



Respiratory Protection Program

Introduction and Purpose

It is the policy of Harvard University to eliminate potential inhalation exposures to hazardous materials whenever possible.

In cases where the elimination of an inhalation hazard isn't possible, appropriate engineering controls shall be used when available. Administrative controls such as work practice changes will also be implemented to the extent possible. Respirators shall be used as the principal means of control only in situations where hazard elimination, engineering controls, or administrative controls aren't feasible or effective.

The purpose of the Harvard University Respiratory Protection Program (RPP) is to meet the regulatory requirements of the Occupational Safety and Health Administration's (OSHA) Standard for Respiratory Protection [29 CFR 1910.134]. These requirements include medical evaluations, employee training, fit testing, and procedures for selection, use, and care of respirators.

Scope

The requirements of the RPP apply to Harvard personnel required to wear a respirator.

A respirator is considered required if either of these criteria:

- A hazard assessment indicates that there exists an inhalation hazard that requires respiratory protection.
- The employer requires the use of a respirator: A job description or a written standard or emergency operating procedure confirmed by a supervisor requires a respirator to be worn).

Any respirator use that doesn't meet either of these criteria is designated as voluntary use.

Voluntary use of any disposable N95 or other filtering facepiece respirator doesn't need to meet any requirements of the RPP. However, it is highly recommended that EHS reviews any use of a respirator.



Additionally, voluntary users of reusable elastomeric full-face or half-face respirators, powered air-purifying respirators (PAPR), or other reusable respirators must meet all these criteria:

- Reviewed by EHS.
- Meet program requirements for medical evaluations.
- Understand how to clean, store, and maintain the respirator to ensure it doesn't present a health hazard to the user.

The RPP also covers the emergency use of respirators.

The RPP doesn't apply to any contractors required to wear respirators as part of work performed on Harvard property on behalf of Harvard-sponsored projects. The contractor's employees shall be enrolled in the contractor's own written RPP following OSHA standard 29 CFR 1910.134 or other applicable state or federal regulations.

Responsibilities

Environmental Health and Safety

The EHS Lab Ventilation Program Manager, also known as the RPP Administrator, is responsible for both the daily administration and periodic evaluations of the RPP.

The RPP Administrator may delegate all or part of their responsibilities, which include:

- Prepare and manage necessary RPP program documentation, including the written program and associated procedures, forms, and training materials.
- Conduct a comprehensive review of the RPP at least annually to ensure program effectiveness.
- Inform supervisors, physicians, or other licensed healthcare providers (PLHCP), employees, and other affected personnel of any changes to the RPP.
- Conduct hazard assessments to determine:
 - Type of respirator required (if any).



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- Appropriate cartridges and canisters (where applicable).

Maintain any air-sampling results conducted as part of these assessments.

- Develop and provide required respiratory protection training and maintain all training records associated with the RPP.
- Provide annual fit testing to personnel required to wear any tight-fitting respirator (except PAPRs with loose-fitting hoods) using OSHA-accepted protocols.

Maintain all required fit test records for at least one year.

Maintain and manage all equipment associated with respiratory fit testing including instrument software.

- Provide a medical questionnaire form for use in medical evaluations of personnel required to wear a respirator.
- Confirm that any emergency response teams conduct monthly inspections on any self-contained breathing apparatus (SCBA) used by those teams.
- Review and approve any written emergency procedures involving respirator use by any Harvard emergency response personnel.
- Provide information using the Harvard Training Portal (HTP) about
 - Use and limitations of these respirators for all users:
 - Filtering-facepiece respirators, such as disposable N95 respirators.
 - Reusable respirators, such as half-face or full-face elastomeric respirators or PAPRs.
- Information in 29 CFR 1910.134 Appendix D for voluntary users.
- Make a copy of 29 CFR 1910.134 and the current version of the RPP available to the PLHCP.
- Review respirator usage on a continual basis to ensure respirators are necessary and suitable for the purpose intended.
- Provide additional technical support and regulatory guidance as required about respiratory protection to employees, researchers, students and supervisors, and managers.



