

LJMU Guidance on Coronavirus (Covid-19) Practices related to Research Activities

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# Purpose

The LJMU Incident Management Team (IMT) has determined that research activities involving participants (face-to-face/in-person or remote participation) can be undertaken if current Covid-19 practices are met and subject to certain conditions that are specified in detail in the Moving Forward Together website: <https://www.ljmu.ac.uk/microsites/moving-forward/on-campus/research>

This document provides guidance with respect to returning to, or starting new, research activities in particular in light of the current Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2; widely referred to as the Covid-19) pandemic. This guidance will evolve in light of available information and in response to the changing SARS-CoV-2 situation. The document includes specific guidance on practices and related issues to consider when completing an appropriate Covid-19 risk assessment for any research activity given the current conditions.

# Scope of Applicability

This guidance applies to all research activities conducted by all researchers (staff and students) working within the University estate, including those immediately affiliated with the University and those working within the University (e.g. staff affiliated with external organisations working on collaborative research projects). It applies to research work requiring physical contact or remaining physically in close proximity to participants (face-to-face/in-person research) or research conducted outside the University premises or externally through remote participation by posting and receiving objects or items to/from participants (e.g. paper questionnaires, printed letters and guides, monitoring devices etc. that must be decontaminated before sending out and upon receiving them).

# Context

SARS-CoV-2 is a strain of coronavirus responsible for the respiratory illness Coronavirus Disease 2019 (Covid-19). It is a positive-sense single-stranded RNA viral pathogen that is contagious in humans. Primary pathogen transmission occurs via respiratory droplets produced during breathing, coughing, sneezing and talking within a range of about 1.8 metres. A secondary transmission vector exists via indirect contact with contaminated surfaces. The basic reproduction number (R0) of the virus is estimated to be between 1.4 and 3.9 when no members of the community are immune and no preventive measures are taken. The result being an exponential rise in the number of infections within the affected population. Additionally, the dispersal range of virions and subsequent likelihood of transmission is heightened where any working practises result in aerosolisation of respiratory products (e.g. physical activity, exercise, prolonged talking face-to-face with a participant during interviews, etc). These aerosol generating procedures (AGPs) require more stringent risk control measures to be put in place.

The time from exposure to onset of symptoms is typically around five days, with a range from two to fourteen days. The majority of infected individuals will likely remain asymptomatic or experience mild symptoms, including fever, cough, fatigue, shortness of breath, and loss of smell and taste. Some infections progress to acute respiratory distress syndrome (ARDS) likely precipitated by a cytokine storm, multi-organ failure, septic shock, and blood clots that can all potentially lead to death. Often, though not always, these progressions are associated with other risk-factors such as age and underlying comorbidities. The severity of the symptoms and associated complications are also linked to the viral load received during exposure so it is essential to minimise the viral load received during any exposure.

Our obligation and intention is to ensure the restoration of the operational needs of the University and specifically research activities, whilst ensuring that our working processes and practises are safe and minimise the risk of infection and transmission of the virus.

