Science N95 and HALF-MASK CARTRIDGE RESPIRATORS PROTECTION PROGRAM AND PROCEDURES

Trent University recognizes its responsibility to protect employees/students/volunteers and contractors from exposures to hazardous airborne particles or droplet hazards by providing appropriate personal protective equipment (PPE), respirator fit testing, and training on the use of N95 and half-mask (cartridge) respirators.

All employees/students/volunteers and contractors requiring the use of a respirator must undergo qualitative or quantitative fit testing and training prior to using a respirator.

When a N95 or half-mask respirator will not work, Trent University may provide an alternate respirator and/or another form of accommodation.

Prior to fit testing the supervisor will complete and submit "**Form 1 Authorization and Conditions of Use".** This form will assist in determining what respirator (and if applicable filter cartridges) may be required.

- If a respirator is required, the User will complete "**Form 2: Self-Assessment Screening Record**" to determine if the person has any medical conditions which may impact their ability to wear a respirator.
- All persons that have passed screening will then be fit tested and trained in the proper usage and care of respirators.

Trent University is committed to the annual review and approval of this policy in consultation with the Joint Health and Safety Committee (JHSC) and stakeholders.

DEFINITIONS:

N95 Respirator: It is a respirator that is a tight fitting, air-purifying respirator that removes airborne particles. Tight fitting means that the efficacy of the respirator is directly related to the ability of the respirator to seal tightly against a person's clean-shaven face when applied correctly.
Particulate air purifying respirators are certified by the "National Institute for Occupational Safety and Health" (**NIOSH**) in the United Sates.
NIOSH assigns air filtration ratings and they are classed as;

- 95, 99 and 100 refer to the efficiency of the filter, where 95 filters out 95% of airborne particles 0.3 microns (μm) or larger, 99 filters out 99% and 100 refers to a 99.97% filter efficiency.
- "**N**" rated respirators such as the N95 are indicated for workplaces that have "no-oil" mists in the air,
- "**R**" rated respirators indicate "oil resistant" and,
- "**P**" rated respirators indicate "oil proof.") N95 respirators have limitations that are outlined by the manufacturer.

As an example, an NIOSH class N95 respirator is one that if properly worn, is capable of filtering out 95% of airborne particles of 0.3 microns or more in size, but it is not suitable for workplaces where there may be oil mist in the air.

Half-Mask Cartridge Respirator: is an elastomer or silicone material respirator that is air purifying to help protect the user against certain chemical and/or airborne particulates. The mask fits the lower half of the user's face covering their nose and mouth. It holds two filter cartridges that are selected to protect against specific hazards. The filters are replaceable and will not last indefinitely.

Fit Test: The use of a qualitative or quantitative method, to evaluate the fit of a specific make, model and size of a respirator on an individual. The purpose of the fit test is to ensure the user can achieve an acceptable seal with a specific tight-fitting respirator. *(CSA standard Z94.4-02)*

Fit Tester: An individual who is qualified through training and experience, to conduct fit testing appropriate for those respirators selected for use in the workplace, and using standardized fit test protocols.

Personal Protective Equipment (PPE): is a worker's protection against hazards when eliminating workplace hazards is not possible. PPE may include any or all of the following: eye/face protection, safety footwear, gloves, safety headgear, hearing protection, high visibility clothing, immersion suits, limb and body protection, personal flotation devices and respiratory protection.

Qualitative Fit Testing (QLFT): QLFT is a pass/fail method that relies on the subject's sensory response to detect a challenge agent in order to assess the adequacy of respirator fit. Science Facilities is able to perform QLFT fit testing.

Quantitative Fit Testing (QNFT): QNFT is a test method that uses an instrument to assess the amount of leakage into the respirator in order to assess the adequacy of respirator fit.

User Seal Check: A respirator seal check is an action conducted by the respirator user, to determine if the respirator is properly seated to the face. A positive and negative pressure check is required.

PURPOSE:

Employers are responsible to implement engineering and administrative controls to protect persons from workplace hazards, and if necessary and where applicable provide and train personnel on the use and care of PPE.

Respirators are a form of PPE that are worn over the mouth and nose to protect the wearer from hazards that may be present in the workplace air.

N95 respirators provide protection from workplace air contaminants, which may include biological airborne or droplet hazards that may cause illness such as tuberculosis (TB), varicella or measles; pandemic flu; or illness from chemical/particulate exposures i.e. sanding dusts. N95 respirators are disposable and are intended for single use.

