

“No Fit Test” Respirator Research Workshop Goals

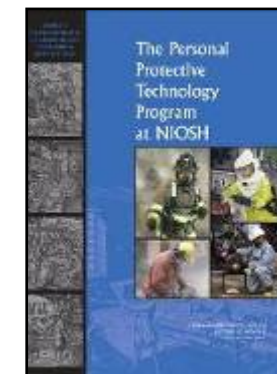
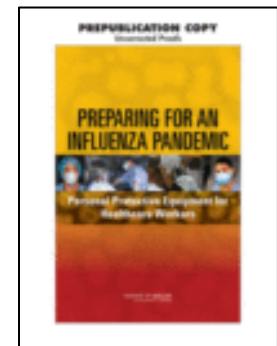
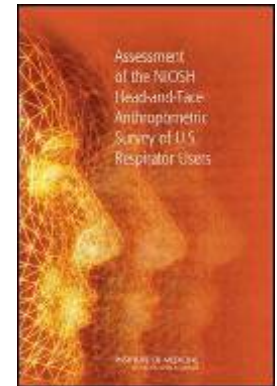
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“No Fit Test” Respirator Research Workshop
November 6th, 2008

Background

- ~ 3.3 million U.S. workers regularly use respirators as a condition of their work
- Respiratory protection is critically dependent upon the fit of the respirator to the user's face
- Respirator fit testing (initial, annual) required by OSHA is a contentious issue, especially in certain workplace sectors
- NIOSH has regulatory authority to certify respirators according to 42 CFR Part 84 and conducts an active research program
- Recent reports from the National Academies' Institute of Medicine (IOM) recommend – “short-term goal should be to develop respirators that would be easier to fit, while a longer-term goal should be to find a way to obviate the need for fit testing...”



Background

- **Complaints related to fit testing and concerns about poor fit are most commonly found in tight fitting half-mask air purifying respirators - filtering facepiece respirators (FFRs) and elastomeric**
- **Currently qualitative fit testing is part of NIOSH respirator certification for most half-mask respirators, but not FFRs**
 - New quantitative TIL test is going through the rule-making process
- **Fitting performance of FFRs can be highly variable**
 - Fit test passing rates for 25 subjects ranged from 0% to 88% for 18 FFR models (Coffey et al, JOEH, 2004)
 - 1843/1850 (99.6%) employees successfully fitted by one of two FFR brands available in two sizes (Lee et al, JOEH, 2004)
 - Fit test success rates of 95.1% (men) and 85.4% (women) for “first-choice” respirator model for 1271 health care workers (McMahon et al, AJIC, 2008)

Research Questions

- **What makes some respirators fit better than others?**
- **What role do new technologies play in improving half-mask respirator fit?**
 - Examples - shape memory polymers, sensors/indicators to determine whether the user has a good fit or not, adhesives, virtual face panels, etc.
- **Should research resources be directed towards a “no fit test” respirator and, if so, what are the short-term and long-term research gaps?**

Project History

- **NIOSH put a request for proposals “No Fit Test Respirator Workshop and Research Roadmap” out in November 2007**
- **Key tasks in the Statement of Work (SOW)**
 - Literature analysis / interviews with subject matter experts
 - Arrange / conduct a workshop
 - Produce a final technical report (potential risks/benefits and technology readiness levels, recommendations for future research)
- **U. of Minnesota (Prof. Lisa Brosseau, PI) was awarded the contract in March 2008.**
- **On track to deliver final report to NIOSH in March 2009**

Goals For This Workshop

- **Obtain and exchange information on technologies with potential for improving the fit of half-mask respirators & FFRs**
- **Identify concerns & barriers to commercializing novel concepts for better respirator fit**
- **Identify research gaps**

NIOSH Plans for Final report

- **Input to prioritize/revise the NIOSH PPT program research agenda**
 - Office of Extramural Programs (SBIR, university)
 - NIOSH intramural research
- **Input on NIOSH testing procedures and policies**
- **Influence other government agencies (DHS, DoD, FDA, CDC, etc.), academia, and respirator manufacturers to conduct research to address the identified priority research gaps**

Final Remarks

- **NIOSH fully supports current OSHA fit test requirements**
- **NIOSH recognizes that this is a complex topic**
- **The “No Fit Test” respirator workshop and research roadmap is a research activity**
 - Final report will impact short-term (< 5 years) and long-term (> 5 years) NIOSH PPT research plans
- **Workshop is designed to facilitate the exchange of information from diverse viewpoints and do not necessarily reflect the views of NIOSH**
- **Your input is needed**

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Disclaimer: The findings and conclusions in this presentation have not been formally disseminated by the National Institute for Occupational Safety and Health and should not be construed to represent any agency determination or policy.

Thank you

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