



Effect of supplementary tart cherry juice on sleep quality, recovery and next day performance in elite water polo players

Participant Consent Form

Purpose

Tart cherry juice has been linked to improved recovery following exercise, reduced inflammation and improved sleep quality. As such, this project aims to assess the influence of a dietary supplement in the form of tart cherry juice, on your quality of sleep, recovery and next day performance following a simulated water polo match.

Methods

This investigation involves 2 experimental trials, each separated by a minimum of 14 days. Each experimental trial will be conducted over 8 consecutive days.

Experimental Trials

During each experimental trial, you will be required to attend testing on the morning of day 1 to undertake the battery of waterpolo performance tests. The test will include a 10-m sprint (swim) test, in-water vertical jump test, the waterpolo intermittent swim test and the repeat sprint test. Additionally, technical skill will be analysed using a shooting accuracy test consisting of 8 shots at a target 8 meters away. All training sessions scheduled over the 7 days will be undertaken with the Western Australian Institute of Sport's (WAIS) male water polo team. As a participant in the study, you will be provided with a sleep watch and diary that you will have to wear/complete over the 7 days. This will include information such as your sleep duration and perceived quality of sleep.

You will also be asked to consume a liquid food supplement in the form of tart cherry juice (Cherry Active, Cherry Juice Concentrate, Australia), or a placebo equivalent that tastes and looks the same as the tart cherry juice. You will be required to consume 90 ml of the tart cherry juice or placebo equivalent daily in 2 separate doses; 30 mL before morning training and the remaining 60 mL in the evening. On day 7 of the experimental trial, you will be required to participate in a simulated water polo match to replicate its demands. This will entail 5 minute intervals of exercise (shooting, jumping, wresting, passing and swimming), maximal sprint efforts (3 x 10m) and a repeat sprint bout (4 x 10m departing every 17 seconds). The experimental trial will conclude on the morning of day 8, where you will once again perform the battery of water polo performance tests (outlined on day 1).

Procedures

A total of 4 venous blood samples will be collected throughout each experimental trial (8 in total

across both experimental trials) to measure markers of inflammatory and oxidative stress. Each sample will be collected via venipuncture, where a small intravenous sample is drawn from a vein in the forearm, similar to that experienced when having a blood sample collected by your GP. These will be taken pre-exercise on day 1 and 7 and post-exercise on day 7 and 8. Capillary blood samples (a drop of blood from your earlobe) will also be collected to measure blood lactate levels following the repeat sprint and waterpolo intermittent swim test on days 1 and 8. This will be done by creating a small pin-prick incision to your earlobe, after it has been sterilised with an alcohol swap. Finally, a saliva sample will be taken post-exercise on day 7 to analyse salivary melatonin levels and will require you to drool a sample of your saliva into a collection tube.

Risks and Possible Side Effects

The blood samples taken may result in some mild discomfort and localised bruising; however, it is a commonly performed procedure and all efforts will be made to reduce this. The structured exercise testing sessions and the simulated water-polo match used in this investigation incorporate high intensity water-based activities. The nature of these trials may require you to exercise to fatigue and might cause a degree of musculoskeletal stress. Nevertheless, it should be noted that the exertion required throughout testing is no more demanding than the normal training or competition load experienced by elite waterpolo athletes. Likewise, the investigators of this study will be continuously observing during the exercise, and all tests will be terminated at your request, or if you appear to be unduly distressed. Additionally, you should be aware that the consumption of the tart cherry juice and placebo supplement over a 7 day period may result in a red discolouration of your urine and bowel movements. This discolouration comes as a result of pigments associated with tart cherries and is normal when consuming large amounts of this fruit.

Benefits

Individual: By participating in this study, you may gain insight into the potential beneficial effects of tart cherry juice as a nutritional supplement for enhanced sleep, recovery and athletic performance. You will gain a greater awareness of your sleep habits from the data obtained from the sleep watch in conjunction with the sleep diary. Furthermore the physical tests used throughout the project are widely used and are a reasonable indication of your waterpolo specific fitness.

Community: Although the impact of this project is targeted primarily at elite water polo players, it is highly likely the outcomes will be applicable to the majority of team sports, particularly during tournaments with consecutive matches. The outcomes of this project may assist to establish a simple nutritional strategy that could promote athletic recovery.

Confidentiality

Personal details and results from this testing program will be treated confidentially at all times. Individual data will not be identified, but collective results may be published. No data will be stored on public computers within the department. All data and video will be stored on the chief investigator's computer in a secure location until the completion of this research program for a period of 7 years. Additionally; all collected blood and saliva samples will be stored on site (School of Sports Science, Exercise and Health) until the completion of the study. These samples will then be sent for analysis at the hospital pathology lab, however personal details will remain confidential. Data from this investigation may be published; however, no personal details relating

to you as an individual will not be revealed in this process.

Participant Rights

Participation in this research is voluntary and you are free to withdraw at any time without prejudice. You can withdraw for any reason and you do not need to justify your decision. If you withdraw from the study and you are an employee or student at UWA, or you are a scholarship holder at WAIS, this will not prejudice your status and rights as employee or student of UWA, or as an athlete of WAIS. If you do withdraw, we may wish to retain the data that we have recorded from you but only if you agree, otherwise your records will be destroyed.

If you have any questions concerning this research please feel free to contact the researchers listed below:

Researchers

Associate Professor Peter Peeling. School of Sport Science, Exercise and Health. The University of Western Australia. P: (08) 6488 2363. E: peter.peeling@uwa.edu.au

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Approval to conduct this research has been provided by the University of Western Australia, in accordance with its ethics review and approval procedures. Any person considering participation in this research project, or agreeing to participate, may raise any questions or issues with the researchers at any time. In addition, any person not satisfied with the response of researchers may raise ethics issues or concerns, and may make any complaints about this research project by contacting the Human Ethics Office at the University of Western Australia on (08) 6488 3703 or by emailing to humanethics@uwa.edu.au. All research participants are entitled to retain a copy of any Participant Information Form and/or Participant Consent Form relating to this research project.



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Participant Consent Form

I _____ (the participant), have read the information provided and any questions I have asked have been answered to my satisfaction. I agree to participate in this investigation, realizing that I may withdraw at any time without reason and without prejudice.

I understand that all identifiable (attributable) information that I provide is treated as strictly confidential and will not be released by the investigator in any form that may identify me. The only exception to this principle of confidentiality is if documents are required by law.

I have been advised as to what data is being collected, the purpose for collecting the data, and what will be done with the data upon completion of the research.

I agree that research data gathered for the study may be published provided my name or other identifying information is not used.

Participant Signature

Date

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