All risk assessments are to be conducted in accordance with the [Health and Safety Code of Practice (SCP) SCP18](https://www.ljmu.ac.uk/staff/hsu/codes-of-practice-and-guidance-notes) - Risk Assessment. You should familiarise yourself with SCP18 before undertaking this assessment. It is also recommended that you familiarise yourself with [SCP2 – Evacuation Procedures](https://www.ljmu.ac.uk/staff/hsu/codes-of-practice-and-guidance-notes), [SCP37 - Assisted Emergency Evacuations](https://www.ljmu.ac.uk/staff/hsu/codes-of-practice-and-guidance-notes), and [SCP30 - First Aid](https://www.ljmu.ac.uk/staff/hsu/codes-of-practice-and-guidance-notes). All SCP documents identified here are available to staff from the [Policy Centre](https://policies.ljmu.ac.uk/UserHome/Policies/PolicyView.aspx?c=5) and Covid-19 specific risk assessment forms are available in the dedicated LJMU [Covid-19](https://www.ljmu.ac.uk/microsites/moving-forward/information-for-staff) [microsite](https://www.ljmu.ac.uk/microsites/moving-forward/on-campus/working/risk-assessment)[.](https://www.ljmu.ac.uk/microsites/moving-forward/information-for-staff) As per section 4.1 of SCP 18 – Risk Assessment, in every case the assessment of risk for any research activity is the responsibility of the person proposing, supervising or directing the research activity. This task (assessment of risk and production of the necessary risk assessment form for the research activity planned) may be delegated but the responsibility for ensuring that the risk assessment form is appropriate for the activity planned remains entirely with the supervising researcher or Principal Investigator. Proper implementation of any and all risk control measures specified in the risk assessment form is the responsibility of the supervising researcher and any person undertaking the activity specified within this risk assessment. All risk assessments for conducting LJMU research work during the Covid-19 pandemic must conform to the guidelines and practices outlined in this document and must be authorised by the School Director.

The reason for a risk assessment related to research activities specifically for Covid-19 is that the pandemic is a hazard that requires additional controls and changes in behaviour in all activities to reduce the risk of infections and ongoing transmission. The overarching hazard is the introduction of viral infection by a carrier (participant/visitor/researcher/staff) leading to other University premises users becoming infected (and subsequent transfer of infection onwards). Infection transmission is mainly by:

* Droplet transfer or inhalation when in close contact with an infected person or potential transfer through aerosol generation procedures (Airborne transmission)
* Touching the infected person or touching their infected secretions such as saliva and then touching eyes, nose, or mouth (Contact Transmission)
* Touching contaminated surfaces and then touching eyes, nose, or mouth (Fomite Transmission)

Although blood borne transmission remains uncertain and low viral loads in plasma and serum suggest that the risk of transmission through this route may be low, standard precautions apply when taking, handling and storing blood samples. The existing strategies for reducing the risk of other blood borne infections must be followed strictly and these should be adequate for preventing or minimising the risk of any blood borne infections.

Vulnerable and clinically extremely vulnerable groups are particularly at risk, due to weakened immune response.

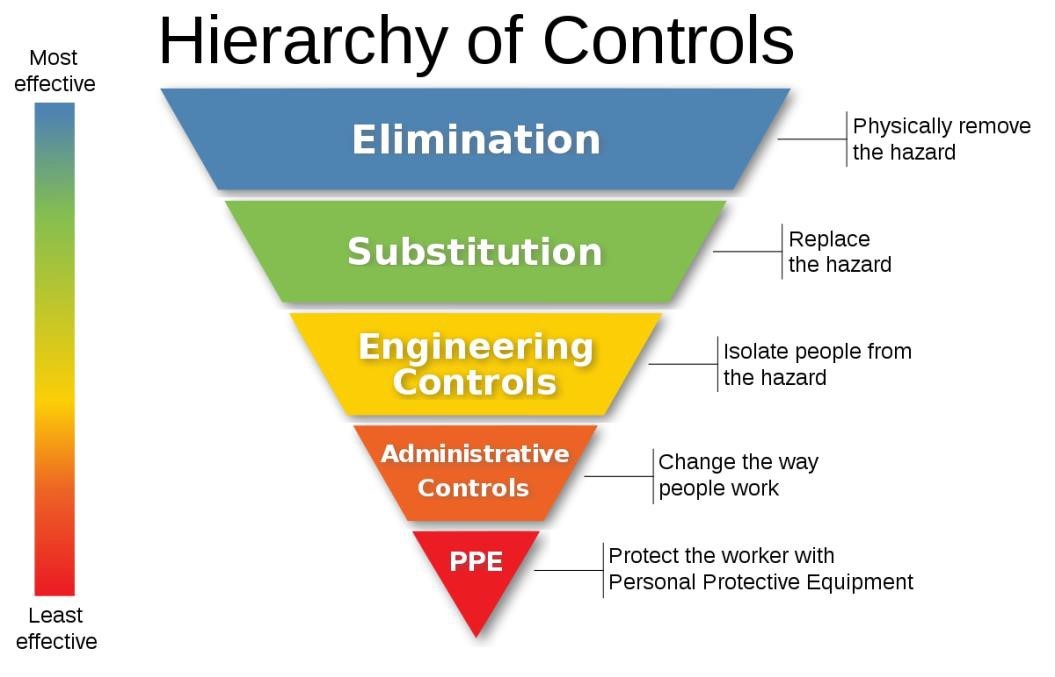
Covid-19 practices in research activities must include considerations of all those infection routes. Risk assessments and participant information documentation must document relevant and necessary mitigation measures to prevent transmission and minimise the risk of infection. It is not possible to list specific hazards & risk control measures in this document as these will depend on each research activity and procedure. Despite this all researchers must consider in detail what are the specific hazards emanating from the above viral transmission routes when applied to each specific experimental procedure and include appropriate control measures and actions. An example of a generic risk assessment for research activities related to Covid-19 risks is included below. This includes only the general risks related to the main viral transmission routes but it can be used as a basis for developing a complete Covid-19 specific risk assessment of a particular research activity for which ethical approval will be sought or for any approval to re-start previously ethically approved research projects. The risk assessment and any control measures and specific actions listed must include the person(s) responsible for the actions or prevention measures with consideration of the time and cost for applying these measures and actions. The [Covid-](https://www.ljmu.ac.uk/microsites/moving-forward/information-for-staff/risk-assessment)[19 risk assessment templates](https://www.ljmu.ac.uk/microsites/moving-forward/on-campus/working/risk-assessment)in the dedicated LJMU microsite can be used for developing a specific risk assessment for a particular research activity by following the guidance provided in this document.

