(1) Risk Assessment / Control Procedure

Group	**Faculty of Health Sciences and Sport**
Section/ Department	**Academic laboratory facilities**
Head of Department	**Professor Jayne Donaldson**
Department Safety Officer	**Dr. Iain Gallagher**
Completed by	**Dr. Stuart Galloway**
Date	**12th May 2015**

The Activity:

Activity	Exercise testing (dynamic and maximal)
Is any equipment used?	Yes, ergometry (cycle, rowing, treadmill) and dynamometry (Kin-Com). Ergometry may include use of expired gas analysis
Activity carried out by	Sports Studies academic staff in the Nutrition, Physical Activity and Health research group and Scottish Institute of Sport Physiologists
Location of the activity	Human Performance Laboratory
How long does the activity last	Various durations from 30-45 minutes for assessment of VO_{2max} to 60 minutes or more for assessment on the Kin-Com (these are total times of subject involvement not exercise times)
How often/ frequency	Frequency dependant upon nature of work. Research work could be daily, consultancy work could be monthly, teaching could be 3-4 times per year
Are there any specific legal compliance standards relevant to the activity	Probably only appropriate pre-participation screening (including resting blood pressure and heart rate, physical activity questionnaire, medical history questionnaire and age). Any inactive person, with a medical history of cardiovascular, respiratory, or metabolic diseases or muscle, bone or joint problems, aged under 18 or over 40 are not eligible to undertake assessment.

What hazards are involved?

What are the foreseeable hazards	Maximal testing carries a risk of collapse but this should not occur in individuals who are accustomed to hard physical effort and who routinely exercise.
What are the potential consequences of an incident	In the worst possible case death, but possibly injury if collapse occurs during exercise**.**

Who is at risk?

Number of employees at risk by the activity	Employees not at risk
Number of others at risk by the activity	Participant is at risk

What are the existing controls/ precautions?

Existing controls are related to pre-participation screening to identify risk category (as outlined above). In addition, following maximal effort exercise an appropriate period of active recovery is adhered to which ensures that collapse does not occur following a test due to venous pooling and hypotension.

What future controls/ precautions are required?

Future controls are probably not necessary as the pre-participation guidelines are the standard for any exercise assessments worldwide. To be 100% certain of no risk an exercise ECG and echocardiography should be performed prior to testing but this would be impractical in a non-clinical setting.

Activity risk assessment: **LOW** **MEDIUM** **HIGH**
(please circle)

continued

Activity/ Safe system of Work procedure:

Procedure:

Volunteer arrives and is given written and oral information about the nature and purpose of such a test. They then complete a physical activity and medical history questionnaire prior to assessment of resting blood pressure and heart rate. On completion of these procedures and if no adverse responses have been observed (see below) the volunteer is asked to sign an informed consent form agreeing to participate in such an activity and agreeing that they are free to withdraw from the procedures at any time without giving any reason for doing so.

The exercise test protocol is then carried out by a minimum of one support person however, for ergometry based testing this is a minimum of two support personnel.

Following completion of the exercise testing an active recovery period is performed by the volunteer to ensure adequate recovery from the exercise and to prevent venous pooling of blood in the periphery which may lead to hypotension and collapse (syncope).

Following the active recovery volunteers are generally provided with feedback on their test results and will remain in the laboratory for a further 5-10 minutes. At this point the volunteers are free to go as long as they do not complain of any adverse symptoms when asked if they feel light headed, faint or sick. In the event of them feeling an adverse symptom they will be placed in a supine position with feet elevated and blood pressure will be monitored at intervals for at least 5 minutes or until they feel that they have recovered.

Responses which would screen a person out of participating in this activity:

- <18 or >40 years of age and/or inactive (inactive defined as less than 3x30 minutes of exercise per week)
- Resting blood pressure >150/100 mmHg (even after two repeat measurements 5 minutes apart)
- Resting heart rate >100 beats per minute (even after repeat measurement following additional seated rest)
- History of cardiovascular, respiratory, metabolic or other disease (including muscle, bone or joint problems)
- Females if they indicate that they are pregnant
- If <18 parental consent is required before assessment takes place assuming that other screening criteria do not exclude the individual.
- If >40 guidance of medical practitioner is requested even in cases where other screening criteria do not exclude the individual.