

Northwestern
Respiratory Protection
Environmental Health and Safety

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I. Purpose

This program establishes procedures to reduce inhalation exposure to hazardous materials through the safe use and maintenance of respirators. Respirators will only be used in the absence of effective engineering controls or during emergency situations.

II. Scope

This program applies to the use of all respirators worn by designated Northwestern faculty, staff, and students (including voluntary users) who are approved to wear a respirator in non-research areas. Contact Research Safety for respiratory protection requirements in research areas.

Northwestern will provide medical evaluations, respirators, fit testing, and training at no cost to designated personnel. Northwestern prohibits the use of shared respirators; each employee must have their own respirator. This program does not apply to contractors, who should refer to their company's Respiratory Protection Program.

III. Responsibilities

A. Environmental Health and Safety (EHS)

- i. Adhere to the requirements of this program.
- ii. Review and revise this program, as necessary.
- iii. Conduct workplace evaluations, as necessary, to determine employees subject to this program.
- iv. Conduct a [hazard assessment](#) to identify and evaluate respiratory hazard(s) and where exposure cannot be identified or reasonably estimated, consider the atmosphere to be immediately dangerous to life and health (IDLH).
- v. Collaborate with departments to ensure applicable employees complete medical clearance questionnaires, obtain medical evaluations, and receive training and fit testing, as necessary.
- vi. Provide and/or facilitate respirator training and fit testing services, as necessary.
- vii. Provide respiratory protection recommendations to departments, including the [respirator type](#), [cartridge type](#), and change-out schedule based on hazard assessment, medical evaluation, and fit test.
- viii. Provide consultation and guidance when necessary.

B. Departments

- i. Adhere to the requirements of this program.
- ii. Responsible for the cost of medical clearance questionnaires, medical evaluations, respirators, filters, and cartridges.
- iii. Ensure employees who are required to wear respirators have received a medical evaluation, training, and annual fit testing prior to respirator use.
- iv. Ensure respiratory protection based on EHS's recommendations is provided, replace as needed, and supply replacement filters or cartridges.
- v. Ensure all provided filters and cartridges have the National Institute for Occupational Safety and Health (NIOSH) approval label, the label is not removed and remains legible, and the correct cartridge is used for each task.

- vi. Ensure employees are properly using, maintaining, and inspecting their respirators according to [Respirator Care and Use](#) guidelines, and remove respirators from service when any unsafe condition is identified.
 - vii. Contact EHS to evaluate any safety concerns or changes in workplace conditions or hazards.
- C. Employees**
- i. Adhere to the requirements of this program, the [Respirator Care and Use](#) guidelines, and all respirator manufacturer guidelines.
 - ii. Prior to wearing a respirator, if required:
 - a. Complete a medical clearance questionnaire and participate in a medical evaluation, as required;
 - b. Attend all required training and fit testing; and
 - c. Remove all facial hair that comes between the sealing surface of the facepiece and the face.
 - iii. Report all respirator maintenance issues to supervisors and remove the respirator from service.
 - iv. Do not enter potentially hazardous (e.g., IDLH) atmospheres without EHS evaluation and approval.

IV. Voluntary Use

- A. Employees may voluntarily wear a respirator during activities or while working in areas where EHS has determined that the potential does not exist for exposure to airborne contaminants above applicable regulatory limits.
- B. Prior to voluntary use of a respirator, employees must complete [online training](#) via myHR Learn, a medical clearance questionnaire, and a [Voluntary Use of a Respirator Request Form](#), which must be submitted to ehs@northwestern.edu for review and approval.
- C. Medical evaluations are not required for the voluntary use of filtering facepiece (e.g., N95) respirators.
- D. EHS voluntary use approval is valid for 3 years, or until the respirator medical clearance evaluation has expired at which point employees must complete a new [Voluntary Use of a Respirator Request Form](#) and submit it to ehs@northwestern.edu for review and approval.
- E. Fit testing is not required for the voluntary use of any type of respiratory protection.
- F. Voluntary use of self-contained breathing apparatuses (SCBAs), or emergency escape use respirators is not permitted.
- G. Departments are responsible for providing filtering facepiece respirators (e.g., N95s) for voluntary use.