Various Government departments and relevant professional organisations or scientific societies have provided specific guidelines and recommendations for returning to research activities and some of these are listed in the References section at the end of the document. Although these documents are generic, researchers are encouraged to consider the guidance and recommendations where relevant when completing their study-specific risk assessment before submission for ethical approval. This also applies any approval to re-start previously ethically approved research projects.

# General working principles

The University recognises that research work forms an essential part of its core operational needs. At this time it is also recognised that participation in research activities can heighten the risk of viral transmission. The University, therefore, has a responsibility to ensure appropriate measures are in place, above and beyond those typically practised to manage any additional level of risk. To this end, this guidance seeks to combine all relevant elements from both the ‘Working safely during COVID-19 in labs and research facilities’ and government guidance publications

Due to the heterogeneity of the work that can and does take place in individual research areas it is not always practicable to impose strict usage policies based solely on the research space itself. For that reason, careful consideration must always be taken before the (re)commencement of any research work in any area on the basis of dynamic risk assessment using the risk control hierarchy by NIOSH and the Scientific Advisory Group for Emergencies (SAGE) as shown in Figure 1.



**Figure 1.** Infographic by NIOSH on hierarchy of controls. Control methods at the top of graphic are potentially more effective and protective than those at the bottom. Following this hierarchy normally leads to the implementation of inherently safer systems, where the risk of illness or injury has been substantially reduced**.**

The University information includes a number of resources to help staff work safely and effectively during the coronavirus pandemic, <https://www.ljmu.ac.uk/microsites/moving-forward> and this includes documentation on guidance and principles for Covid-19 risk assessments. In the context of the transmission of SARS-CoV-2 and mitigating measures, some examples of general appropriate measures in the SAGE mitigation hierarchy included in the University documentation that might also be relevant for research work are listed in the Table below.