Physician or Licensed Health Care Providers

- Conduct medical evaluations following 29CFR 1910.134(e) to determine the respirator user's fitness to wear a respirator.
- Provide a copy of the Health Care Provider's Recommendation (except the medical questionnaire and any other protected health information) to supervisors of the respiratory user, including any limitations and special requirements for additional medical evaluations.
- Maintain medical records associated with the evaluation, including the medical questionnaire and the results of any medical examinations and testing (if applicable).

Supervisors

Supervisors include lab managers, managers, and Principal Investigators.

- Ensure that any personnel who are required to wear a respirator or decide to voluntarily wear a reusable respirator are enrolled in the RPP and are meeting all applicable program requirements.
- Accurately complete request for medical evaluation section of the RPP medical evaluation form for employees.
- Inform EHS about any voluntary use of disposable filtering face piece respirators, such as N95 respirators.
- Provide appropriate respirators and medical evaluations to personnel required to wear a respirator at no cost to the user.
- Request assistance from EHS in evaluating new operations that may present health and safety hazards.
- Contact the EHS RPP Administrator or designee (Designated Safety Officer (DSO), Lab Safety Advisor, (LSA) or industrial hygienist) at least two months in advance to arrange for fit testing of large groups of respirator users.
- Ensure that the HTP training profile for personnel required to use respirators includes the requirement for respiratory protection training.
- Assist potential respirator users complete the medical evaluation form as needed, specifically section 1 (request for medical evaluation) and section 3.A.1 (type of respirator used).



Respirator Users

Meet all applicable RPP requirements.

Personnel who either are required to wear a respirator or voluntarily use a reusable respirator (except disposable N95 and similar respirators) must accurately complete the medical questionnaire section of the relevant respiratory protection medical evaluation form:

- [Respiratory Protection Medical Evaluation Form \(employees\).](#)
- [Respiratory Protection Medical Evaluation Form \(medical and dental school students\).](#)

Inform your supervisor of any:

- Change in materials, processes, or work environment that might affect the type or seriousness of potential inhalation hazards or any other aspect of respirator use.
- Symptoms or other indications that exposure to an inhalation hazard may be occurring, such as odors, tastes, or irritation.
- Conditions that may affect respirator fit, such as sudden weight-loss or gain, or extensive dental work.
- Intended voluntary use of a respirator.

Inform your supervisor, licensed physician or health care practitioner, or both of any personal health problems that could be aggravated by using respiratory equipment, such as shortness of breath, contact dermatitis, blocked nasal passages, or claustrophobia.

Prerequisites

You must successfully complete these prerequisites before using any required respirator:

- Respirator selection.
- Personnel training.
- Medical evaluations.
- Fit tests.



Respirator Selection

You must select respirators that are required for use based on either:

- A hazard assessment.
- A written standard operating procedure or job description based on a hazard assessment.

EHS is responsible for the final determination of what type or types of respirator or respirators are appropriate for the task or process evaluated, including appropriate cartridges where applicable.

These determinations may be based on either:

- Assessments conducted by EHS.
- A review of assessments conducted by other qualified personnel, such as Occupational Health Program staff or PLHCP.

Such assessments shall be based on:

- The hazard of the material and its physical state.
- The amount of material used.
- The likelihood of aerosolization or airborne dispersal.
- The environmental conditions.
- The status of engineering controls.
- Work practices.
- PLHCP recommendations.

Air-sampling may be conducted where required.

EHS shall inform the supervisor what the acceptable type or types of respirators are for each task or process.

Respirator requirements for any new or revised processes shall be determined based on an additional EHS assessment.

Only National Institute for Occupational Safety and Health-approved respirators shall be selected.



Voluntary use of an N95 or other disposable filtering face piece respirator doesn't require an EHS assessment. However, EHS must be informed of the intended use to provide the information in the OSHA Standard on Respiratory Protection, 29 CFR 1910.134, Appendix D to the user. This information is delivered by [HTP Respiratory Protection for Voluntary Users training](#).

EHS must review voluntary use of reusable respirators to ensure proper use and cartridge selection.

Training

All personnel required to use a respirator must successfully complete [Initial Respiratory Protection training](#) before using the respirator. The supervisor must assign the training on the respirator user's training profile in the HTP.