V. Medical Evaluation and Clearance

- A. Medical Clearance Questionnaires**
- i. All respirator users except for voluntary users of filtering facepiece (e.g., N95) respirators must complete a confidential medical clearance questionnaire to determine the employee's ability to use a respirator before the employee is fit tested or required to use the respirator in the workplace.
 - ii. EHS will facilitate questionnaire completion with department supervisors.

- iii. Medical questionnaires will be provided in a manner that ensures the employee understands its content during the employee's normal working hours or at a time and place convenient to the employee.
- iv. Employees must provide the following information in the medical questionnaire:
 - a. The type of respirator to be used;
 - b. The duration and frequency of respirator use (including use for rescue and escape);
 - c. The expected physical work effort;
 - d. Additional protective clothing and equipment to be worn; and
 - e. Temperature and humidity extremes that may be encountered.

B. Medical Evaluations

- i. Medical clearance questionnaires will be reviewed by qualified physicians or other licensed health care professionals (PLHCP) to provide one or more of the following:
 - a. Clearance to wear a respirator.
 - b. A recommendation for any medical tests (e.g., pulmonary function test), consultations, and/or diagnostic procedures necessary to make a final medical clearance.
 - c. Any other recommendations (e.g., increased frequency of medical evaluations).
- ii. Medical tests, consultations, and/or diagnostic procedures performed by PLHCPs will be administered confidentially during the employee's normal working hours or at a time and place convenient to the employee.
 - a. Evanston Campus
NorthShore University Health Systems OMEGA, 2650 Ridge Avenue, Suite 4225, Evanston, IL 60201, 847-657-1700
 - b. Chicago Campus
Concentra, 614 W. Monroe Street, 312-258-0700
- iii. Additional medical evaluations may be required when:
 - a. An employee reports medical signs or symptoms that are related to the employee's ability to use a respirator (e.g., significant weight lost/gain, pregnancy, respiratory conditions);
 - b. A PLHCP, supervisor, or EHS determines the employee needs to be reevaluated;
 - c. Information from this program, including observations made during fit testing and program evaluation, indicate a need for reevaluation; or
 - d. A change occurs in workplace conditions (e.g., physical work effort, protective clothing, temperature) that may result in a substantial increase in the physiological burden placed on the employee.

C. Medical Clearance

- i. Based on the medical clearance questionnaire and medical evaluation findings, the PLHCP will provide a written recommendation to EHS regarding the employee's ability to use the respirator, including:
 - a. Any limitations on respirator use related to the medical condition of the employee, or relating to the workplace conditions in which the respirator will be used, including whether or not the employee is medically able to use the respirator;

- b. The need, if any, for follow-up medical evaluations; and
 - c. A statement that they have provided the user with a copy of their recommendation.
- ii. If desired, the employee will have the opportunity to discuss the medical evaluation results with the PLHCP.

D. Medical Evaluation and Clearance Frequency

- i. Unless otherwise required by this program or the PLHCP, medical evaluation and clearance frequencies must adhere to the table below, or more frequently if there is a change in health history.

Age	Light to Moderate Work	Strenuous Work with a SCBA
< 35 years	Every 3 years	Every 3 years
35-45 years	Every 2-3 years	Every 1-2 years
> 45 years	Every 2 years	Every year

- ii. When a discrepancy exists between frequencies, the more stringent frequency requirement will govern.

VI. Training

- A. All respirator users, whether voluntary or mandatory, must complete annual [online training](#) via myHR Learn.
- B. Employees who are required to wear a respirator must also be trained annually in-person, which is facilitated by EHS.
- C. Training must cover the following:
- i. Why respirators are necessary and how improper fit, usage, or maintenance can compromise the protective effect of respirators;
 - ii. What the limitations and capabilities of respirators are;
 - iii. How to use respirators in emergency situations, including situations in which respirators malfunction;
 - iv. How to inspect, don and doff, use, and check the seals of respirators;
 - v. Maintenance and storage procedures for respirators; and
 - vi. How to recognize medical signs and symptoms that may inhibit respirator effectiveness or require a medical evaluation prior to the next required one.
- D. Retraining must occur annually, and when the following situations occur:
- i. Changes in the workplace or type of respirator used;
 - ii. Inadequacies in the employee’s knowledge or use of the respirator; and
 - iii. Any situation in which retraining seems necessary to ensure safe respirator use.

