

Factors Impacting Comfort and Tolerance to N95 Filtering Facepiece Respirators: Research Results From Project B.R.E.A.T.H.E.

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N95 filtering facepiece respirators are utilized by many healthcare workers on a routine basis, but complaints of discomfort are relatively common and may affect compliance. As part of Project B.R.E.A.T.H.E. (Better Respiratory Equipment utilizing Advanced Technologies for Healthcare Employees), the U.S. National Institute for Occupational Safety and Health undertook an extensive literature review of the topic and a series of human subject trials in an attempt to determine respirator features that impact comfort and tolerance to wearing N95 FFR. This effort included evaluations of N95 FFR effects on deadspace heat and humidity, core and dermal temperatures, filter resistance to airflow, impact of exhalation valves, physiologic burden, and subjective responses. This data has resulted in >20 publications in the literature and is important in order to determine methods to ameliorate discomforting effects to a level that is tolerable to the wearers, thus impacting compliance and enhancing protection.