|  |  |
| --- | --- |
| Elimination | Prevent the presence of an infectious person in the environment Remove the use of a particular environment |
| Substitution | Reduction of time spent in an environment  Change work patterns to work in a cohort  Move to outdoor working  Changes to restrict “loud” activities (e.g. reduce talking time, no singing)  Technology to replace face-to-face interactions |
| Engineering Controls | Anti-microbial surfaces  No-touch technologies  Provision of new hand wash stations  Screens/partitions  Increased fresh air ventilation rate for poorly ventilated spaces  Change to room air distribution patterns  Application of room scale air cleaning/UV devices |
|  | Installation of local exhaust systems or local air cleaning devices  Propping open internal doors to enhance airflow  Personalised ventilation systems  Use of UV/HPV decontamination  Good maintenance of sanitation/drainage systems  Enhanced sunlight in buildings |
| Administrative Controls | Frequency of high touch surface cleaning  Frequency of general room surface cleaning  Provision of hand sanitiser  Replacement of jet dryers with paper towels  Avoid sharing equipment (e.g. IT, hot-desking)  Management of waste  Hygiene behaviours in bathrooms (e.g. put the toilet lid down before flushing)  Changes to touch behaviours (e.g. education programmes)  Lower density of occupants  Maintain 2m distancing  One-way systems for moving through spaces  Orientation of people |
| Personal protection (These are examples and are not listed as approved kit. Any PPE is dependent on specific  task risk assessment) | Respirator (N95/FFP3) face masks  Surgical face masks  Face coverings  Gloves  Protective clothing (personal protective equipment [PPE]) Face shields/goggles. |

The University [document](https://www.ljmu.ac.uk/~/media/files/ljmu/microsites/moving-forward/guidance-and-principles-for-covid-risk-assessment-v3.docx) on guidance and principles for Covid-19 risk assessments in <https://www.ljmu.ac.uk/microsites/moving-forward/on-campus/working/risk-assessment> includes specific examples of various situations and a selection of relevant mitigations dependent on the particular circumstances. A number of the situations listed are generic and are applicable to research work so researchers can consider using risk control measures that are suitable and effective.

# Risk Control Measures

Appropriate mitigation strategies are required to ensure that research work can be conducted as safely as possible by minimising the potential risk of viral transmission and infection as far as is reasonably practicable.

## Distancing

Along with sanitisation, measures to encourage distancing (social distancing) are central to the advice/recommendations intended to limit viral transmission.

## Screening

Pre-screening of individuals expected to participate in face-to-face research is a potentially effective risk control measure. However, in the absence of a confirmed positive COVID-19 test, this strategy is not definitive and the potential for asymptomatic (but infected) individuals to partake in such activities remains a possibility. Additional approaches are therefore needed which can include the availability and use of appropriate personal protective equipment and other infection protection measures.

## Zoning & Occupancy

The zoning of research spaces (laboratories, testing rooms, computer rooms, consultation rooms etc. or whatever spaces or rooms the research is taking place in) must be in place to facilitate social distancing consistent with current Government guidance. Visual (surface and floor) markings can provide additional cues and highlight the boundaries between static items of equipment, general areas of work and spaces of a more flexible use nature. Designating maximal occupancy capacities for research spaces and zones within research spaces aims to further enforce social distancing by limiting the number of individuals present in one area at any one time.

When identifying zones and occupancy capacity for individual research spaces consideration should be given to the variety of activities that typically take place in the space and the combined potential risk to those present at any given time. As such, a reduction in the number or area of zones and occupancy capacity of any research space would be an appropriate additional risk control strategy as a result of the nature of the activities taking place at the time. This reduction should be based predominantly on minimising the number of individuals in any designated space only to those that are needed for that particular activity (e.g. research study participants, principal and/or co-investigators, academic and support staff etc) to take place. Occupation of any predefined zones by individuals not needed for that particular activity is prohibited. When a group of participants is needed, segmentation into smaller cohorts may also be considered as a control measure to restrict the number of individuals in a particular space and thus minimise potential wider transmission.

