

Risk assessment RA04

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Faculty / Service Area	Faculty of Health Sciences and Sport	Location	Sport Science laboratories, other
Description of work task / equipment /area being assessed			
Exercise testing (static and submaximal)			
Change log	Version 1.1 29 Aug 2022 New format Version 1.2 10 <sup>th</sup> July 2023 Referenced regulations and SOPs		
Head of faculty	Prof Jayne Donaldson	Safety officer	Dr Nidia Rodriguez Sanchez
Completed by	Dr Stuart Galloway	Date	12 <sup>th</sup> May 2015
Reviewed by	Dr Nidia Rodriguez Sanchez Chris Grigson	Date	10 <sup>th</sup> July 2023
		Date of next review	August 2024
Equipment used	Dynamometry (Kin-Com, Biodex, Tekai hand grip and Back & leg dynamometers).		
Categories of people involved	Staff, UG, PG, Visitors		
Duration of activity	Various durations from 30-45 minutes for assessment of submaximal force production and fatigue characteristics 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)	Frequency of activity	Frequency dependent upon nature of work. Research work could be daily, consultancy work could be weekly, teaching could be 3-4 times per year

Legal compliance to standards and regulations required	<p>Health and Safety at Work act 1974 (HASAWA) <a href="https://www.hse.gov.uk/legislation/hswa.htm">https://www.hse.gov.uk/legislation/hswa.htm</a></p> <p>Management of Health and Safety at Work Regulations 1999 (MHSWR) <a href="https://www.legislation.gov.uk/uksi/1999/3242/contents/made">https://www.legislation.gov.uk/uksi/1999/3242/contents/made</a></p> <p>Provision of Work Equipment Regulations 1998 (PUWER) <a href="https://www.hse.gov.uk/work-equipment-machinery/puwer.htm">https://www.hse.gov.uk/work-equipment-machinery/puwer.htm</a></p> <p>Manual Handling Operations Regulations 1992 (MHR) <a href="https://www.hse.gov.uk/pubns/priced/l23.pdf">https://www.hse.gov.uk/pubns/priced/l23.pdf</a></p>
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What are the hazards?	Hazard category	Who might be harmed and how?	What are you already doing to control the risks?	*Risk rating	What additional controls (if any) are required to reduce the risks?	*Risk rating	Action by who?	Action by when?	Date of completion
Rise in blood pressure		Participants  Blood pressure rises to dangerous levels	Pre-participation screening* (including resting blood pressure and heart rate  Physical activity questionnaire  Medical history questionnaire  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	Low					

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			<p>eligible to undertake assessment</p> <p>Appropriate warm-up</p> <p>Guidance on breathing. During static contractions participants are encouraged to breathe normally therefore minimising blood pressure elevation</p> <p>Appropriate active recovery</p> <p>SOP</p>						
<b>Improper use of exercise equipment leads to injury</b>	F4	<p>Participants and investigators</p> <p>Cuts, abrasions, muscle injury, and broken bones</p>	<p>SOP, equipment SOP, Instruction and familiarisation sessions ensure the participant knows the equipment and their surroundings.</p>	Low					

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			<p>Regular equipment maintenance and inspection.</p> <p>Participants never left alone during and for a period after testing. Investigator instructed to look out for signs of a feint.</p>						
<b>References</b>	<p>* Preparticipation medical evaluation for elite athletes  <a href="https://bmjopensem.bmj.com/content/bmjosem/7/4/e001178.full.pdf">https://bmjopensem.bmj.com/content/bmjosem/7/4/e001178.full.pdf</a></p> <p>Activity Risk Assessments                      Standard Operating Procedures  RA16 Dynamometers                              KinCom                              Biodex</p> <p>Laboratory Risk Assessments</p> RA80_TeachingLab_L19                              RA81_ResistanceLab_3B140                              RA82_PhysiologyLab_3B142 RA83_NeuromuscularLab_3B142D                              RA84_MultipurposeLab_3A72								

## Standard operating 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. Normally only one support person is required to undertake an assessment.

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.