

COVID-19 Infection Control Measures in Occupational Health settings

This document provides evidence-based guidance from the HSE and NHS England for occupational health practitioners to undertake health surveillance during the current COVID-19 pandemic.

All client-facing clinicians face a heightened risk of exposure to COVID-19, in particular those who carry out aerosol generating procedures (AGP) and procedures that result in coughing or the production of sputum.

The following general principle applies when triaging any employees for face to face health surveillance:

- **Screen all patients for symptoms of COVID including fever, new cough, new anosmia (loss of smell) and/or new ageusia (loss of taste) – symptomatic patients should not attend health surveillance clinics.**

HSE GUIDANCE¹

The HSE stated on 3 September 2020¹ that health surveillance should continue as safely as possible and made the following recommendations:

Where health surveillance is performed using questionnaires, they can be administered remotely. For questionnaires requiring follow up, this can be by telephone, video or face to face. Where no issues are identified the full assessment can be deferred.

1. Control of Substances Hazardous to Health Regulations 2002 (COSHH)

For health surveillance under COSHH regulation 11 and medical surveillance under Schedule 6:

Spirometry and health/medical surveillance

If the local risk assessment does not permit it, these can be deferred for up to a maximum of 12 months (including any previous deferral periods)

- Spirometry** can be conducted after completing a suitable and sufficient risk assessment and putting in place appropriate controls. If previous lung function was abnormal or issues are identified on the respiratory health questionnaire, spirometry may be considered necessary
- Skin** – If appropriate, video consultation to check for signs of dermatitis

2. Control of Asbestos Regulations 2012

- For medical surveillance under CAR, appointed doctors can resume routine practice
- Where spirometry cannot be performed, the worker may be assessed remotely, in which case the certificate is valid for no more than one year

3. Ionising Radiation Regulations 2017

- Remote or face to face medical surveillance can resume

4. Control of Noise at Work Regulations 2005

- Audiology can be conducted after completing a suitable and sufficient risk assessment and putting in place appropriate controls including otoscopy

5. Safety-Critical Medicals

- Face to face consultations may resume. Spirometry advice provided in section 1

6. Control of Lead at Work Regulations 2002

- Medical Surveillance should continue with blood tests

7. Control of Vibration at Work Regulations 2005

- The usual tiered approach to health surveillance – to be carried out remotely

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INFECTIVITY²

When in contact with an infectious person at a distance of less than 2 metres with normal breathing:

- One sneeze from an infectious person may produce 40,000 droplets and one cough may produce 3,000 droplets. An Individual droplet can contain many viral particles
- It is increasingly recognised that even during normal breathing, an infected person will exhale small, respirable droplets, containing viral particles, that can persist in the air for several hours
- It is estimated that exposure to 1,000 infectious COVID-19 viral particles can result in infection
- This can occur in one inhalation with 1,000+ particles or rubbing the eyes.

AEROSOL GENERATING PROCEDURE (AGP)³

An Aerosol Generating Procedure (AGP) is a medical procedure that can result in the release of airborne particles (aerosols) from the respiratory tract when treating someone who is suspected or known to be suffering from an infectious agent transmitted wholly or partly by the airborne or droplet route.

Within the scope of occupational health, no procedures or tests are defined as AGP.

The following procedures are not considered AGP:

- Face to face consultations
- Audiology
- Phlebotomy
- Urinalysis
- Vision tests
- Blood pressure

Whilst the following procedures are not considered as AGP, it may be noted that current lack of evidence for transmission of COVID-19 is not equal to lack of risk. It can also be noted that the existing recommendations are for minimum standards.

Following risk assessment, practitioners may decide to don PPE at levels higher than the minimum recommendations for the following procedures:

- Lung function test (Spirometry)
- Peak Flow
- Undertaking a nose and throat swab – however, there is a high probability of inducing the gag reflex which may result in the emission of saliva
- Cardiopulmonary exercise test e.g. Chester step

In the case of Life support

- Manual Ventilation

Chest compression and defibrillation as part of resuscitation are not considered as AGP. A first responder can commence chest compressions without the need for PPE until additional clinicians arrive to undertake airways management. Doing CPR can elicit projectile saliva and coughing on resus, therefore protection should be considered.

PERSONAL PROTECTIVE EQUIPMENT (PPE)^{4,5}

Employers have duties concerning the provision and use of personal protective equipment (PPE) at work.

Recommended glove use

Gloves should be BS EN 455-1 2000 – medical gloves for single use compliant and will always have an expiry date of no more than 5 years.