Half-mask respirators use a filtration method with attached cartridges to purify the air. The cartridges are selected to protect against specific air borne hazards and need to be replaced when expended. The respirators are reusable and can be cleaned between uses.

The purpose of fit testing and training for respirators is:

- To determine the type of risk or hazard to assist in selecting the appropriate respirator and if required cartridges;
- to determine through self-assessment screening if an person can safely proceed with fit testing and the subsequent wearing of a respirator;
- to determine the brand, model and size of respirator that fits and provides adequate protection to the user;
- to train on how to perform seal checks and use the respirator in accordance with best practice and manufacturer guidelines; to record and maintain fit testing and training records; and to meet legislative compliance.

RESPONSIBILITIES:

EMPLOYER

a) To provide the necessary resources to develop, implement and maintain all elements of the respirator program including training and fit testing.
b) To provide personal protective equipment to those requiring respirator protection.
c) To ensure the dissemination of information, such as provincial directives, to those requiring respiratory protection.
d) To ensure Trent University is compliant with legislative requirements

SUPERVISOR/PERSON OF AUTHORITY

a) To assess the hazard to determine if respiratory protection is required and to inform personnel of this requirement.
b) To communicate to those who require respirator fit testing and training of the requirement to do so.
c) To ensure those under their direction are knowledgeable and understand the requirements for respirator usage in the workplace.
d) In consultation with Environmental Health and Safety, to identify hazards in areas of their authority, where respiratory protection is required.
e) To ensure availability of respirator protective equipment.
f) To work co-operatively with Science Facilities, Environmental Health and Safety, and others as required, regarding the development of accommodation strategies for those unable to wear a N95 or half-mask respirator.
g) To enforce compliance with this procedure and proper respirator use requirements.

RESPIRATOR USERS

a) Are required to wear a respirator for their protection.
b) Must participate in all aspects of respirator training and fit testing, and be re-fitted at least every 2 years or as indicated by this policy, and the *CSA Standard Z94.4-02*.
c) Must be clean-shaven where the seal on the respirator comes in contact with the facial skin, for both the fit testing procedure and when using the respirator for protection.
d) Advise a Person of Authority (i.e. Supervisor / Lab Instructor / Professor) if any conditions exist that may affect the fit of their respirator and attend testing/re-testing at frequencies stipulated in this policy.
e) Maintain the fit testing card as proof of fit testing.

SCIENCE FACILITIES IN CONJUNCTION WITH ENVIRONMENTAL HEALTH AND SAFETY

a) To oversee the respiratory protection program, co-ordinate medical assessments as required, and maintain confidential health information.
b) To provide consultation and direction to Supervisors/Persons of Authority regarding hazards that may require respirator protection.
c) To co-ordinate and provide respirator fit testing and training.
d) To maintain fit testing and training records and provide fit testing lists to Supervisors/Persons of Authority as needed.
e) To assist in the facilitation of accommodations, where it has been determined that a person is unable to wear a respirator.

EXTERNAL EMPLOYERS / AGENCIES

a) Where applicable, must provide appropriate fit testing and training to persons, they are responsible for who may work/volunteer/study at Trent University.
b) On request, be able to provide evidence, such as a fit test record or card that indicates that fit testing was successfully completed.

PROCEDURE ELEMENTS

1. Fit Testing Frequency
2. Health Screening and Records
3. Fit Testing and Records
4. Respiratory Training and Communication
5. Maintenance of Fit Testing and Training Records
6. Program Evaluation and Quality Improvement

1.0 FIT TESTING FREQUENCY

Fit testing is required **every two years or sooner** if medical conditions or facial structure change significantly to adversely affect the usage and/or seal of the respiratory as per *CSA standard Z94.4-02*. Such conditions include but are not limited to:

- medical conditions which may impact respirator usage
- dental changes such as new dentures or major reconstruction
- facial scarring
- facial cosmetic surgery
- significant weight gain or loss (includes pregnancy weight gain) i.e. greater than 10%.

Respirator users are responsible for reporting any condition that may affect respirator usage or fit to their Supervisor/Person of Authority and Science Facilities. Subsequent actions may include gaining a medical professional's opinion and/or undergo re-testing to ensure a proper respirator seal.

2.0 HEALTH SCREENING AND RECORDS

All completed forms and records are maintained in confidentiality in Science Facilities offices.

