RESPIRATORY PROTECTION AWARENESS

Standard of reference CAN/CSA Z94.4-2011 Selection, use, and care of respirators.

GUIDELINE

This RPA guideline applies to all University staff, students including non-McGill personnel who require respiratory protection while performing campus activities connected to McGill University.

Elimination or reduction of respiratory hazards through substitution or engineering controls is preferred. However, there may be instances in which the use of appropriate respiratory protection is required.

OBJECTIVES & APPLICATION

To ensure the proper protection of employees and students from chemical contaminants and bioaerosols, the RPA guideline will address the following themes:

1) ROLES AND RESPONSIBILITIES;
2) RESPIRATORY HAZARDS ASSESSMENT;
3) SELECTION OF RESPIRATORS;
4) MEDICAL SURVEILLANCE OF RESPIRATORY USERS;
5) TRAINING;
6) FIT TESTING;
7) USAGE;
8) INSPECTION, CLEANING, MAINTENANCE AND STORAGE;
9) PERIODIC EVALUATION OF THE RPAP;
10) RECORDS AND DOCUMENTATION.

1) ROLES AND RESPONSIBILITIES

EHS shall:

- Implement and administer the program;
- Provide technical advice and recommendations regarding assessments for respiratory hazards and respirator selection;
- Assist in determining the type of respiratory protection required for the specific respiratory hazard(s) and work activities;
- Manage the medical screening process;
- Provide training and education, fit testing and evaluation of the RPAP effectiveness;
- Update the program to maintain consistency with regulatory criteria and consensus standards;
- Create and maintain training and fit testing records.

MCGILL & NON-MCGILL PRINCIPAL INVESTIGATORS/FACULTY/SUPERVISORS

Shall:

- Monitor respirator use in relation to airborne conditions;
- Identify situations where respirators may be required;
- In consultation with the EHS, assess respiratory hazards and determine the type of respiratory protection required for the specific respiratory hazard;
- Provide individuals with appropriate respiratory protection;
- Monitor respirator usage for the work activities requiring respirators;
- Ensure that general medical screening, training and fit testing of people is completed prior to assigning employees a task that requires a respirator;
- Ensure that employees use the respirators provided to them in accordance with the instructions and training received including care, use, inspection, cleaning, maintenance, storage of respirators;
- Manage any interference concerns in regards to the seal or function of the respirator;

- Notify EHS of concerns from the users, changes in processes, equipment, or operating procedures that may have an impact on environmental conditions and protection requirements;
- Cover respiratory training, fit testing costs and respirator acquisition.

RESPIRATOR USERS
Shall:

- Use and care the respirator;
- Complete the medical surveillance form, for respiratory protection;
- Wear appropriate respiratory protection at all times when performing tasks (work activities) or working in an area where respiratory hazards exist;
- Inspect the respirator prior to each use and monthly in accordance with the training received and the manufacturer's instructions;
- Clean, maintain and store the respirator in accordance with the training received and the manufacturer's instructions;
- Perform negative and positive pressure check after each donning of a tight-fitting respirator;
- Report any damage or malfunction of the respirator to their supervisor (if applicable);
- Report to their supervisor or EHS any condition or change that may impact on their ability to use a respirator safely;
- Be clean shaven and ensure that no object or material interferes with the seal or operation of the respirator.

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2) RESPIRATORY HAZARDS ASSESSMENT
Identification and evaluation of chemical contaminants and bioaerosols.

Elimination or reduction of respiratory hazards through engineering controls or substitution is the preferred method of hazard control. Whereas the use of a personal respirator should be considered the last option for mitigating potential exposures.

EHS will identify and evaluate exposures to air contaminants in the work environment.
A hazard assessment of the work area/work situation is required to determine whether a respiratory hazard exists.

Requests for airborne contaminant evaluations must be submitted to EHS by the Principal Investigator/Faculty/Supervisor.

See the 1) RESPIRATORY HAZARD ASSESSMENT FORM for chemical workplace contaminants).
See the 2) RESPIRATORY HAZARD ASSESSMENT FORM for bioaerosol workplace contaminants).

Collaboration from key stakeholders will be requested for their participation in this process.

The hazard assessment will assist in the appropriate respirator selection.

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3) SELECTION OF RESPIRATORS

Selection of appropriate respirator, cartridge(s) and or filter(s) can only be achieved following the completion of a detailed hazard assessment. This process will be done by EHS.

TYPE OF RESPIRATORS

Air-purifying

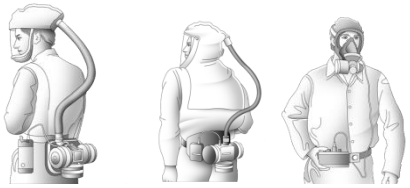
Ambient air, prior to being inhaled, is passed through a filter, cartridge, or canister that removes particles, vapours, gases, or a combination of these contaminants.

Air-purifying respirators are available in two modes of operation:

-Non-powered, for examples,
(a) Disposable half, (b) elastomeric half and (c) full face pieces;

(a) (b) (c)

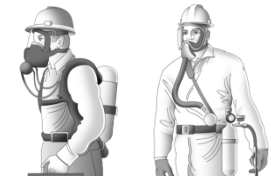
-Powered air purifying respirators that incorporate, for examples:
(d) facepiece visors, (e) hoods or (f) facepieces



(d) (e) (f)

Atmosphere-supplying respirators

Atmosphere-supplying respirators provide clean compressed breathing air from other sources which include self-contained breathing apparatus (SCBA) (g) and airline respirators (h).