## Sanitisation

Cleansing and sterilising is standard infection control practice; however, further precautions may be required to reduce the risk of transmission between participants and all other users of the research space, including fomite sources of contamination (surface and/or equipment). Research participants visiting the University premises for research must be escorted throughout their visit and their interaction with surfaces and any items that can potentially infect others must be minimised and/or disinfected immediately before and after use by the researcher. The use of items and objects that cannot be disinfected easily or properly after use (e.g. fabric chairs etc.) should not be used for the research project. In practice, this process will require designated reception spaces for participants with all surfaces and items used by the participant decontaminated immediately after use by the researcher(s). Although general cleaning and sanitisation of the University premises is conducted at regular intervals, the sanitisation and disinfection of all surfaces, items and objects used or contacted by research project participants immediately after the procedure is the responsibility of the researchers.

## Hand Hygiene

Good hand hygiene is essential for reducing the risk of viral transmission. Increasing the availability, awareness and diligence of laboratory users, researchers and participants with respect to hand washing and sanitisation is a key risk control measure adopted. In such spaces where hand washing facilities are available users are expected to engage in frequent hand washing/sanitisation. Additional signposting to correct hand washing/sanitisation technique is also made available within these spaces.

## Equipment

In research spaces where equipment is likely to be used by numerous individuals over a period of time, the potential for viral contamination and, therefore, transmission and subsequent infection is increased. It is neither efficient nor appropriate to quarantine equipment for a period of time greater in duration than the viability of the viral load. As such effective equipment sanitisation - like hand hygiene - is the risk control measure adopted. To this end, virucidal agents (e.g. 70% ethanol solution and Microsol) should be made readily available specifically for the research project within each research space and should be used by the researcher as appropriate to disinfect equipment and surfaces. Although cleaning and sanitation equipment and consumables are available in University buildings and these can be used by researchers and participants, it is the researcher’s responsibility to source and provide any additional sanitation and cleaning equipment and consumables that are necessary for the research project in the space where the research is taking place and this should be done in advance of participants visiting the University. Covid-19 related PPE can be ordered using the PPE online order form through the Estate and Facilities Management website via [this link.](https://www.ljmu.ac.uk/staff/estate-management/ppe-online-orders) Disinfection of equipment and surfaces by the researcher must happen before and after use by participants. Where the aforementioned virucidal agents are not recommended (or explicitly prohibited) by the equipment manufacturer a suitable alternative should be used and noted in the risk assessment.

## Environmental

Any individual being physically present in a research space or performing any physical activity within a laboratory or exercise/physical activity space has the potential to disperse a large volume of respiratory droplets into the atmosphere. Specific activities such as physical exertion or exercise of a vigorous intensity and/or of a protracted duration potentially compounds this risk further. As such environmental decontamination measures should be employed. Following research activity involving vigorous physical exertion within a laboratory space at least one hour is required before that laboratory space can be used again but the duration for adequate ventilation and fresh air input must be considered in relation to the type and intensity of the activity in the given research space.

## Personal Protective Equipment

It is recognised that the risk control measures described in previous sections will likely result in a reduction of risk for COVID-19 transmission but given the possibility of aerosol generating procedures, it is reasonable to assume that viral particles can remain suspended in the air for some time. Therefore, the likely dispersal range is beyond that which would typically be expected (2 m). Additionally, it is often common for individuals (e.g. research study participants, principal and/or coinvestigators, academic and support staff, and students involved in a research project) to be in relatively close proximity for the requirements of the research procedure. For these reasons appropriate PPE measures, in addition to those measures already outlined above, must be used by the researchers for all research work. If a researcher is exempt from using PPE or cannot use PPE for any reason then they should consider other means to ensure a safe procedure if contact or close proximity (< 2 m) to participants is required. The following items of PPE have been determined to be appropriate for different types of research work:

* Face Mask

Respiratory protection in the form of a well-fitting face mask with a minimum filtration specification of FFP2 (at least 94% filtration of airborne particles) assuming that this level of protection is suitable for the procedure and assessed risks. It is advisable to ensure a correct fit for any FFP respirator worn and if necessary to have a fit test performed by an Approved Person.

Non-valved respirators are preferable to valved respirators, however, where a valved respirator is chosen these should be further covered with a fluid-resistant (Type IIR) surgical mask.

