

UNIVERSITY OF LIMERICK EHS RESEARCH ETHICS COMMITTEE

PROCEDURES INVOLVING HUMAN SUBJECTS

Procedure No **SS 009**

Title of Procedure **Expired gas analysis (sub-maximal <80% maximal oxygen uptake)**

Name of Assessor **Alan Donnelly** Assessment date **November 2018**

Does this procedure already have ethical approval ? **YES**

If so, enter ethical number and expiry date **Approval No: SS009**  
**End Date: December 2028**

**1** **Please provide a brief description of the procedure**

This procedure involves collecting expired gases from healthy human volunteers at rest and during sub-maximal exercise. This is done using a sterile mouthpiece and nose clip or facemask, whereby the volunteer is able to inhale room air, but the exhaled gas is collected and either stored in Douglas bags or fed to an on-line gas analysis system.

Whichever method is used, the expired gas is sampled so that carbon dioxide and oxygen concentrations can be measured, and these together with the gas volume are used to calculate the participant's metabolic rate. This procedure can be undertaken in a number of different exercise modes, including cycling, running, rowing and tethered swimming.

If expired gas is being measured during a sub-maximal test, the experimenter will explain the graded test procedure to the participant prior to the test. The participant will perform an appropriate warm-up under the direction of the experimenter. During a sub-maximal test, exercise is performed on an ergometer, and exercise workloads are selected to gradually progress in increments. Depending on the exercise apparatus being used, resistance, speed, or elevation may change. The participant will be fully informed (prior to the test and during the test) as to how their effort should change during the sub-maximal exercise procedure.

**2** **Location in which the procedure may take place**

**PESS Teaching Facilities**

**PESS Research Facilities**

Others, please specify

**3****Eligibility of subject(s) to be used**

PESS student (U.G. or P.G.)

University staff or campus personnel

Others, please specify

Members of the general public engaged in research projects granted ethical approval.

**4****Potential risks. To be explained before obtaining consent**

None, or minimal (expired gas analysis at rest)

Low Risk (expired gas analysis and submaximal exercise)

Expired gas collection does not itself constitute any risk to the volunteer.

**5****Action to be taken in the event of a foreseeable emergency**

The procedure will be terminated if the volunteer shows any sign of distress.

Standard first aid procedures may be required depending on the severity of the situation. The following standard procedure should be followed in the event of an incident occurring in the PESS building.

1. Stop the procedure. Position the subject to prevent self-injury.
2. If appropriate, raise the subject's lower limbs to improve blood flow. Should the subject fail to respond summon help immediately.
3. Check vital signs airways, breathing and circulation (ABC)
4. If required attempt CPR as soon as possible.
5. Requesting Help: Emergency Contact telephone numbers are listed on laboratory door:
  - During normal working hours 9am-5pm, use lab phone to contact the Student Health Centre on **061-202534**
  - Outside of normal working hours, or if the Student Health Centre number is engaged/busy, use the laboratory phone to dial 3333 for UL security personnel who will then contact the ambulance service. Contact one of the PESS First Aiders – names are listed on the PESS laboratory door.
6. When contacting the above clearly state: Location, Building, Room Number, Nature of Incident/Accident and provide a contact number.
7. Complete the UL 'Accident & Emergency' form (completed by the investigator, not the volunteer). Forms available on UL HR website: <https://www.ul.ie/hr/hr-policies-procedures-and-forms-z>

**6****Level of supervision required for procedure**

PESS lecturing, research staff and teaching assistants

- PESS postgraduate researcher
- Others, please specify
- Trained UG (submaximal exercise only)
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**Other documentation required for this assessment ?**

- PESS standard pre-test questionnaire
- Detailed protocol
- Others, please specify
- Participant Information Sheet
- Participant Consent Form

For office use only

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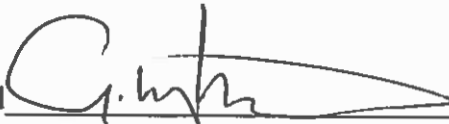
Title of Procedure

Name of Assessor

Assessment date

Others, please specify

Comments/conditions

Signed   

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(Head of Department)

Date 11/1/19