(g) (h)

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4) MEDICAL SURVEILLANCE OF RESPIRATORY USERS

Before an employee, student or non-McGill personnel be assigned a respirator, EHS must confirm that the documentation is completed and confirms that individuals are free from any physiological or psychological condition that could preclude the person from using the selected respirator. A screening form for respirator users will assist in identifying such conditions.
See the 3) RESPIRATOR USER SCREENING FORM (Health validation)

EHS and (medical partners) will give respirator assignment authorization. Records of health surveillance will be retained. The medical aptitude to wear a respirator can be reviewed periodically. All health information shall be treated as medically confidential.

Employees who do not meet the medical requirements shall not work in hazardous situation where respiratory protection is required.

5) TRAINING

EHS will provide training and consultation to McGill & non-McGill Principal Investigators/Faculty/Supervisors on respiratory protection and the administration of the RPA guideline.

- All employees, students or non-McGill employees whose work requires any types of respirators shall receive appropriate training before any usage;
- Training shall be provided by EHS;
- Refresher training shall be provided as needed in order to maintain competency of all respirator users and other stakeholders;
- Records of the training shall be updated and maintained by EHS.

Respirator user training shall include the following topics:

-Role and responsibilities;
-Respiratory hazards present and their potential health effects;
-General limitations, conditions of use, care and basic maintenance;
-Undergoing a fit test on each respirator (if applicable);
-Record keeping.

6) FIT TESTING:

A respirator can't protect if it doesn't fit the face. Half or full facepiece respirators, known as tight-fitting respirators, must form a tight seal with the face to work properly.

The purpose of a qualitative or quantitative fit test is to verify a user's ability to obtain an effective seal and an acceptably comfortable fit for a selected tight-fitting respirator. The fit test process also verifies that a user is able to demonstrate the required level of competency in donning and doffing the respirator, as well as inspecting it and performing a user seal check.

- Prior to fit testing, the individual will be required to complete a medical surveillance form.
- A fit test shall be carried out prior to initial use of a tight-fitting respirator, **every 2 years**, whenever there is a change in the make/model of the respirator, or where there is a change in the individual which will affect the fit of the respirator (e.g., weight change, dental changes, cosmetic surgery, etc.);
- Fit testing is to be performed after or during training.
- The fit test shall be performed only on persons who are exempt from potential interference.
- The fit testing shall be conducted or coordinated by the EHS.

4 areas have been identified for potential interference with a protective seal or respirator function:
Facial hair, **Personal conditions** (e.g., hair buns and eyeglasses),
Personal effects or accessories (body piercing, garment),
Personal Protective Equipment (PPE) integration (safety glasses, eye, face, head protector).

Individuals shall present themselves for fit testing free from hair interference, where the respirator seals to the skin of the face or neck. For many, this requires being clean-shaven within the previous 24 or preferably 12 h to ensure that hair neither infringes on the sealing surface of the respirator nor interferes with valve or respirator function.

Potential interference needs to be managed before usage and prior to fit testing.

Fit testing methods:

The qualitative fit testing method is usualy performed for a half facepiece including disposables respirators.

The quantitative fit testing method usualy performed for full facepieces respirators.

7) USAGE

Air-Purifying Respirators

Air-purifying respirators are used with cartridges that have been selected on the basis of the contaminants. The filtering facepieces (disposable) are also part of the types of respirator used.

Breakthrough detection criteria

When wearing respirators, workers experiencing signs or abnormal perceptions (e.g., odours, tastes or unusual symptoms, irritation of the nose, throat, nausea and dizziness), must immediately leave the area at risk and report to their supervisor.

- **Replacent schedule of cartridges against Gases, Vapours**

The chemical cartridges must be discarded if damaged or soiled and after a day's use. Only new cartridges that come from their original sealed package may be used (before the expiry date).

Contaminant detection characteristics shall not be relied on for the replacement of the chemical cartridges.

- **Replacement schedule of Mechanical Filters against Aerosols**

Replace the particle filters on reusable respirators:

- when breathing resistance is perceived;
- if they are soiled or damaged;

- after a day's use.
- it represents a good practice to replace them after each workshift.

Filtering facepieces e.g. N95, are to be replaced:

- when breathing resistance is perceived;
- if they are soiled or damaged;
- after each usage.

Corrective eyewear or other equipment must not interfere with the seal of the respirator.

User seal checks will be performed, where applicable, by respirator users each time they put on their respirators.

8) INSPECTION, CLEANING, MAINTENANCE AND STORAGE

Respirator shall be properly maintained to retain its original effectiveness.
They shall be inspected prior to each use and monthly by their owner.

Manufacturer's recommendations for cleaning, sanitizing and maintenance are to be followed.
Where respirators are shared, they will be cleaned and sanitized by immersion after each use.

Respirator users are to perform basic repair, storage and recordkeeping.
See the 4) AIR PURIFYING RESPIRATOR (APR) MONTHLY INSPECTION FORM.

PAPR MONTHLY INSPECTION FORM. (to come at a later date)
SCBA MONTHLY INSPECTION FORM. (to come at a later date)

9) EVALUATION OF THE RESPIRATORY PROTECTION AWARENESS GUIDELINE

EHS will consult the Health and Safety Committee, McGill & non-McGill Principal Investigators/Faculty/Supervisors to review the RPA guideline and evaluate its effectiveness. This process will be initiated periodically.

Note: If hazard assessment, respiratory selection, heath care evaluation, training or respirator fit testing are required, the supervisor must contact the EHS office.

10) RECORD KEEPING AND DOCUMENTATION

EHS maintains records of the RPA guideline activities. These include:
-Workplace chemical and bioaerosol hazard assessment reports;
-Respiratory protection selection process;
-Respirator user health provider reports;
-Training and fit testing reports;
-Monthly respirator inspection reports;
-SCBA'S, air cylinders, PAPR'S maintenance reports (from authorized maintenance centres);
-Periodic RPA guideline evaluation reports.