**UNIVERSITY OF HERTFORDSHIRE**

**ETHICS COMMITTEE FOR STUDIES INVOLVING THE USE OF HUMAN PARTICIPANTS**

**(‘ETHICS COMMITTEE’)**

**FORM EC6: PARTICIPANT INFORMATION SHEET**

1 **Title of study**

Physiological and Thermoregulation demands of Epée Fencing

2 **Introduction**

 You are being invited to take part in a study. Before you decide whether to do so, it is important that you understand the study that is being undertaken and what your involvement will include. Please take the time to read the following information carefully and discuss it with others if you wish. Do not hesitate to ask us anything that is not clear or for any further information you would like to help you make your decision. Please do take your time to decide whether or not you wish to take part. The University’s regulations governing the conduct of studies involving human participants can be accessed via this link:

<http://sitem.herts.ac.uk/secreg/upr/RE01.htm>

Thank you for reading this.

3 **What is the purpose of this study?**

 The aims of the study are:

1. To assess the physiological demands of fencing during a simulated competition environment where there will be a Poule round and Direct Elimination (styled as a Poule Unique).
2. To determine the thermoregulatory responses of fencing during a simulated competition environment where there will be a Poule round and Direct Elimination (styled as a Poule Unique).
3. The data will inform a potential intervention to assess if performance can be enhanced

4 **Do I have to take part?**

It is completely up to you whether or not you decide to take part in this study. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. Agreeing to join the study does not mean that you have to complete it. You are free to withdraw at any stage without giving a reason. A decision to withdraw at any time, or a decision not to take part at all, will not affect any treatment/care that you may receive (should this be relevant).

5 **Are there any age or other restrictions that may prevent me from participating?**

Participants aged below 18 or above 45.

Participants with known blood related disorders or previous adverse reactions to blood taking

Participants who have had previous gastrointestinal surgery, inflammatory gastrointestinal diseases, or cardiac pacemaker/other implanted electromedical device will be excluded.

Participants without sufficient experience in fencing (this will be determined during by discussion of training experience)

6 **How long will my part in the study take?**

If you decide to take part in this study, you will be involved in it for a pre-screening assessment and familiarisation of equipment (approximately 2 hours) and a simulated fencing competition (7-10 hours depending on bout time etc.)

7 **What will happen to me if I take part?**

The first thing to happen will be a pre-competition screening session whereby you will be required to:

- Fill in a health screen and consent form to take part in the study

- Be asked a few questions on history of fencing participation (e.g. training hours per week, years of practice, level)

- Body mass and stature will be recorded

- Body composition assessed by bioelectrical impedance

- Resting blood lactate and glucose measures will be taken from a capillary blood sample (10 micro litre sample) as well as to familiarise you with the sampling procedure

- You will be given an ingestible Core Temperature pill to swallow at least 2 hours before the testing takes place to allow for core temperature measurements to be made

You will then be invited to a simulated fencing competition whereby:

- Skin thermochrons (smaller than a 5p coin in diameter, that measures skin temperature) will be placed onto the skin on the following sites: forearm, biceps, chest, thigh and calf and within the fencing helmet

- You will also be fitted with a heart rate monitor and accelerometers to track your activity during the competition

- Body mass will be recorded at different points in the day to assess sweat rate

- Pre-exercise resting capillary blood samples. Capillary blood samples will also be collected throughout the day to assess blood lactate levels produced during bouts.

- Resting heart rate will be recorded

- You will complete a warm up consisting of light activity interspersed with high intensity movements similar to fencing bouts and dynamic stretches

- You will compete in 6-7 3-minute Poule bouts

- You will compete in 3x3 minute direct elimination bouts simulating progressing from last 128 to a final (in a Poule Unique format)

- Standardised cool down

- Fencers will consume water/sports drink throughout and own food throughout the day as if they were competing at a competition, this will be recorded on a simple questionnaire

- Heart rate, rating of perceived exertion, rating of thermal sensation, athletic movement data, skin temperature and core temperature will be recorded continuously throughout the day

- The bouts will also be videoed for later video analysis of performance

8 **What are the possible disadvantages, risks or side effects of taking part?**

Prior to undertaking the research you will have all procedures explained in full by the researcher and will have the ability to ask questions. The researcher has an undergraduate degree in Sport and Exercise Science and masters in Exercise Physiology and is a qualified first aider and is a current PhD student in the Sport Science Department. The researcher has experience working with elite athletes in various sports including swimming, netball, cricket, rugby, and wheelchair rugby, as well as working as a technical officer with the University of Hertfordshire. The university follows strict protocols of safe working that the researcher will adhere to. Participation in the exercise protocols may be physically demanding.