Respirators are subject to single sessional use. A single session refers to a period of time within a single exposure environment and ends when the person leaves the exposure environment (i.e. laboratory). The duration of a single session will vary depending on the activity being undertaken. Dispose of respirators in the yellow clinical waste bins immediately prior to leaving the laboratory. If a clinical waste bin is not available then any items used must be disposed of hygienically and then taken to a yellow clinical waste bin and not in normal rubbish bins.

* Apron

Disposable polythene aprons are subject to single sessional use. A single session refers to a period of time within a single exposure environment and ends when the person leaves the exposure environment (i.e. laboratory). The duration of a single session will vary depending on the activity being undertaken. Dispose of aprons in the yellow clinical waste bins immediately prior to leaving the laboratory following each use with a single participant. Aprons and all other single use PPE items must be disposed of after a single use. If a protective item is multi-use (e.g. face shield) then it must be decontaminated after each use or each participant visit.

* Scrub Top

Scrub tops are subject to single sessional use. A single session refers to a period of time within a single exposure environment and ends when the person leaves the exposure environment (i.e. laboratory). The duration of a single session will vary depending on the activity being undertaken. Scrub tops are reusable but must be laundered in between uses. Place scrub tops in the red bin immediately prior to leaving the laboratory. NB: see Standard Operating Procedure (SOP) on the use of lab coats and scrub tops for further information.

* Visors/Face Shields/Goggles

Protection for the mucosal membranes and conjunctiva is required in the form of a well-fitting visor or goggles. Visors/Face Shields/Googles should be of medical grade materials, CE marked and fully certified as a minimum to BS EN166 Personal Eye Protection European Standard.

The following provides instructions for donning and doffing the PPE listed above and must be reviewed by each researcher required to use PPE. [PPE Training video.](https://www.youtube.com/watch?v=-GncQ_ed-9w&feature=youtu.be)

## Track & Trace

Researchers must keep a record of participants (including their contact details) and the people that came in contact with during their visit in all University premises in case of a subsequent infection and track and trace procedures. See further details here:

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\_data/file /910885/COVID-19\_Infection\_prevention\_and\_control\_guidance\_FINAL\_PDF\_20082020.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file%20/910885/COVID-19_Infection_prevention_and_control_guidance_FINAL_PDF_20082020.pdf)

## Risk Control Measures-General Considerations for All Research Activities

In practical terms, research involving physical presence of participants will require PPE worn by all researchers that will need to come in contact with or in close proximity (<2 m) with participants as described above. Researchers must have procedures in place to minimise physical contact or proximity of any volunteers, visitors and research participants with other people in the University and any physical items, surfaces etc. and restrict these contacts only to those absolutely necessary for the research protocol. External visitors for research purposes must be met as soon as they enter the University premises and escorted throughout their visit and have appropriate measures and procedures to minimise their contact and proximity to other researchers, students and staff. This will require, for example, specially allocated research spaces, rooms, chairs, containers for any participant items or possessions that need to be stored during their visit (e.g. clothes, keys, mobile phones and shoes), etc. Any item or surface that a participant comes in contact with must be considered infected and must be decontaminated by the researcher immediately after the visit. For remote participation research work (e.g. sending or receiving by post physical items to/from participants such as paper questionnaires, printed letters, accelerometers, monitors etc.) all physical items sent to and received from participants must be considered infected so they must be decontaminated both before sending out and upon received by the researcher.

