

**Project Title: The Impact of Fruit and Vegetable Enzyme Supplementation on
Aerobic Capacity, and Blood Biochemical Values Following Very Low Volume
High-Intensity Interval Exercise - Feasibility Study of Exercise Design Using
Motion-Sensing Video Games**

Consent Form for Participation in Research Study

File date : 15 / August / 2023

Consent Form Version: Version 2

Date: August 15, 2023

Revised sample version by the National Cheng Kung University Human Research Ethics Committee on May 23, 2022.

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Project Title: The Impact of Fruit and Vegetable Enzyme Supplementation on Aerobic Capacity, and Blood Biochemical Values Following Very Low Volume High-Intensity Interval Exercise - Feasibility Study of Exercise Design Using Motion-Sensing Video Games

Principal Investigator: Shu-Cheng Lin

Executing Institution: Department of Sports, Leisure, and Health Management, Tainan University of Technology

Funding Agency: None

■What is this experiment about? :

For the general population, the promotion of health is one of the most attention-grabbing issues today. According to the World Health Organization, the primary recommendations for exercise include regular aerobic activities (completing at least 150 minutes of moderate-intensity physical activity per week, exercising at least five days per week, at least 30 minutes per day, or at least 75 minutes of vigorous physical activity per week) along with everyday leisure activities (such as walking, dancing, gardening, hiking, swimming, yoga, and Tai Chi). High-intensity interval training (HIIT) has also been validated as an effective form of exercise, though studies on it are fewer compared to moderate-intensity regimes. Thus, how to enhance athletic performance and health through HIIT remains a critical issue. Motion-sensing video games, which have become popular in recent years, if combined with the fun aspect of HIIT and tested across different age groups, can provide insights into their benefits. The purpose of this experiment is academic research, not physical testing or medical diagnosis.

The research location is at the Physical Fitness Center of Tainan University of Technology, with each session lasting approximately one hour, for a total of two sessions. The experiment will use lactate analyzers and the Ring Fit Adventure game for tests. It involves performing ultra-low volume high-intensity interval exercises using a motion-sensing video game (Nintendo Switch's Ring Fit Adventure), consisting of eight rounds of 20 seconds of maximal effort exercises with 30-second rest intervals in between, totaling 380 seconds. It will collect electromyography signals, lactate levels, heart rate, and self-reported exertion scales, and calculate the training impulse (TRIMP). Participants will be grouped based on lactate levels into an enzyme group and a placebo group (8 participants each, totaling 16). The enzyme group will undergo a 14-day supplementation of fruit and vegetable enzymes (30 cc twice daily), using a commercially available product from Taiwan Enzyme Village.

■Brief Description of Study Participants :

We plan to recruit 16 healthy elderly individuals aged 65 and above, and 30 young people as participants. They must be free from any lower limb skeletal diseases, and must not have any acute exercise injuries, heart diseases, hypertension, or blood-related diseases. All participants are required not to take any additional

nutritional supplements or medications one week prior to and during the experiment. They are also required to maintain a normal diet and daily routine, avoiding the intake of alcohol and caffeine. All participants must fill out personal information, health condition surveys, personal medical history, and a consent form before the beginning of the study.

■Potential Risks and Injury Compensation:

- (1) If adverse reactions or damages occur according to the clinical research plan of this study, Shu-Cheng Lin (insert name of the researcher) is responsible for the compensation for damages. However, any foreseeable adverse reactions that are not preventable and are listed on this consent form will not be compensated.
- (2) In the event of adverse reactions or damages occurring due to this study, Shu-Cheng Lin (insert name of the researcher) is willing to provide necessary assistance.
- (3) Apart from the compensation and medical care mentioned above, no other forms of compensation will be provided by this study. If you are not willing to accept such risks, please do not participate in the study.
- (4) Signing this consent form does not waive any legal rights you may have.
- (5) This study involves the use of enzymes to investigate participants' electromyographic responses and exercise performance. If any discomfort or allergic reactions occur during its use, please stop immediately and seek medical advice.

■Research Compensation:

To express our gratitude and compensate for your time and effort in participating in this experiment:

1. Upon completion of this research project, you will receive a small gift as a token of appreciation (a gift box of oven-baked bread valued at 150 New Taiwan Dollars).
2. If you experience discomfort and choose to withdraw from the experiment midway, you will still receive the small gift as compensation.

■How We Handle Your Experimental Data:

The data (or information) obtained from the experiment will be accessible only to the research team. The data will also be used for overall analysis and publication but will not disclose individual experimental results. Furthermore, the experimental data will be stored encrypted on the principal investigator's computer and will be destroyed after five years. The results might be published in academic journals, but your name will not be disclosed and the privacy of participant data will be strictly maintained. The principal investigator will carefully protect your privacy rights. Regulatory health authorities, the research sponsor, and the National Cheng Kung University Human Research Ethics Committee have the legal right to review your data without compromising your privacy. The data retention period is five years (until July 31, 2023), after which the data will be destroyed.

■Distribution of Benefits from Patent Applications or Commercial Applications:

This study is not expected to generate patents or other commercial benefits.

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■Are you required to participate in this experiment?

You are free to choose whether to participate in the experiment, and you can terminate your participation at any time during the process without any need for compensation.

■Contact Information.

If you have any questions related to the experiment, please contact the principal investigator, Shu-Cheng Lin, at 0912-997-187 or email s0975835@gmail.com. This study has been approved by the Human Research Ethics Committee of National Cheng Kung University, authorized by Tainan University of Technology. If you wish to inquire about your rights as a participant or to file a complaint, please contact the committee at 06-275-7575 ext. 51020, or email em51020@email.ncku.edu.tw.

If you agree to participate in this experiment, please confirm the following items:

- I have understood the content of the research and the rights of participants.
- I am aware that if I do not wish to participate in the experiment, I can choose not to participate; and if I choose to withdraw during the course of the experiment, I do not need to provide any reason.
- If I have any questions related to participating in this experiment, I know the contact information of the research team.

If you withdraw from the experiment, how should the data collected from you be handled?

- Please delete it, do not include it in the subsequent data analysis of this experiment.
- No need to delete, it can be included in the subsequent data analysis of this experiment.

We would be pleased to provide you with a summary report when the research is published in the future.

- I am interested, please send it to (email or address): _____.
- No thank you.

Please choose how the data collected from your participation in the experiment should be used in the future:

- I do not agree to provide the data for other research purposes by the research team after this study concludes; please delete it.
- I agree to allow the research team to use the data in a way that does not identify me.
- My consent must be sought each time in the future when using the data.

※ If the research materials are used beyond the scope agreed upon in writing, the research team must submit a revised plan for the use to the National Cheng Kung University Human Research Ethics Committee for approval, inform accordingly, or re-obtain your consent when necessary.

Signature Area for Research Participants.

Your signature: _____ Contact phone: _____

Date: _____

Signature Area for Research Team.

- Our team has carefully explained to the research participants the purpose of this experiment, the process, potential benefits, possible risks or discomforts, compensation information, and the rights to terminate participation or withdraw at any time.
- This consent form is provided in duplicate, with each party retaining a copy for future reference.

Signature of Principal Investigator/Co-Investigator/Experiment Personnel: _____

Date: _____

