological tests. The amount of blood taken is minimal.

Will participation involve any embarrassment or other psychological stress?

There are no predicted causes for embarrassment or psychological stresses. If you have any causes for concern at any point before you decide to take part or during the study, please discuss these with any of the researchers.

Will my taking part in this study be kept confidential?

All information collected will remain confidential and all participant data will be anonymised.

What will happen with the data I provide?

All data will be used as part of a team of MSc student's dissertation project. You will not be personally identifiable by your results. Any data collected will be destroyed within 12 months of the completion of the study.

Who has reviewed this study?

This project has undergone full ethical scrutiny and all procedures have been risk assessed and approved by Liverpool John Moores Sports Science Ethics Committee.

Who has organised this study?

The study has been organised by Douglas Crichton, Hannah Mayho, David McMullan, William Payne and Paul Lynch who are Sports Nutrition MSc students at Liverpool John Moores University. The study is supervised by Dr James Morton, a lecturer at Liverpool John Moores University and Head of Nutrition at Team Sky Cycling.

What if I am unhappy during my participation in the project?

You are under no obligation to complete the study and are free to leave at any time. If you do wish to leave the study please contact any member of the aforementioned team and they will facilitate your withdrawal. You are not required to give any reason for your withdrawal. Any information collected during the study will be deleted; any paper copies will be shredded and disposed of as confidential waste.

Upon completion of the study you still have the right to withdraw any and all personal data, if you wish to do this, you may contact any of the team on the email addresses below:

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Dr James Morton (email: J.P.Morton@ljmu.ac.uk)

If at any point during the study you feel your rights have been infringed, you may contact James Morton on 01519046233/J.P.Morton@ljmu.ac.uk.

