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Information Sheet

Introduction:

Project title: The effects of a marine mineral supplement on lactate response in trained cyclists.

School: School of Public Health, Physiotherapy and Sport Science

Researchers: Mr Brian Connolly, Dr Katy Horner, Dr Shane Heffernan

What is this research about?

The research is examining the effects of a marine mineral on high intensity repeated cycling performance and blood lactate in cyclists. There is some preliminary evidence to suggest this could be an effective supplement to improve cycling performance, however there were limitations in this study and the research to date is limited. There is very little information on marine multi minerals on exercise performance and lactate metabolism so this study may add to the field of exercise physiology.

Why is the research being done?

This study is being undertaken to determine whether marine mineral supplementation is an effective strategy to improve cycling performance. If found to be effective, this would expand scientific knowledge in this area and will provide information to cyclists on a natural supplement that could be used to enhance performance.

Why have you been invited to take part?

You have been invited to take part as you are male, between the ages of 18 and 35 and cycling a minimum of 100km per week for the last 6 months. However, in order to take part in this study you must:

- 1) Have no injuries in the last 3 months
- 2) Not have any medical condition which may prevent you from taking part
- 3) Be willing to undergo exercise testing and blood prick sampling

How will your data be used?

Data will be used to indicate if the supplement has beneficial effects on performance. The results may be published as a scientific paper. Each participant will be given a code and their data will be stored on a password protected computer, with the master sheet stored in a



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password protected folder. It will be stored for 2 years. None of your details will be shared with third parties. You will be able to receive your results on request.

What will happen if you decide to take part in this research study?

If you decide to take part in this research, we will first ask you to complete a screening questionnaire. If you are eligible to participate in the study, we will arrange for you to pick dates where you are available to participate in the study and come into UCD to undertake an initial testing and familiarization testing. We will then ask you to attend a testing session prior to commencing taking of a marine mineral or placebo supplement for a week. You will then be given a minimum two week break from testing. Following this you will be asked to complete another testing session followed by one week of marine mineral or placebo supplementation, and a final test session. This will allow us to compare how your performance differed after taking the placebo compared to marine mineral supplement. Prior to all testing days, you are asked to avoid strenuous exercise for 24 hours beforehand. On arrival at the first testing session, we will give you an informed consent form to sign and your height and weight will be measured.

When you come to the laboratory on the 1st day, you will be asked to:

- 1) Complete a VO₂max and lactate threshold test
- 2) Have height and weight measured
- 3) Complete familiarization with the Wingate test (a high intensity 30 second cycle test)

We envisage that this testing session will last approximately 1 hour.

We will ask you to return to the laboratory after a minimum of 2 days to undertake a high intensity test on a cycle ergometer (Wingate test). You will be asked to undertake up to 4 high intensity 30 second cycle bouts, with a 3-minute break in between. We will measure your blood lactate by finger-prick periodically during this time and during recovery. We envisage that this testing session will take approximately 30 minutes.

You will then be provided with one week's supply of supplements (either marine mineral or a placebo (in this case maltodextrin). You will be asked to take one capsule each day for the following 7 days. At the end of the 7-day period you will be asked to return to the laboratory to undertake an identical test session involving up to 4 high intensity 30 second cycle bouts separated by 3 minutes in between.

You will then have a minimum two week period with no testing and you will repeat the high intensity cycle test followed by one week of the alternative supplement (marine mineral or



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placebo) and the same high intensity cycle test again immediately post-supplementation period,

Therefore, it is envisaged your total time requirement for this study would be a 1 hour initial test session, followed by 4 identical high intensity cycle exercise test sessions (lasting 30 minutes each) spaced at intervals over a 5 week period (total time commitment 3 hours).

If you change your mind at any point, you may withdraw at any stage throughout the study and are under no obligation to complete it.

What are the benefits of taking part in this research study?

On request, you will be provided with your results from the study, including VO₂max and lactate results which can be used to calculate optimal training zones for you to improve your training. In addition, you will be contributing to knowledge about the marine mineral supplementation for exercise performance.

What are the risks of taking part in this research study?

The researchers would like to draw your attention to the following:

- 1) Blood collection – all samples will be collected by a trained researcher by finger-prick. Only a few drops of blood will be collected each time. There may be mild discomfort and a small amount of localised bruising as a result of blood collection, but no more than is experienced with a routine blood test.
- 2) High intensity exercise - Given that these tests imply a maximal effort, there is a minor risk of musculoskeletal injury, and muscle soreness. This will be minimised by appropriate warm up before the testing. Additionally, you will be thoroughly familiarised with the task, so that you know what you will be doing. Finally, a qualified first-aider with access to a first aid kit to be on hand during testing.

Can you change your mind at any stage and withdraw from the study?

Your participation in this project is voluntary. After having read this information sheet, we advise that you take time to decide whether you would like to take part in this study or not. If you do agree to participate, you can withdraw from participation at any time during the project without comment or penalty. Your decision to participate will in no way impact upon your current or future relationship with UCD.

How will you find out what happens with this project?



**UCD School of Public Health,
Physiotherapy and Sports Science**

**Scoil na Sláinte Poiblí, Fisiteiripe
agus na hEolaíochta Spóirt UCD**

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On request, you will be provided with your results as they become available. If you wish, your contact details will be kept on a database and when the study is finished and the information has been analysed, you can be sent some information on the study outcome.

Contact details for further information:

If you would like any more information on this study, please feel free to contact

Dr. Katy Horner, email: katy.horner@ucd.ie

Brian Connolly, email: brian.connolly2@ucdconnect.ie