An example of a generic risk assessment that is considering the main risks of transmission and relevant general measures is included below. This can be used as the basis for developing procedure-specific risk assessments for research work by following the guidance for Covid-19 practices related to research described in this document and the most up-to-date University guidance in the dedicated [Covid-](https://www.ljmu.ac.uk/microsites/moving-forward/information-for-staff)[19 microsite](https://www.ljmu.ac.uk/microsites/moving-forward)[.](https://www.ljmu.ac.uk/microsites/moving-forward/information-for-staff)

The process to be followed for any LJMU research activity during the Covid-19 pandemic is detailed here - <https://www.ljmu.ac.uk/microsites/moving-forward/on-campus/research>

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| **What are the hazards?** | **Who might be harmed and how?** | **What are you already doing to control the risks?** | **What further action(s) is needed to control the risks and who is responsible for carrying out the action?** |
| SARS-CoV-2  (Coronavirus,  COVID-19) –  Contact  Transmission | Who: Researchers and/or classroom/lab staff, participants, students, and by extension household members/social ‘bubble’ members of the above.    How: Direct, indirect, or close contact with infected people through infected secretions such as saliva and respiratory secretions or their respiratory droplets. | Participant Recruitment: Digital participant recruitment strategies such as online meetings and digital signing of documentation are encouraged. Where not appropriate social distancing (2 m) should be respected.    All external visitors to labs must complete a Previsit screening questionnaire (APPENDIX) prior to visiting campus. Preferably this should be completed on the day and before arrival on campus but no sooner than 24-hrs beforehand.    Campus Etiquette: All researchers, classroom/lab staff, and participants/students should be informed of the Covid-19 related measures, facilities available and what is expected of them while they are on campus, e.g. any access requirements such as signing in/out, hand sanitisation on building entry, use of face coverings and protective equipment where necessary (i.e. safety glasses/face shields, scrub tops, aprons), cleaning procedures, obey one-way systems for movement within buildings, social distancing.    Additionally, all visitors should be greeted outside of the building in the first instance if possible and then escorted directly to their destination | Avoidance of public transport where possible should be encouraged. Walking, cycling and running are potential alternatives.    Where not possible, avoiding peak times and abiding by all transport guidelines with respect to face coverings (where applicable and unless otherwise exempt) and seating (to maintain social distancing) is encouraged.    Additionally, carrying a personal supply of hand sanitizer is encouraged.    Both researchers and participants are responsible for these actions. |

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|  |  | efficiently and by minimising contact with any items or surfaces.    Segregation: All individuals on campus should be respectful of their peers/colleagues with respect to maintaining social distancing as much as possible.    Classroom/laboratory occupation should minimise the number of individuals using shared items of equipment (test one participant at a time) and minimise the size of the research teams/people to work within stated maximum occupancy figures and with full PPE. |  |
| SARS-CoV-2  (Coronavirus,  COVID-19) –  Airborne  Transmission | Who: Researchers and/or classroom/lab staff, participants/students, and by  extension household members/social ‘bubble’ members of the above.    How: Respiratory secretions or droplets expelled by infected individuals during aerosol generating procedures (AGPs) can contaminate the local airborne environment before settling on | Maintain social distance throughout the procedure and/or use appropriate protection as per University and Government recommendations.    For procedures requiring physical exertion or exercise activities, the [UK Government guidance,](https://www.gov.uk/guidance/working-safely-during-coronavirus-covid-19/providers-of-grassroots-sport-and-gym-leisure-facilities) for ventilation within laboratory spaces where exercise can take place must be verified to be compliant with the standard of 20 L·s·person-1 for the room capacities identified. | The assessment of risk of any single research procedure with a participant or researcher that might be infected must consider 1) the procedure itself; 2) the distance from the infection source; and 3) the duration of exposure. These will affect the likely viral load received that must be prevented or minimised.    Open spaces are associated with a reduced risk of infection, however the same recommendations (distancing, PPE, disinfection) apply.    Any physical exertion or exercise or even a prolonged conversation will increase the risk of |

