

# Respirator use & COVID-19

Contact Person:  
Jeanneth Manganyi  
Tel No: 011 712 6406  
JeannethM@nioh.ac.za

## Background

Health care workers (HCWs) and Emergency medical services (EMS) personnel are often at the frontline of interacting with persons that may be potentially infected, therefore their inhalation risk to the corona virus can be higher. The WHO has provided an interim guidance for respirator use, in which N95 or FFP2 respirators are recommended for use during aerosol generating procedures. Correct use of the respirator is critical to its effectiveness. This can be achieved through the implementation of an effective respiratory protection program (RPP). Such a program comprises a number of elements to ensure provision of a suitable respirator for each individual. These elements include policies, respirator selection, medical evaluation, training and **respirator fit testing**. In many parts of South Africa, there is little awareness and demand regarding different respirators sizes and shapes because of the perception of “one size does fit all” still exists which limits the use of appropriately sized respirators. This limit the achievement of the desired level of protection from the product supplied.

## What is respirator fit testing ?

- ❖ It tests whether a specific type, model and size of respirator can adequately fit a specific individual

## Why conduct fit testing ?

- ❖ To confirm if the respirator provides a satisfactory fit or barrier between the user and contaminated environment
- ❖ It allows for refresher training on correct donning of the respirator
- ❖ It also gives the employee confidence that they are protected by their supplied respirators



## When to do fit testing ?

- ❖ During the initial selection of a type and size of a respirator for new employees
- ❖ When a new hazard is introduced in the process and requires a different respirator type (as per outcome of risk assessment)
- ❖ After significant weight gain, major dental work or scars or moles around the face- seal area
- ❖ As part of refresher training e.g. annually

## Who can do fit testing ?

- ❖ A competent person with both knowledge and training

## Respirator fit test methods

It can be done qualitatively or quantitatively following a specific protocol for the selected method. Qualitative fit testing is currently preferred since it minimises the destruction of N95 respirator used in fit testing.



## Factors affecting respirator fit include :

- ❖ Facial hair and beards around seal areas (chin and cheeks)
- ❖ Incorrect donning of a respirator
- ❖ Multiple donning and doffing
- ❖ Incorrect respirator size or shape
- ❖ Facial deformities around seal areas
- ❖ Use of cosmetics and jewellery

## Respirator reuse

While respirator reuse may seem effective in prolonging supply of respirators, it may present a risk of contamination during doffing and storage. Moreover multiple donning and doffing has been found to reduce fit with repeated reuse. The Centre for Disease Control (CDC) currently recommends for extended use of respirators as part of optimizing the availability of PPE. However, it should be noted that discomfort may occur after four hours of extended use and should be avoided.

## Importance of respirator fit testing as part of an effective RPP

It is well-known that respirators do not accommodate all faces as there is variability in physical facial features of individuals and in respirators design. Therefore, it is important that the respirator-user match is checked to avoid unsatisfactory fit even though the user is wearing a respirator correctly selected for the hazard or purpose. A properly fitting respirator will reduce exposure to inhalation hazards in respirator users thus reducing the potential for infection.

## Updated by: Tebogo Maeteletja( March 2020)

1. World Health Organization. (2020). Rational use of personal protective equipment for coronavirus disease (COVID-19): interim guidance, 27 February 2020. World Health Organization. <https://apps.who.int/iris/handle/10665/331215>. License: CC BY-NC-SA 3.0 IGO (Accessed 5/03/2020)
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3. Centre for Disease control. (2018). Respirator Trusted-Source Information.//www.cdc.gov/niosh/npptl/topics/respirators/disp\_part/RespSource3fittest.html (Accessed 5/03/2020)
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