Anthropometric measures:

There is a minimal risk of foot infection and negative psychological feelings. The measurements will be made in private and the equipment will be disinfected before each use

Blood sampling:

There is a risk of infection with any blood sample being taken, to minimise this risk an experienced physiologist will take the sample, all materials will be sterile and single use, and the researcher will wear appropriate PPE. Some participants may find the blood sample being taken may be painful and result in a bruise. Participants may also feel unwell before or during the procedure. The researcher will be first aid qualified and trained to recognise signs and symptoms.

Please inform the researcher if you have had any adverse effects to giving blood or never had a sample taken before.

Please note: sample is a capillary sample from either the finger tip or ear lobe.

Core Temperature Pill:

There is a minimal risk of choking when taking the Core Temperature Pill, however each participant will be given instructions on how to take them with plenty of fluid. If you have had any previous history of gastrointestinal surgery or illness or issues with swallowing please let the researcher know.

Skin Temperature Sensors:

The skin temperature sensors will be attached by adhesive tape (used to tape athletes competing in sport). Please inform the researcher if you have any skin allergies or sensitive skin. Hypoallergenic tape will be available.

Exercise Testing:

The side effects of participating in exercise include the usual effects of participation in exercise such as: fatigue, injury, muscle soreness or strain. Maximal fencing bouts could lead to dizziness, vomiting, and collapsing or negative effects of exercise in the heat. However fencers should have experience in competing in fencing competitions and will meet the inclusion criteria. Some participants may find the portable gas analyser, temperature sensors and accelerometers uncomfortable to wear. You will be asked to complete a health screen to check for contraindications to exercise and you will be able to familiarise yourself to the equipment prior to taking part in the research. The researcher and other members of the data collection team will be first aid trained and present at all times.

Questionnaires for food records and training logs:

Competition of questionnaires could lead to negative feelings. The participants will complete these forms in private.

9 **What are the possible benefits of taking part?**

You will be able to gain data on physiological and thermoregulatory demands on your fencing performance in order to inform your training and performance on request. These include heart rate data, mean skin and core temperature, movement data, sweat rate data, and body composition data.

You will be taking part in novel research within fencing to understand the demands of the sport.

10 **How will my taking part in this study be kept confidential?**

Care will be taken with personal details and each participant will be given a unique identification code and all personal information will be stored using this code. Any personal data will be kept in a locked cabinet and in password-protected files on a password-protected computer or hard drive that is only accessible by the researcher.

11 **Audio-visual material**

 The fencing bouts will be videoed to be used for video analysis of performance at a later day after performance to determine movement patterns within the sport.

12 **What will happen to the data collected within this study?**

12.1 The data collected will be stored electronically, in a password-protected environment, until after the examination period, after which time it will be destroyed under secure conditions;

12.2 The data collected will be stored in hard copy by Luke Oates by the University of Hertfordshire in a locked cupboard for until after the examination period, after which time it will be destroyed under secure conditions;

12.3 The data will be anonymised prior to storage.

12.4 The data will be transmitted/displayed within future publications in academic journals, future ethically approved research studies and in the PhD thesis, however all identities will be removed.

13 **Will the data be required for use in further studies?**

13.2 You are consenting to the re-use or further analysis of the data collected in a future ethically-approved study; the data to be re-used will be anonymised and will only be used in studies undertaken within the University of Hertfordshire;

 The data collected will be stored electronically, in a password-protected environment, until after the examination period, after which time it will be destroyed under secure conditions;

 The data collected will be stored in hard copy by Luke Oates, by University of Hertfordshire in a locked cupboard until after the examination period, after which time it will be destroyed under secure conditions.

14 **Who has reviewed this study?**

This study has been reviewed by:

14.1 The University of Hertfordshire Health, Science, Engineering and Technology Ethics Committee with Delegated Authority

The UH protocol number is LMS/PGR/UH/02960

15 **Factors that might put others at risk**

Please note that if, during the study, any medical conditions or non-medical circumstances such as unlawful activity become apparent that might or had put others at risk, the University may refer the matter to the appropriate authorities.

16 **Who can I contact if I have any questions?**

If you would like further information or would like to discuss any details personally, please get in touch with me, in writing, or by email:

Luke Oates, C100 Main Building, College Lane Campus, University of Hertfordshire, Hatfield, Herts, AL10 9AB,

Email: l.oates@herts.ac.uk

**Although we hope it is not the case, if you have any complaints or concerns about any aspect of the way you have been approached or treated during the course of this study, please write to the University’s Secretary and Registrar.**

**Thank you very much for reading this information and giving consideration to taking part in this study.**