

ROYAL HOLLOWAY, UNIVERSITY OF LONDON: GENERAL RISK ASSESSMENT FORM

Name of Person Undertaking Assessment		Date Conducted	Department / Area (including description of what is being assessed)					
Ari Lingeswaran		31/11/2022	MRI Unit - Dept of Psychology Magnetic Resonance Imaging Scanner used for research fMRI studies.					
Ref No	Hazard under review	No & Description of Staff/Students/ Others Involved	Existing Controls	Assessed Level of Risk*			Further Action Required	By (Date) + Review Date
				L	M	H		
MRI - 2	Gradient varying magnetic field	Appointed persons (2), researchers, staff, participants (1). During a scanning session the number of researchers and staff varies from 0 to 3	1) All persons enter the control area are screened. 2) During scanning only the participant is usually in the scanner room, in exceptional cases there may be one or two researchers in the room. 3) Participants are screened for diabetes, thermal regulatory problems, heart disease among many other conditions. 4) Participants are not scanned for more than 90 minutes in a 24 hour period to safeguard from exposure limits. 5) Participants are advised to keep their hands/arms and legs separate to reduce the probability of nerve or muscle stimulation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	None at present	Nov 2023
MRI -3	Radio frequency field	Participants (1 at a time)	1) The scanner console software has maximum allowable exposure limits set by the manufacturer and it is within the safety limits for the scanner sequences. 2) Maximum exposure within a 24 hours period is set as 90 minutes.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	None at present	Nov 2023

			<p>3) Participants are allowed to withdraw at anytime even after the scanning has started without giving a reason.</p> <p>4) Participants are given an alarm ball to hold at all times and they can squeeze the ball to ask to stop the scanner whenever they want to.</p>					
MRI -4	Acoustic noise	APs, participants, and researchers	<p>1) In the scanner room the noise level is around 99dB (when scanner is in operation) and all must wear hearing protection and ear plugs are given to them when taking part in scanning.</p> <p>2) In control room the noise level is about 55dB. Ear plugs are available should one wishes to use them.</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	None at present	Nov 2023
MRI -5	Lasers to localise the scanning area	Participants	<p>1) Participants are always asked to close their eyes during the presentation of this class II laser.</p> <p>2) Normally a mirror or another optical device will be in between the laser and their eyes protecting.</p> <p>3) The natural blink response protects from accidental exposure.</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	None at present	Nov 2023
MRI -6	Discomfort from being scanned	Participants	<p>1) Participant may withdraw froman experiment at any time without giving a reason.</p> <p>2) Alarm ball is given which could be used during scanning.</p> <p>3) Two way intercom system is used to communicate with participants in between scans.</p> <p>4) Participants are explained about the nature of the study that they are going to take part in and</p>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	None at present	Nov 2023

			allowed to ask questions and clarify their doubts. 5) Participants are screened for claustrophobia.					
MRI -7	Liquid Helium leakage during fill - very small amounts.	Service personnel, MRI Staff	1) Staff are trained in quench procedures. 2) During maintenance or Helium fill no one else is allowed in the controlled area. 3) Service personnel are in charge of the scanner during service periods.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	None at present	Nov 2023
MRI -8	Controlled / accidental Liquid Helium leakage - Quench : This procedure allows the LHe to escape and hence the magnetic field strength to drop rapidly in case of an emergency. This could cause asphyxiation from the reduction in Oxygen, cold burns, frostbite and hypothermia	APs, participants, and researchers	1) Quench will only be carried out if emergency services need access to the scanner room or the magnetic field causing a life threatening situation to a participant and will only be carried out by the MRI safety officer and by APs only if the MRSO is not available. 2) Oxygen level monitor is placed in the control room which will sound an alarm if the Oxygen level drops in the Scanner exams room. 3) Venting system: Quench pipe and a venting system are installed to take the He away to outside atmosphere. 4) APs are trained in quench procedures. 5) LHe is contained in sealed containers which have pressure valves, hence accidental leakage is extremely rare.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	None at present	Nov 2023
MRI -9	Use of peripheral equipment.	APs, participants, and researchers	1) All equipment must be tested for MRI safety and compatibility	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	None at present	Nov 2023

			with the QA sequences. Until the MRSO is satisfied the equipment cannot be used for testing participants.					
MRI -10	Spillages of phantoms: Phantoms are test objects filled with water/Bay oil/ and other chemicals used by APs to do QA etc. Phantoms are sealed so leaking under normal conditions are not an issue - accidental breakage of the bottles is a possibility. Refill is only be done by the MRSO or the manufacturers.	APs	1) MR phantoms can only be used by trained APs. Eating/drinking not allowed whilst working with phantoms. 2) Hands must be washed thoroughly with soap and water after the use. 3) Phantoms are stored on appropriate stands in the cupboard.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	None at present	Nov 2023

General Risk Assessment Form
R.H.F.

* The assessed level of risk will be Low, Medium or High. If in doubt use the criterion for establishing which is appropriate. You will find this in the College Document "Guide to Conducting General Risk Assessments", which is in the Health and Safety Guidance Manual. 16.1.03.