Users must complete [Respiratory Protection Refresher training](#) at least annually or where there are operational changes or poor compliance with the requirements of the RPP indicate the need for additional training.

The training includes:

- Prerequisites for using a respirator, including training, medical evaluations, and fit testing.
- Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator.
- Respirator limitations and capabilities.
- How to inspect, put on and remove, use, and check the seal of the respirator.
- Procedures for maintaining and storing the respirator.
- How to recognize medical signs and symptoms.

EHS is responsible for developing the training and facilitating the recordkeeping associated with the RPP.



Medical Evaluations

Personnel whose duties require using a respirator must complete and submit a Respiratory Medical Evaluation Form to a PLHCP such as Harvard Occupational Health Services (OHS).

This form includes a medical questionnaire and questions about the type of respirator and conditions of use. Accordingly, you must select the type of respirator before the medical evaluations. Examples of respirator types include filtering facepiece/N95, half-face air purifying respirator (APR), full-face APR, and PAPRs.

Supervisors must ensure that written physician approvals are received before an employee is scheduled for a respirator fit test.

On review of the medical questionnaire, the PLHCP may require a medical examination and/or pulmonary function or other test.

Supervisors and users are responsible for setting up any appointments required by the PLHCP.

On completion of the medical evaluation the PLHCP shall provide the respirator user and their supervisor with a copy of the Health Care Provider's Recommendation that will state if the person meets the physical qualifications to wear the type of respirator under the conditions described. In some cases the statement may include restrictions or conditions under which respirator use is required.

The PLHCP will determine the need and frequency of any additional medical evaluations. If any emergency response team members who begin to use any SCBAs will be medically evaluated annually.

Supervisors should inform the PLHCP of any changes to the process, environment, or other conditions of use. The respirator user should report to the PLHCP (or supervisor) any symptoms that may indicate a need for a medical evaluation.

The PLHCP retains medical records.

The Health Care Providers Recommendation must be made available to EHS before the initial fit testing.

Medical evaluations must be provided at no cost to the respirator user.



Those individuals who don't meet the physical qualifications can't wear a respirator. These individuals can't perform the specified task unless both:

- The inhalation hazard is eliminated by means of substitution or engineering controls, or the individual's health or work conditions change.
- The PLHCP provides written approval.

Respirator Fit Testing

Personnel required to wear any tight-fitting respirator must successfully complete a respiratory fit test both:

- Before initially using the respirator.
- Annually thereafter.

EHS provides respiratory fit testing for personnel required to use a respirator. Both quantitative and qualitative fit testing methods are used as determined appropriate by EHS.

Individual respirator users can schedule a fit test through their DSO, LSA, or industrial hygienist. Supervisors must contact the RPP Administrator or these EHS designees to arrange for fit testing of larger groups.

Before a fit test can be performed, these conditions must be met:

- The user or supervisor must present a training certificate or other verification of training completion to EHS before the test.
- The user or supervisor must provide a copy of the Physician's Statement to EHS before the test.
- The user must have no clothing or facial hair that may interfere with the respirator seal or valves (if present) at the time of the fit test.
- The user must demonstrate proper inspection, donning, fit checks, and doffing techniques for the particular respirator at the fit testing.

The supervisor or user is usually responsible for providing the respirator for fit testing.



Supervisors or users should contact EHS before purchasing reusable respirators. Fit testing this type of respirator requires special adapter kits provided by the manufacturer. EHS can make recommendations based on those respirators for which kits are available.

Various respirator manufacturers and sizes are available, so it's recommended that more than one respirator manufacturer and size be available if feasible. This helps prevent return visits if a specific respirator and size doesn't fit acceptably.

When a user successfully completes a fit test they may receive a Respirator Fit test Card which includes the test date, the manufacturer, respiratory type, model and size, if required by their department. EHS also retains electronic records of all individuals who have successfully completed a fit test.

