

# Respiratory Protection for Healthcare Professionals

## Frequently Asked Questions

### **What type of hazard are airborne micro-organisms?**

- Some micro-organisms are naturally infectious by the airborne route; other micro-organisms can be transferred through the air when attached to other particles, such as droplets of blood (hepatitis B) or mucous (influenza).
- When in the air, micro-organisms are considered a particulate hazard.
- This means that they can be efficiently filtered using a particulate respirator, such as a disposable respirator approved to EN149:2001+A1:2009 or a reusable half mask fitted with P3 filters.
- For more information, please see the Health and Safety Executive's Respiratory protective equipment at work, a practical guide, HSG53. Appendix 2: Special guidance relating to biological agents, is particularly relevant.

### **What is the difference between a disposable particulate respirator and a surgical mask?**

#### **Surgical masks;**

- Primary purpose is to prevent particles being expelled by the wearer into the environment.
- Are not Personal Protective Equipment (PPE).
- Are not necessarily designed to seal tightly to the face, therefore air leakage around the edges is likely.
- Some surgical masks are also designed to be fluid resistant to splash and splatter of blood and other infectious materials.
- Surgical masks do not require a fit test.

## **Disposable Particulate Respirators (Filtering Facepieces) approved to EN149:2001+A1:2009**

- Designed to reduce the wearer's exposure to airborne particles.
- Different classes offer different levels of protection. FFP3 disposable respirators offer the highest level of protection available from this type of device. When properly used by trained wearers they are expected to reduce exposure to particles by at least a factor of 20.
- FFP3 respirators are suggested for use against airborne viruses in occupational settings.
- Some respirators are designed to have the characteristics of both an approved respirator and a surgical mask.
- Respirators are Personal Protective Equipment (PPE).
- Disposable particulate respirators require a fit test.

### **Fit and Fit Testing**

- Disposable respirators are only effective when an adequate seal is established between the wearer's face and the product.
- Disposable respirators must only be used by clean shaven wearers.
- Occupational users should be fit tested in accordance with the requirements of the Control of Substances Hazardous to Health Regulations (COSHH).

### **What is the difference between FFP1, FFP2 and FFP3 respirators?**

- FFP1, FFP2 and FFP3 are different classes of respirator; they offer different levels of wearer protection.
- FFP3 offers the highest level of wearer protection.
- No respirator is 100% efficient, as there will be leakage around the face seal, around the valve (if applicable) and through filter penetration.
- FFP1 reduces the wearer's exposure to airborne particles by a factor of 4.
- FFP2 reduces the wearer's exposure to airborne particles by a factor of 10.
- FFP3 reduces the wearer's exposure to airborne particles by a factor of 20.

### **What is an N95 Respirator?**

- An N95 respirator is a class of respirator approved to an American standard, not a European standard.
- It is difficult to compare this type of respirator to European respirators approved to EN149:2001 as the test requirements are very different.
- In the UK, healthcare professionals have been advised by the Health Protection Agency<sup>1</sup>, Department of Health<sup>2</sup> and the Health and Safety Executive<sup>3</sup> to wear a respirator with the highest filtration efficiency available (FFP3 or P3) in the case of pandemic influenza.
- Likewise other occupational users have been advised by the Health and Safety Executive to wear a respirator with the highest filtration efficiency available (FFP3 or P3) for protection against biological agents.

### **Will a valved respirator help to protect me from airborne micro-organisms?**

- Both valved and unvalved disposable respirators are tested under the standard EN149:2001.
- A valved or unvalved respirator of the same class (EN 149:2001 FFP1, FFP2 or FFP3) will offer the same level of protection to the wearer.
- No respirator is 100% efficient, as there will be leakage around the face seal, around the valve (if applicable) and through filter penetration.
- A properly used FFP3 unvalved respirator will give an Assigned Protection Factor (APF) of 20, an FFP3 valved respirator will also give an Assigned Protection Factor (APF) of 20. Both will help to protect the wearer against airborne micro-organisms.
- Both valved and unvalved respirators are designed to help reduce the wearer's exposure to airborne particles.
- Some 3M unvalved respirators are tested and approved as both a respirator and a surgical mask, protecting both the wearer and the environment.
- Shrouded valved products which combine the benefits of both valved and unvalved respirators also exist.

### **Can a disposable respirator be reused?**

- Disposable respirators approved to EN149:2001+A1:2009 are marked either “R” or “NR”.
- Disposable respirators marked “NR” are designed to be used for a single shift only.
- Disposable respirators marked “R” are designed to be re-used for a limited period. These respirators, however, cannot be decontaminated and may present an infection risk in a healthcare setting – the reuse of a disposable respirator in a known or potential swine flu application/environment is not recommended.

### **Can viruses breed on respirator filter material?**

- Viruses cannot multiply outside of a living organism. Therefore, they cannot multiply on filter media or any surface of a respirator.
- Particles, including viruses, are collected on filter media. They are held there very strongly.
- For filtering facepiece respirators, the filter media is between layers of cover web and the user is not directly exposed to organisms trapped in the filter media. However, organisms contained in droplets may be on outside surfaces of the respirator.
- Respirator users should wash their hands before putting on a respirator and after taking one off.

### **References**

1. [http://www.hpa.org.uk/web/HPAwebFile/HPAweb\\_C/1238055328357](http://www.hpa.org.uk/web/HPAwebFile/HPAweb_C/1238055328357)
2. Department of Health, Health Protection Agency, “Guidance for Pandemic Influenza: Infection Control in Hospitals and Primary Care Settings” – October 2005.
3. HSE, HSG53 “Respiratory protective equipment at work, A practical guide”.