FIT-TESTING (N95 RESPIRATORS):

Definition: N95 is a NIOSH-certified, disposable, particulate filtering, half-face-piece respirator.

The major factor affecting the efficacy of a respirator in preventing inhalation of particles is the adequacy of the seal between the respirator and the user's face (the “fit”). N95 respirators vary substantially in the quality of fit that is provided to different facial structures. Adequate training of individuals in assessing the fit of the respirator each time it is used, and qualitative or quantitative fit-testing of individuals, has been shown to improve facial fit.

Why not use surgical masks for H1N1?

- Don’t provide respiratory tract protection.
- Overall effectiveness untested, as they are normally worn simultaneously with other control measures.
- They do not provide an effective seal to the face and their efficiency in blocking naso pharyngeal particles is unknown.

A Qualitative Fit Test Programme for N95 Respirators:

A qualitative fit test is a pass/fail test that relies on the employee’s response to a test agent. The OSHA protocols include saccharin, isoamyl acetate (banana oil), Bitrex and irritant smoke.

For a saccharin or Bitrex test, an administrator challenges a subject wearing a respirator with a test aerosol. The subject dons the respirator and a fit test hood. The test aerosol (saccharin or Bitrex) is sprayed inside the hood while the subject performs prescribed exercises. If the subject can taste the test agent, the respirator fails the test and another respirator must be tested. Prior to conducting the test, the administrator must determine if the subject can detect the test agent. If the subject can’t detect the test agent, another one that can be detected must be used. The fit test procedure requires about 15 to 20 minutes.

A quantitative fit test measures the adequacy of a respirator's fit by numerically measuring the amount of leakage into the respirator. The OSHA protocols include use of a PortaCount, CNC or CNP test.

The PortaCount works by measuring the concentration of microscopic dust particles in the ambient air and then measuring the concentration of those dust particles that leak into the respirator. The ratio of these two concentrations is called the fit factor. The filters stop essentially all the particles so anything that gets into the mask must have come through the face seal. A quantitative fit test is not affected by the person's sense of smell, taste or sensitivity to irritant chemicals.