

(3) Risk Assessment / Control Procedure

Group	Faculty of Health Sciences and Sport
Section/ Department	Academic laboratory facilities
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The Activity:

Activity	Exercise testing (static and maximal)
Is any equipment used?	Yes, dynamometry (Kin-Com or Globus strain gauge).
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 maximal force production at one joint angle to 60 minutes or more for assessment at a range of joint angles (these are total times of subject involvement not exercise times)
How often/ frequency	Frequency dependent 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	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 static testing carries a risk of injury and potentially dangerous elevations in blood pressure but these 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 injury which would temporarily prevent the participant from exercising or haemorrhage from blood vessel rupture due to elevated blood pressure.

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, appropriate warm-up prior to maximal effort, guidance on breathing during static contractions (during maximal static contractions the participants are encouraged to breathe out therefore minimising blood pressure elevation) and appropriate active recovery are all items that are adhered to during static testing.

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 low risk blood pressure monitoring throughout contractions could be performed but this would involve use of very expensive automated monitoring equipment and this would seem impractical in a non-clinical setting.
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Activity risk assessment:
(please circle)

LOW

MEDIUM

HIGH

*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.

An appropriate warm-up is provided followed by the exercise test protocol. A minimum of one support person is required but preferably two for maximal assessments of this nature.

Following completion of the exercise testing an active recovery period is performed by the volunteer to ensure adequate recovery from the exercise.

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.