Latex, Nitrile or Synthetic Gloves are widely used in laboratories and healthcare settings. They protect against:

- Bio-hazards
- Oils
- Solvents
- Grease
- Chemicals

Natural Latex / Rubber Gloves are no longer recommended for general use owing to allergy:

- Intended for incidental contact situations (little or no direct contact with the hazardous material)
- Suitable for biological hazards and water-based liquids

Recommendations for use of masks (respiratory protection)^{6,7}

Types of masks:

Filtering Face Piece (FFP) or respirator

- Designed to protect the wearer from exposure to droplets and fine particles
- Highest level of protection to the wearer
- Will only be effective if a good face-seal is achieved
- Branded and CE marked to EN149, specified as FFP3, FFP2, (and N95)

Surgical Mask

- Designed to protect others by reducing transmission of droplets by the wearer
- Fluid resistant version (Type IIR) will also provide protection to the wearer from droplets and liquid splashes

Face Covering

- Informal design, sometimes known as non-medical masks
- Intended to protect others by reducing transmission of droplets by the wearer
- May provide some limited protection to the wearer from droplets
- Self-made or commercial face covers made of cloth, other textiles or paper

Recommendations for use:*Filtering Face Piece (FFP) or respirator*

Recommended: additional protection in other occupational settings where risk assessment indicates that aerosol transmission is possible.

A face fit test must be undertaken to ascertain good seal between the wearer's face skin and mask.

Further fit tests will be required following a change in weight, facial moles or growths, dental/facial surgery.

The wearer must be clean-shaven.

With the seal remaining intact, they can be worn comfortably for at least an hour but are effective for longer unless compromised, e.g. splashed with body fluids, damp with respiration.

Surgical Mask

Required for all staff excluding those involved in AGP, (Type IIR) and for other health service workers and patients.

Can be worn comfortably for at least an hour but are effective for longer unless compromised, e.g. splashed with body fluids, damp with respiration.

Face Covering

- Not recommended for professional use
- Up to 60 minutes without a break

Recommendations for all masks:

- Cover both nose and mouth
- Not be allowed to dangle around the neck after or between each use
- Not be touched once put on
- Be changed when they become moist or damaged
- Be worn once and then discarded – hand hygiene must be performed after disposal

For more information about the purpose and type of facemasks see [this guide](#)⁸.

Recommended eye/face

A full-face visor is required as additional protection when undertaking AGPs when using a valved mask.

Recommended PPE usage and cleaning^{10,11}

Recommendations for PPE and cleaning are summarised in **Table 3 - Recommended PPE usage and cleaning**, however, given the uncertainty around respiratory functions tests, additional information regarding respiratory function testing has been quoted from the Association of Respiratory Technology and Physiology (ARTP), see **Table 2**.

Table 1 - Lifespan of coronavirus in different settings⁹

Viruses require a host to survive – as soon as the virus has left the host they become increasingly unstable.

Fomite	Estimated survival time
Droplets in the air: room temp 22°C, humidity 65%	30 minutes
Paper, tissue	3 hours
Wood, cloth	2 days
Glass, banknotes, stainless steel, plastic	4 days
The outer layer of the face mask	7 days

Table 2 - Approach to assessing risks of undertaking Respiratory Function Testing¹²

RISK			
	LOW	MODERATE	HIGH
Procedure	Low exhalatory flow on filter system (e.g. FeNO), gas transfer measurement	Spirometry (acute and community Trusts). Full respiratory function testing (mouth pressures, lung volumes, etc.)	Procedures with raised potential to induce coughing (e.g. bronchoprovocation testing), and those causing increased levels of patient ventilation (e.g. CPET)
Patient	Isolated ± COVID protected admission pathway	Pre-screened and COVID-19 point of care negative on the day prior to the procedure	Frequent sputum production, immunosuppressed Do not test if COVID-19 suspected or swab test positive
Plant	Negative pressure testing rooms. High rate of air changes in testing room(s) Use of HEPA air filtration Outside testing	Air changes per hour >6 but < 12 in testing rooms Still need regular cleaning and “fallow” periods.	Air changes per hour < 6 in testing rooms Mixed clinical traffic