VII. Fit Testing

- A. Employees who are required to wear a respirator must be fit tested annually in accordance with [29 CFR 1910.134 Appendix A](#), which is facilitated by EHS.
- B. A fit test is a test of the seal between the respirator’s facepiece and the user’s face to evaluate the fit of a respirator on an individual as shown below.

Fit Test Type	Method	Respirator Type

Qualitative: Pass/fail fit test to assess the adequacy of the respirator fit that relies on the user's response to the test agent	Irritant Smoke, Saccharin, Bitrex	Filtering Facepiece (i.e., N95)
Quantitative: Assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator	Controlled-negative pressure (CNP) or Condensation Nuclei Counting (CNC) method	Half-face, Full-face, SCBA

- C. Facial hair must not interfere with the respirator seal.
- D. Respirator users must be fit tested with the same make, model, style, and size of respirator that will be worn during work activities.
- E. Fit tests must be performed while wearing any applicable safety equipment that may be worn during actual respirator use that could interfere with the respirator fit.
- F. Personnel must conduct negative- and positive-pressure seal checks (see [Respirator Care and Use](#) guide) prior to a fit test and each time the respirator is donned; a user seal check is not a substitute for a fit test.
- G. Failure of either seal check is cause to readjust the respirator or select an alternate respirator that fits the user better.
- H. Respirator users must be fit tested when any of the following occur:
 - i. Prior to initial use of respirator;
 - ii. Annually;
 - iii. When a different respirator (e.g., size, style, model, or make) is used;
 - iv. When the respirator user's physical appearance (e.g., facial scarring, dental changes, cosmetic surgery, or a significant change in facial features) changes.

VIII. Emergency Planning and Pandemic Preparedness

- A. Supplies of NIOSH-approved filtering facepieces (e.g., N95) can become depleted during a pandemic or widespread respiratory pathogen or infectious disease outbreak. In the event of a situation like this, departments should refer to the emergency-specific university guidance regarding the appropriate use of personal protective equipment.
- B. When facing emergency-related constraints on the supply of N95 respirators, departments should consider a combination of approaches to conserve supplies of N95 respirators, including:
 - i. Minimize the number of individuals who need to use respiratory protection through the preferential use of engineering and administrative controls. EHS can provide guidance on alternative control methods to reduce the need for respiratory protection.
 - ii. Use alternatives to N95 respirators (e.g., other classes of filtering facepiece respirators, half-mask and full-facepiece air-purifying respirators, and powered air-purifying respirators) where feasible.
 - iii. Implement CDC-approved practices allowing extended use and/or limited reuse of N95 respirators. When working with highly toxic compounds where N95 respirators are required, N95 respirators must always remain single-use.
 - iv. Prioritize the use of N95 respirators for those personnel at the highest risk of contracting or experiencing complications of infection.

IX. Recordkeeping

- A. Medical clearances, training records, and fit testing records are maintained by EHS as follows:
 - i. Medical clearance records must be maintained for the length of employment, plus 30 years.
 - ii. Training and fit testing records will be maintained in the myHR Learn system or other means if necessary for at least 3 years.
- B. The following records must be maintained by departments, as applicable:
 - i. SCBAs must be inspected monthly using the [SCBA Maintenance Log](#) or equivalent means. Records must be maintained for at least 3 years.
 - ii. Departments are responsible for monthly emergency escape-only respirator inspections monthly using the [Emergency Escape-Use Breathing Apparatus Maintenance Log](#) or equivalent means. Records must be maintained for at least 3 years.

X. Regulatory Authority and Related Information

Northwestern will comply with Occupational Safety and Health Administration's (OSHA) standards and any other applicable codes and standards, including:

[OSHA 29 CFR Part 1910.134 – Respiratory Protection](#)

[Respirator Selection Guide](#)

[Cartridge Selection Guide](#)

[Respirator Care and Use](#)

[SCBA Maintenance Log](#)

[Emergency Escape-Use Breathing Apparatus Maintenance Log](#)

[Voluntary Use of a Respirator Request Form](#)

XI. Contact

For questions, contact Environmental Health and Safety at ehs@northwestern.edu in non-research areas and Research Safety at researchsafety@northwestern.edu in research areas.