

The **National Personal Protective Technology Laboratory (NPPTL)** is a Division of the **National Institute for Occupational Safety and Health (NIOSH)**. NPPTL prevents work-related injury, illness, and death by advancing the state of knowledge and application of personal protective technologies (PPT). NPPTL supports more than 20 million U.S. workers who rely on this equipment (e.g., respirators, clothing, gowns, gloves, eye protection and other types of protective gear) to keep them safe from on-the-job hazards.



NPPTL conducts laboratory and field research, surveillance, standards development, interventions, and conformity assessment activities. This work includes

the respirator approval program and post-market evaluations to increase the compliant use of PPT and improve its usability and effectiveness. The division has the following goals:

- Develop and implement science-based national guidance for respiratory and other PPT.
- Develop new methods to test effectiveness of PPT for workers, including workers across industry sectors.
- Create guidance and tools to help employers and workers use PPT as effectively and economically as possible.
- Develop and evaluate innovative PPT designs and test methods to improve comfort, fit, and usability.

NPPTL is responsible for evaluating and approving respirator models to ensure the expected performance level of respirators used within U.S. workplace settings. NPPTL also conducts site and product audits to ensure respirators continue to meet standards after approval.



NPPTL also participates in international, federal, and consensus PPT standards development activities to facilitate translating research findings and sharing staff expertise.

Technology & Product Highlights

- NPPTL more than doubled respirator investigations and approval decisions in 2020 and achieved 730 respirator approval decisions in 2021.
- In 2021, NPPTL completed 412 quality assurance audits, providing confidence that respirators on the market continue to be effective for their intended purposes.
- NPPTL international respirator efficiency testing revealed that approximately 60% of more than 780 international respirators tested demonstrated less than expected filtration efficiency and should not be used as respirators in U.S. workplace settings.
- NPPTL provided the scientific basis for the Strategic National Stockpile's release of respirators and surgical gowns that were beyond manufacturer-designated shelf life, providing millions of respirators and gowns to healthcare workers during the COVID-19 pandemic.
- NIOSH shortened the timeline for its approval of new N95 respirators to support the national effort to increase supplies of PPE, addressing more than 1300 new approval applicant requests and responses from non-domestic requesters (up from approximately 10 annually) and 460 new approval applicant requests from domestic requesters (up from 3-5 annually) in the first year of the COVID-19 pandemic.
- NPPTL established guidance to identify the gowns and coveralls needed to protect users from harmful pathogens such as Ebola.



OUR SAFETY AND HEALTH RESEARCH AREAS



Personal Protective Technology



Post Market Assessment



Healthcare



Emergency Response



Public Safety



Mining

Programs

Respirator Approval Program

The NIOSH NPPTL Respirator Approval Program is responsible for the testing and approval of respirators used in occupational settings. To be approved, a respirator model must meet the minimum performance requirements defined in Title 42, Part 84 of the Code of Federal Regulations (42 CFR 84). This approval process ensures a minimum level of worker protection from airborne particulates, chemicals, and vapors. The approval process includes a laboratory evaluation of the respirator model, an evaluation of the manufacturer's quality control plan, and audit testing of certified respirators. To facilitate these activities, NPPTL uses Standard Test Procedures. www.cdc.gov/niosh/npptl/stps/respirator_testing.html



OUR STAFF

NPPTL has 103 full time positions and has offices and labs in Pittsburgh, Pennsylvania and Morgantown, West Virginia. Staff have experience in the following areas:

- Science:** Biology | Chemistry | Physiology | Ergonomics
- Engineering:** Mechanical | Electrical | Chemical | Biomedical
- Occupational Health:** Nurses | Physicians | Epidemiologists
- Health Communications:** Health Communication Specialists
- Quality Assurance:** Quality Assurance Specialists | Statisticians