

Rosey Acker
School of Sciences and Physical Education
University of Canterbury
Private Bag 4800
Christchurch
8140

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Department of Physical Education & Sport Coaching INFORMATION

You are invited to participate as a subject in the research project the **“The impact of plyometric-enhanced training on the track cycling standing start in junior athletes”**

The aim of this project is to assess the impact of including plyometric training within an existing track cycling sprint training programmes. The project will be specifically looking at the effect the training will take on the first 50m of a standing start sprint lap and vertical jump.

Plyometrics are exercises that involve explosive movements which help to improve the explosive power produced within an athletes muscles. This type of power is particularly important in track cycling, especially in the standing starts. We all know how many sprint events have been won by tyre widths, so gaining that extra boost in the starts could be the difference between a win and a loss. A lot of research around sprint performance and plyometric training has already been completed, this is what I have based my project off. Here is a quick video link if you are interested in the types of exercises that can be performed or what plyometrics is <http://www.youtube.com/watch?v=8xJmCYTI42s>.

I am asking that you will volunteer to complete the four weeks of training, with two testing sessions, before and after the training. The requirements for both the training and testing are outlined below:

- All of the participants will be divided randomly into two groups, control and experimental. The control group will only be participating in the testing and the sprint training portion of the project. Their purpose of this group is for comparing the plyometric testing results to, so the impact of sprint training alone can be determined and related to the impact of the plyometric training.
- The training will take place over four weeks. The sprint training will be classed as your normal track training times. The plyometric training will be completed twice a week with three sessions on offer so you can fit it around your school and training schedules. The trainings have been designed as a circuit, so you can train with your friends and still have some fun! You will need to bring gym shoes and wear comfortable clothing. Each training will take between 30-45minutes, including warm-up and cool-down.
- Training days will at this stage be held Monday, Wednesday, Friday after school, either before or after your track training sessions. You only need to attend two of these sessions each week. The final times and days for these sessions will be communicated to you before the project begins in the week starting 27th August 2012.

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1. This project has been approved by the University of Canterbury Human Ethics Committee.
 2. Complaints may be addressed to:
Dr Mike Grimshaw, Chair, Human Ethics Committee
University of Canterbury, Private Bag 4800,
CHRISTCHURCH 8140

Telephone: 364 2390

- The testing will take place in the week starting 27th August 2012 and the week starting 24th September 2012 (final days and times TBA). There will be two main tests being completed. A vertical jump test and a stand start track sprint. The vertical jump test will be to measure how explosive your leg power is and is simple completed by performing a two footed squat jump, marking the top of your jump on a wall and measuring the difference in start and finish height. The track sprint will be performed using a start gate and your own or club bike. The gear will be restricted to 81.0 inches to keep everyone on the same level. Timing lights will be used to time the first 50m of the lap, where your explosive power is used. Please bring all you will need to ride on the track for the session and gym shoes for the jump test.

- **Please note: It is very very important that those participants that are allocated to the control group do not partake in any plyometric training during the four training weeks as this will impact the results of my study. Following the final testing sessions I am more than happy to take the control participants through the plyometric training so they can start using it as well.**

For all tests could you please adhere to the following guidelines:

- Try and keep as fresh as possible for the tests by refraining from vigorous training in the 48 hours prior to the testing. A period of complete rest from any training should be observed 12 hours prior to testing.
- Normally a high carbohydrate diet, low in fat should be followed in the days leading up to testing.
- You may choose to bring a high carbohydrate snack or sports drink to consume on completion of both tests to aid recovery.

With any form of strenuous activity, there is a degree of risk involved. The risks, however, diminish when completing exercise that you normally undertake in your daily life and with good fitness. It is important to know what risks you may face during the project so you can make an informed choice about your participation.

Track cycling carries a risk of accidents and injury during training and racing. Please ensure you have had track cycling experience. Before the testing and trainings, you will be required to complete a thorough warm-up consisting of riding around the velodrome to warm the muscles and prepare the cardiovascular system and stretching to minimize the risk of injury. The training is high impact on the body which brings the risk of injury. If at any point during the training, you experience discomfort, dizziness, pain or any other side effects, you are 100% able to sit out or withdraw from the project. Your safety comes first.

The information you divulge during pre-test screening and the actual test results will remain confidential between the testers and yourself and is necessary to determine any risks during testing. In addition, you will be provided with a summary of your results and an interpretation of the data.

The results of the project may be published, but you may be assured of the complete confidentiality of data gathered in this investigation. The identity of participants will not be made public. The

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anonymous results may be published in a journal or other publication, and these would be available publicly via the UC library database. To ensure anonymity and confidentiality all data collected will not be associated with the participants name. You have the right to withdraw from the project at any time, including withdrawal of any information you provided.

The project is being carried out by myself, Rosey Acker who can be contacted at, 0273498104 or by email rosey.acker@gmail.com. She will be pleased to discuss any concerns you may have about participation in the project. Your participation is sought voluntarily. Your individual results can be discussed with you at the end of each test if you so desire, and a summary of the results will be offered to you as a participant at the end of the study.

I am travelling to Invercargill to complete an internship with Cycling Southland, during which all of the training and testing will be completed. Following the confirmation of participants and testing and training times, a follow up letter will be sent out informing you of all times, dates, equipment required and the answers to any of the questions you may need answers.

Feel free to contact me with any questions you may have.

Rosey Acker
Bachelor of Sports Coaching, University of Canterbury

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