

Respiratory Protection

Why respiratory protection?

Respiratory protection prevents the inhalation of infectious agents such as viruses, bacteria and mould/fungi that can be spread through aerosols either droplet or airborne. Viruses or bacteria can be found in respiratory secretions of infected individuals, aerosolized during coughing, sneezing or through medical procedures such as suctioning or bronchoscopy.

Definitions:

Airborne transmission: Disease is spread by particles that are less than five microns in diameter and can remain suspended in the air for long periods of time

Droplet transmission: Disease is spread by particles that are greater than five microns in diameter and generally travel less than two meters in the air

Aerosol: Fine solid or liquid particles dispersed through the air

Respirator Classification:

There are two classifications of respirator types

Air purifying: Respirators that filter or purify the ambient air by forcing air through a medium (cartridge, filter or canister) that removes the hazardous agents:

Non-powered air purifying respirators: Rely on the breathing action of the user to pass air through the medium (e.g. N95 respirators)

(Users must note that surgical masks are NOT considered air purifying, as they do not provide a tight seal to prevent leaks!)

Powered air purifying respirators: Rely on battery operation powering a fan or a blower to pass air through the medium

Atmosphere supplying: Respirators that operate with their own supply of air: **Self-contained breathing apparatus (SCBA):** Where the user carries the air, usually in a compressed gas cylinder, on their back (e.g. scuba diving tanks) **Supplied air unit:** Provide breathing air through a line or hose from a compressor or a compressed gas cylinder

Respirator Selection:

- For many infectious agents, the identification of appropriate respirators has been done by experts such as Public Health Agency of Canada or the Centers for Disease Control and Prevention.
- N95 respirators are currently the standard for airborne infectious agents.
- Only respirators that are certified by NIOSH as N95 (or better) should be used for airborne infectious diseases.
- N95 respirators come in many different styles, including exhalation valves.
Note: N95s with exhalation valves cannot be worn in sterile environments like the operating room.

Respirator Use

Donning the Respirator



1. Don the respirator according to manufacturer guidelines

2. Adjust the straps to location on head that is indicated in the manufacturer guidelines



3. Tighten the nose clip by using index fingers of both hands

4. Perform positive/negative pressure seal checks



Positive pressure: Place both hands over the entire respirator.

Exhale slightly, if there is an appropriate seal the mask will bulge away from the face.

Negative pressure: Place both hands over the entire respirator. Inhale slightly, if there is an appropriate seal the mask will collapse towards the face.

Doffing the Respirator (after each use)

1. Grasp the lower strap and lift over your head without touching the respirator
2. Grasp the upper strap and lift over your head without touching the respirator
3. Discard the respirator in the appropriate receptacle
4. Wash or sanitize your hands after removal

Care and Storage of the Respirator

Storage: Store unused respirators outside contaminated areas

Care: Follow manufacturer guidelines for instruction on care

Inspection: Inspect respirators for tears or other discrepancies before and after each use

Maintenance: Maintenance, other than N95's, must be performed by qualified personnel according to manufacturers' guidelines; records must be kept



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