

Introduction to Respirator Use: Respirators are personal protective equipment worn by workers who may be exposed to airborne hazards in the workplace. Respirators protect workers against insufficient oxygen environments, harmful dusts, fogs, smokes, mists, gases, vapors and sprays. These hazards may cause cancer, lung impairment, diseases or death.

Respirators protect the user in two ways:

- 1. Removal of contaminants from the air. Respirators in this category include:** Particulate respirators, such as an N-95 mask which filter out airborne particles, and air-purifying respirators with cartridges/canisters which filter out chemicals and gases.
- 2. Other respirators protect by supplying clean air. Respirators in this category include:** Airline respirators, which use compressed air from a remote source, and self-contained breathing apparatus (SCBA) which have their own air supply.

Medical Evaluation of Respirator Users

Before respirator fit testing and wearing a respirator, a worker must be medically evaluated as per the OSHA Respiratory Protection standard using a mandatory medical questionnaire which must be reviewed by a physician or other licensed health care provider.

Respirator fit testing: OSHA requires that every worker who must wear a respirator with a tight-fitting face piece be fit tested to ensure the respirator fits properly. Workers must be fit tested with a specific respirator by: make, model, style and size. Employees must be fit tested before initial use and annually thereafter.

Respirator Fit Testing Method: Qualitative (QLFT) vs. Quantitative Fit Test (QNFT)

First Step – Workplace Exposure Evaluation: The type of respirator needed and type of fit testing required depends on workplace exposure data. In general, the more toxic airborne contaminants require a more efficient respirator for protection, and these respirators must be fit tested using the quantitative method.

Qualitative respirator fit testing: The qualitative method is the easiest and less costly of the two methods. It relies on a worker to tell the fit tester if he/she smells or tastes a challenge agent. The results are simply pass or fail. Since this testing method can only be used when exposures are less than 10 times the permissible exposure limit (PEL), only half-face air purifying respirators can be fit tested using this method.

Quantitative respirator fit testing: The quantitative method uses objective instrumentation to determine the effectiveness of fit. The number of particles of the challenge agent inside the respirator mask is compared to the number outside the mask and results in a numerical score of how well the respirator fits. This method can be used for both half-face and full-face respirators, but OSHA mandates that it be the only method for fit testing full face respirators, powered air purifying respirators and self-contained breathing apparatuses (SCBAs).

Summary: For respirators to work properly and protect the worker, the employee must be fit tested. A medical evaluation is required for all workers who use respirators. Baptist Occupational Health offers both qualitative and quantitative respirator fit testing including the mandatory medical questionnaire. For additional information on these services and the recommended level of testing for your employees, contact: Lee Irving, Program Developer for Baptist Occupational Health.