Table 3 - Recommended PPE usage and cleaning

KEY:  Single use  Sessional use  Full face visor

RISK								
Setting	Context	Disposable Gloves (single use)	Disposable Plastic Apron	Disposable Fluid Repellent Gown	Fluid Repellent (type IIR) Mask	Fitted Filtering Facepiece Respirator (FFP3)	Eye/face protection	Cleaning
Contact precaution >2m								Routine Infection control
Droplet precaution <2m					 		 	Detergent disinfectant solution at a dilution of 1,000 ppm av – Not sprayed Double bag waste
Airborne precaution AGP							 	Detergent disinfectant solution at a dilution of 1,000 ppm av – Not sprayed Double bag waste
Any setting	Performing an aerosol generating procedure on an individual that is not currently a possible or confirmed case						 	Detergent disinfectant solution at a dilution of 1,000 ppm av – Not sprayed Double bag waste
Clinical settings <2m	Working in a communal area with possible / confirmed cases and unable to maintain 2 metres social distance							Routine Infection control
Clinical settings patient contact	Direct patient care – possible / confirmed cases (within 2 metres)				 		  	Detergent disinfectant solution at a dilution of 1,000 ppm av – Not sprayed Double bag waste
Any setting	Performing an aerosol generating procedure (AGP) on a possible / confirmed case							Routine Infection control

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Cardiopulmonary exercise testing	- Screen all patients for symptoms of COVID including fever, cough and anosmia – symptomatic patients should not be tested - Consider testing all patients for active COVID infection 24-48 hours prior to lung function tests – do not test COVID positive patients - Ventilation: In order for dissipation of aerosol generated particles, sufficient time should be given between patients to permit 6 complete air-changes. This will be dependent on the laboratory ventilation - Follow local infection prevention guidance							
Cardiopulmonary exercise test							 	Refer to ARTP in Table 2 Low risk – Wait 20 minutes after procedure has ended Clean area with 70% alcohol wipes
Lung function test	HSE guidelines 3 September 2020 state: 'Spirometry can be conducted after completing a suitable and sufficient risk assessment and putting in place appropriate controls'						 	Refer to ARTP in Table 2 for moderate to high-risk factors Low risk – Wait 20 minutes after procedure has ended Clean area with 70% alcohol wipes
Collection of nasopharyngeal swab Close face to face contact	There is a high probability of inducing the gag reflex which may result in the emission of saliva							Clean area with 70% alcohol wipes
Audiology Direct contact with ear and auroscope								Wait 20 minutes after procedure has ended Clean area with 70% alcohol wipes Clean cups and reaction button with 70% alcohol wipes Consider audio-cup covers
Phlebotomy Contact with body fluids								Clean area with 70% alcohol wipes

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Vaccination Skin contact								Clean area with 70% alcohol wipes
Urinalysis Contact with body fluids								Clean area with 70% alcohol wipes
Vision test chart Non-contact								Avoid patient contact with charts Lay out Ishihara book to avoid contact Do not use paddles to cover the eye
Vision test Keystones Contact with equipment								Clean area with 70% alcohol wipes
Blood pressure								Clean cuff with 70% alcohol wipes Consider disposable cuff or cuff covers
F2F care to vulnerable groups	Care to any individuals in the extremely vulnerable group undergoing shielding							Local infection control policy
Visiting an individual at home	Direct care to any member of the household where any member of the household is a possible/confirmed case				 		 	Local infection control policy
Visiting an individual at home	Direct care or visit to any individuals in the extremely vulnerable group or where a member of the household is within the extremely vulnerable group undergoing shielding							Local infection control policy

Use of PPE in Occupational Health: FAQs

Question	Response
What items of PPE do I need to consider?	Respirators / Surgical (face) mask / Face coverings / Gloves / Apron / Coverall All the PPE needs to be compatible with each other
What's the difference between a respirator, a surgical mask and a face covering?	Respirators are intended to protect the wearer but will also reduce spread from the wearer, other than when the respirator has an exhalation valve. Surgical masks and face coverings are intended to reduce the spread from the wearer, but will also provide some (limited) protection to the wearer. For more information see infographic (ref. 8 below)
When should I use a respirator?	Respirators should be used in aerosol generating procedures (AGP) including X,Y,Z and in any other circumstances where a risk assessment indicates the possibility of aerosol transmission. Respirators have to be face-fit tested. For more information see guidance (ref. 7 below)
Why do we need to face fit test?	Face fit testing ensures the respirator is fitting the wearer and therefore protecting them as it should. Without testing, there could be significant inward leakage around the seal to the face, putting the wearer at risk
What respirator should I buy?	FFP2 or FFP3 respirators that are fluid resistant or re-usable half masks with P3 filters. Loose-fitting positive pressure hoods can also be used as long as they are P3 filtered
What options are there for wearers with beards?	There must be no facial hair in the area where the tight-fitting respirator seals on to the face. Therefore wearers must be clean-shaven every day they use respirators and long hair must also be tied back out of the way. The alternative, if the wearer cannot be clean-shaven, is a loose-fitting hood that relies on positive pressure
When should I use a surgical (face) mask?	Surgical masks should be used at all other times when engaging with a patient. Current advice is that they should be used for a session. <i>Single use</i> refers to disposal after each patient following completion of a procedure or task. <i>Sessional use</i> refers to disposal following a period of time in a specific area, such as on a ward round or providing ongoing care for inpatients. Surgical masks may be worn for up to 8 hours, although generally require changing every 2-6 hours, if not damaged, soiled or uncomfortable
When should I use a face covering?	You should not wear face coverings. However your patient should wear a face covering at all times
When should I wear gloves?	Existing WHO ¹³ guidelines recommend that examination gloves are recommended for: - Direct patient care including contact with blood, mucous membranes, non-intact skin and potential presence of highly infectious disease, cleaning after spills of body fluids Previously gloves are not indicated for: - Direct patient care including taking blood pressure, temperature and pulse, performing SC and IM injections, ear care – however, in the potential presence of a highly infectious disease these activities will now fall into the category where glove use is recommended

