

Fit Testing N95 Respirators in Health Care Facilities

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Respirator Standard Requirement

- Fit test tight-fitting facepieces:
 - Make, model, and size that will be used
 - Prior to use
 - Annually
 - When change in make, model, or size
 - Change in physical characteristic affecting fit
 - Quantitative or Qualitative

Quantitative Fit Testing

- Measures the concentration of a contaminant in the air and inside the respirator face-piece.
- Uses the measurements to calculate a fit factor
- Objective but expensive.



Photo courtesy of TSI, Inc.

Approved Qualitative Fit Tests

- Bitrex®
- Saccharin
- Stannic chloride (irritant smoke)
- Isoamyl acetate (banana oil)
 - Not for use with N95

No Facial Hair

- Must make sure that there is nothing that interferes with the face to face-piece seal, such as facial hair or glasses.
- If so, you must not fit test.

NO EATING, DRINKING, OR SMOKING FOR PRIOR 15 MINUTES

- Eating, drinking, or smoking within 15 minutes of being fit tested can affect the test subject's ability to taste the test chemical.
- If they have just eaten lunch – WAIT!

Prepare Nebulizers

- Pour about 2 cc of sensitivity solution and fit test solution into corresponding nebulizers.
- Screw the tops on

Bitrex® Protocol

- Taste threshold screening
- Properly don a respirator you think fits
- Fit check (neg or pos pressure)
- Don test enclosure (hood)
- Expose to test aerosol

Taste threshold screening

- Don enclosure (hood) – no respirator
- Breathe through slightly open mouth, tongue extended
- Spray threshold check solution into hood
 - 10 squeezes up to 3 times
 - If tasted, threshold is 10, 20, or 30
 - If not tasted, do not use this protocol.

Selecting a Respirator

- There is no one-size-fits-all
- Employee must be allowed to choose from several brands and sizes
- Must be flexible about purchasing more than one model.

Test

- Properly don respirator and adjust for best seal
- Fit check
- Spray fit test solution into hood (same number of times as taste threshold – 10, 20, or 30)
- Perform test exercises
- Replenish with half the number of initial sprays every 30 seconds.

Test Exercises

- Normal breathing – 1 min
- Deep breathing – 1 min
- Head side to side – 1 min
- Head up and down – 1 min
- Talking (rainbow passage) – 1 min
- Bending over/Jogging – 1 min
- Normal breathing – 1 min

Time (Min:Sec)	Test Exercise	Nebulizer Squeezes
0:00	Normal Breathing	n squeezes
0:30		n/2 squeezes
1:00	Deep Breathing	n/2 squeezes
1:30		n/2 squeezes
2:00	Head Side to Side	n/2 squeezes
2:30		n/2 squeezes
3:00	Head Up and Down	n/2 squeezes
3:30		n/2 squeezes
4:00	Talking	n/2 squeezes
4:30		n/2 squeezes
5:00	Bending Over/Jogging	n/2 squeezes
5:30		n/2 squeezes
6:00	Normal Breathing	n/2 squeezes
6:30		n/2 squeezes
7:00	End Test	n/2 squeezes

Doffing the Respirator

- Think about where there is contamination
- Minimize cross-contamination
- Do not touch the outside of the filtering face-piece with hands

Test Results

- If subject tastes the Bitrex®, test has failed - try another respirator.
 - Must complete entire protocol, including taste threshold again.
- If subject does not taste Bitrex®, test is passed.

Recordkeeping

- Employer must keep a record of:
 - Name or ID of employee tested
 - Type of fit test performed
 - Specific make, model, size of respirator tested
 - Date of test
 - Pass/Fail result

Questions?

- Is there any part of the protocol you do not understand?
- Will you be able to go back and do this at your facility?