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| **What are the hazards?** | **Who might be harmed and how?** | **What are you already doing to control the risks?** | **What further action(s) is needed to control the risks and who is responsible for carrying out the action?** |
|  | surfaces and objects, creating fomites (contaminated surfaces).    Airborne transmission of SARS-CoV2 can occur during AGPs that generate aerosols that remain infectious when suspended in air over long distances and time. |  | airborne transmission and infection beyond the typical 2 m of social distancing during quiet rest.    This risk is highest in front of the participant or researcher. Any other aerosol generating procedures such as spirometry or maximum exercise testing will increase the risk of spread. These type of activities generate droplets, and it is therefore important to decontaminate and disinfect any equipment used and the surrounding area.    The risks associated with these procedures can be mitigated by wearing appropriate eye protection and mask, remaining at least 2m away, and by disinfection of kit etc. between visits/tests or any other research procedures.    Researchers are responsible for these actions. |
| SARS-CoV-2  (Coronavirus,  COVID-19) –  Fomite  Transmission | Who: Researchers and/or classroom/lab staff, participants/students, and by  extension household members/social ‘bubble’ members of the above.    How: Respiratory secretions or droplets expelled by infected | Rigorous handwashing and/or use of alcohol gel should be enforced.    Hands that are sterile can pick up virus from the work surface, the mouth and can immediately be spread. Clean hands at every opportunity.    Wipe down all surfaces with virucidal solutions/alcohol wipes when used (e.g. handles | Consider using disposable equipment where possible. Dispose of appropriately.    Use appropriate filters as necessary on all equipment that carries a risk of cross infection.    Treat anything worn in the laboratory as “infected” and dispose of it carefully before washing hands. |

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| **What are the hazards?** | **Who might be harmed and how?** | **What are you already doing to control the risks?** | **What further action(s) is needed to control the risks and who is responsible for carrying out the action?** |
|  | individuals can contaminate the local airborne environment before settling on surfaces and objects, creating fomites (contaminated surfaces).    Viable SARS-CoV-2 virus  (Coronavirus, COVID-19) and/or RNA detected by RT-PCR can be found on those surfaces for periods ranging from hours to days, Therefore, transmission may occur indirectly through touching surfaces in the immediate environment or objects contaminated with virus from an infected person (e.g. pen, paper, stethoscope, thermometer etc), followed by touching the mouth, nose, or eyes. | on kit, keyboards) and fully clean all surfaces at the end of each testing session and day.    All equipment should be carefully reviewed to ensure that it can be thoroughly and comprehensively sterilised after use (e.g. check sample lines, turbines, internal gas pathways, Velcro straps etc. can be sterilised)    Decontamination: chlorine-based cleaning solutions have demonstrable ability to clear the virus from surfaces. Soap and water is also effective due to its action disrupting the lipid layer that encases the virus. Current WHO disinfection recommendations include the use of: 70 % Ethyl alcohol to disinfect reusable dedicated equipment (e.g., thermometers) between uses.    Sodium hypochlorite at 0.5 % (equivalent 5000 ppm) for disinfection of frequently touched surfaces in homes or healthcare facilities | Likewise, protective face shields should be cleaned (alcohol wipes or soap and water) on removal.    Researchers are responsible for these actions. |
| SARS-CoV-2  (Coronavirus,  COVID-19) –  Bloodborne | Who: Researchers and/or classroom/lab staff, participants/students, and by  extension household members/social ‘bubble’ members of the above. | When performing invasive procedures e.g. blood sampling, skin punch or muscle biopsy scrub top, goggles and protective gloves must be worn.    In essence all risk control measures for blood and tissue related core procedures (e.g. Blood Collection – Venepuncture, Blood Collection – Capillary, Blood Collection – Venous Cannulation, | Researchers are responsible for these standard blood and tissue related core procedures actions. |
| **What are the hazards?** | **Who might be harmed and how?** | **What are you already doing to control the risks?** | **What further action(s) is needed to control the risks and who is responsible for carrying out the action?** |
|  | How: The role of blood borne transmission remains uncertain; and low viral loads in plasma and serum suggest that the risk of transmission through this route may be low. | Biopsy – Skin Punch, Biopsy – Skeletal Muscle, Biopsy – Endothelia) should provide suitable protection. |  |

# References

(Some of these guidance, policy and strategy documents may be modified and updated during the pandemic so please use the latest version available)

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APPENDIX A – Pre-Visit Screening Questionnaire