Use of PPE in Occupational Health: FAQs

Question	Response
What types of gloves should I use?	Gloves should be approved to the standard - BS EN 455-1 2000 - medical gloves for single use. These gloves will always have an expiry date of no more than 5 years • Nitrile gloves offer good chemical resistance against certain chemicals compared to latex and vinyl gloves • Vinyl gloves are more suited for short-term, low risk tasks where cost is a factor • Latex gloves offer good protection in wide range of applications and have good resistance to many chemicals. However, Latex gloves are no longer generally recommended due to the risk of intolerance or allergy
When should I use an apron?	Single-use disposable plastic aprons should be worn during direct patient care within less than 2 metres, including phlebotomy and urinalysis
What about a visor; when should they be used?	Visors provide very limited protection to the wearer and do not prevent any transmission by the wearer. Visors should only be used in addition to a respirator or face covering
How often do I need to change my respirator or surgical mask?	Respirators or surgical mask should be used for a session, then disposed of
Can I reuse my respirator / surgical mask / face covering?	Most disposable respirators are only designed to be used once and thrown away (refer to manufacturer's guidance)
How often do I need to change my gloves?	Between patients

REFERENCES

1. <https://www.hse.gov.uk/coronavirus/health-surveillance.htm>
2. *It's not only about social distancing: the importance of airborne spread of Covid-19*, Dr Jonathan Fluxman, 15 Jun 2020
3. 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
4. World Health Organization. Rational use of personal protective equipment (PPE) for coronavirus disease (COVID-19). 2020. https://apps.who.int/iris/bitstream/handle/10665/331498/WHO-2019-nCoV-IPCPPE_use-2020.2-eng.pdf?sequence=1&isAllowed=y (accessed 12/08/2020).
5. Radonovich LJ Jr, Cheng J, Shenal BV, Hodgson M, Bender BS. *Respirator tolerance in health care workers*. Journal of the American Medical Association 2009; 301: 36–8.
6. *Personal protective equipment during the coronavirus disease (COVID) 2019 pandemic – a narrative review*, T. M. Cook. First published: 04 April 2020
<https://doi.org/10.1111/anae.15071>
<https://onlinelibrary.wiley.com/doi/full/10.1111/anae.15071>
7. 20 March 2020:
FAQs on using FFP 3 Respiratory Protective Equipment (RPE)
<https://www.england.nhs.uk/coronavirus/wp-content/uploads/sites/52/2020/03/faq-ffp3-24-march-2020.pdf>
8. <https://www.iom-world.org/media/1752/minimise-the-spread-of-covid-19-understanding-the-use-of-facecoverings-facemasks-and-respirators.jpg>
9. *Stability of SARS-CoV-2 in different environmental conditions* www.thelancet.com/microbe Vol 1 May 2020, Published Online April 2, 2020
[https://doi.org/10.1016/S2666-5247\(20\)30003-3](https://doi.org/10.1016/S2666-5247(20)30003-3)
10. <https://www.gov.uk/government/publications/wuhan-novel-coronavirus-infection-prevention-and-control#ppe-guidance-by-healthcare-context>
11. https://poetts.co.uk/downloads/COVID-19%20UPDATE_12_6_2020_poetts.pdf
12. https://www.artp.org.uk/write/MediaUploads/Standards/COVID19/ARTP_COVID-19_endemic_guidance_Vers_5.6_final.pdf 24.08.2020
13. https://www.who.int/gpsc/5may/Glove_Use_Information_Laeflet.pdf



Supporting occupational health
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