Individuals who are unable to successfully complete a fit test of any tight-fitting respirator may use a loose-fitting (i.e., hooded or helmeted) PAPR, if it is determined by EHS that they provide adequate protection for the intended use, and the PLHCP has not restricted their use. These users may be provided with a PAPR card (if required by their department) stipulating that they must use a PAPR.

Respirator Use and Care

Respirator Use

Respirator users shall use the appropriate procedures for the type of respirator they're wearing as instructed in the respiratory protection training.

Respirator users should inspect their respirator before each use. If they use a SCBA, test the respirator's alarms before each use.

Respirator users should conduct a successful fit check of any tight-fitting respirator before each use.

Personnel required to wear a respirator shall only use respirators they've been fit tested for.

No modifications such as decorating or painting can be made to any respirator.



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If a respirator user experiences physical symptoms, such difficulty breathing, dizziness, or nausea, they shall immediately leave the potentially hazardous atmosphere and notify their supervisor.

Supervisors shall inform EHS of any changes in materials, process, or environmental conditions where respirators are required that could potentially increase either inhalation hazards or potential stresses associated with respirator use.

If glasses, goggles, a face shield, or a welding helmet must be worn with a respirator, it shall be worn in a manner that won't interfere with the face-to-facepiece seal. For example, respirator manufacturers specify corrective lens holders or inserts that fit within their various respirator models.

Disposable respirators shall not be shared.

Disposable respirators should not be used for more than one shift.

Cartridges shall be changed out:

- At the frequency established during the hazard assessment.
- When an end-of-service life indicator is activated.
- When chemical warning properties such as smell or taste indicate breakthrough.

In the absence of a specific change-out schedule, cartridges shall be changed at the end of each shift requiring respirator use.

Remove any damaged respirators from the work area and dispose or mark them as not for use or damaged.

Before using a SCBA for emergency response, written emergency procedures shall be submitted to EHS for review and approval. These procedures shall include procedures for the use, maintenance, and care of emergency respiratory equipment.

Entry into immediately dangerous to life or health (IDLH) or oxygen-deficient atmospheres isn't permitted for any Harvard personnel, including emergency response teams, unless written procedures are developed and reviewed and approved by EHS.



Respirator Maintenance and Storage

For required use, only respirators designated as reusable by the manufacturer shall be cleaned and stored after use. Disposable respirators should be disposed of at the end of each shift or after each use as deemed appropriate during the hazard assessment.

Reusable elastomeric, silicone, or rubber respirators shall be inspected after each use and cleaned as needed.

Shared respirators shall be inspected, cleaned, and sanitized after each use following manufacturer's instructions or RPP guidelines. Shared respirators should also be sanitized before each use.

Anyone cleaning or sanitizing a respirator must follow manufacturer's guidelines and ensure that any cleaners and sanitizers aren't expired and don't degrade respirator parts and materials.

Replacement parts shall be those specified by the manufacturer. Where required by the manufacturer, only certified individuals are to perform maintenance and repairs.

Cleaned respirators shall be stored in a clean, dry, and sanitary environment away from direct sunlight or heat sources, extreme cold, and damaging chemicals. The storage area shall be clean and sanitary.

When completely dry, store respirators in a closable container or bag to minimize contamination. Store respirators so that the facepiece, straps, and valves aren't distorted or damaged.

Monthly inspections of SCBAs for emergency use shall be documented as required.

If any SCBAs are used for emergency response, these specific respirators shall be recharged when the pressure falls to 90 percent of the manufacturer's recommended pressure level. Only certified Grade D breathing air shall be used to fill any SCBAs. Only cylinders with a current hydrostatic test date and no signs of damage shall be filled.

Program Evaluation

The RPP Administrator or designee will conduct evaluations of the RPP as needed. These evaluations shall address:



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- Employee training.
- Hazard assessment and respirator selection.
- Medical evaluations.
- Fit testing.
- Respiratory use, maintenance, and storage.

Evaluation methods include:

- Observing behavior associated with respirator use.
- Interviews with supervisors, respirator users, PLHCPs, or EHS staff.
- Reviewing records and program documentation.
- Targeted inspections and audits.

Any deficiencies noted during these evaluations shall be corrected by the responsible parties.

Any changes in the program will be communicated to affected employees.