2.1 RESPIRATORY PROTECTION SCREENING

Prior to fit testing the person requiring the respirator, the following documents are required:

1) "Form 1: Respirator Supervisor Authorization & Conditions of Use"
- to be completed by the Employee (User's) supervisor to assist in determining the type of respirator required.

Once the type of respirator protection is established, the User must complete **Sections 1** and **2** of one of the following two forms:

A. Form 2 (N95): "N95 Respirator Self-Assessment Screening Record"
B. Form 2 (Half-Mask): "Half-mask Respirator Self-Assessment Screening Record"

- Section 2 is a self-assessment screening tailored to determine if the person has any medical conditions which may impact their ability to wear a respirator. If such conditions are realized the person may be required to undergo further testing by a qualified medical professional. This subsequent testing will determine if such person can wear a respirator and/or which type of accommodation would be appropriate. All pertaining documents will be forwarded to Science Facilities.

2.2 CONDITIONS FOR ACCOMMODATION

Those who for medical reasons, or any other reasons, cannot wear a respirator, must convey such restrictions to their Supervisor/Person of Authority and/or Science Facilities for further follow-up and direction. Accommodations will be managed on a case by case basis.

2.3 MAINTENANCE OF CONFIDENTIAL HEALTH SCREENING AND MEDICAL RECORDS

Science Facilities will maintain all confidential medical information pertaining to respiratory use.

3.0 FIT TESTING

Fit testing will be arranged between the employee and Science Facilities. Science Facilities employs a qualitative fit test (QLFT) utilizing taste.
Prior to fit testing, employees will ensure they do not eat, drink, or smoke/vape anything other than water nor chew gum for 30 minutes prior to the test.

3.1 FIT TESTER

A qualified fit tester will provide fit testing. The fit tester must be competent through training and experience.

3.2 FIT TESTING PROTOCOL

An approved qualitative bitter aerosol taste threshold screening test (QLFT) will be employed by Science Facilities. In the event a fit test is not possible through QLFT, Trent University will endeavor to utilize another onsite facility or an outside agency. Only NIOSH approved N95 or better respiratory protection shall be used. All persons must be clean-shaven prior to fit testing as identified in the *CSA standard Z94.4-02*. Equipment shall be cleaned as per infection control procedures.

3.3 FIT TEST FAILURES

Where a respirator cannot be found to fit, Science Facilities in conjunction with Environmental Health and Safety and the Supervisor / Person of Authority will review the matter on an individual basis. Subsequently, the person will not be permitted to perform tasks where a respirator is required for protection. Refer to section **2.2 Conditions for Accommodation**.

4.0 RESPIRATOR TRAINING AND COMMUNICATION

N95 Respirator training will include:
a) purpose of the respirator,
b) limitations and capabilities of the respirator,
c) proper use of the respirator including donning, seal check and doffing,
d) make, model and size of respirator,
e) requirements for re-testing.

At hire employees requiring respirator fit testing must sign up for fit testing and training, or provide proof of fit testing within the last two years. Science Facilities will provide Supervisors / Persons of Authority with updated lists of those requiring re-fit testing/training on request, and also communicate fit testing/training reminders. Supervisors / Persons of Authority are required to communicate fit testing/training and re-fit testing/training requirements to applicable respirator users and ensure attendance for all respirator training sessions.

5.0 MAINTENANCE OF FIT TESTING AND TRAINING RECORDS

A fit test record will be completed and signed by both the respirator user and fit tester. The record will include the person's name and department; job position information; date tested; specific make, model and size of the respirator; type of fit test; test agent used if any; relevant conditions of the fit test; and results of the fit test.
Science Facilities will maintain fit testing and training records; maintain a fit testing database; and provide a fit testing card to the respirator user with their name, make/model/size of respirator and date of testing.

Respirator users will be required to sign the fit testing record and acknowledge training on the use of the respirator; and keep their fit testing card for future reference as proof of fit testing.

6.0 PROGRAM EVALUATION AND QUALITY IMPROVEMENT

Respirator fit testing policy and procedures will be reviewed and approved by Science Facilities in conjunction with Environmental Health and Safety, in consultation with the Joint Health and Safety Committees and other stakeholders as required. Quality improvement plans will be developed based on the program evaluation and successes will be acknowledged.

FORMS AVAILABLE FOR RESPIRATORY PROGRAM

Forms for Trent University Respiratory Program	Forms completed by
Form 1: Respirator Supervisor Authorization & Conditions of Use	Supervisor
Form 2 N95: Respirator Self-Assessment Screening Record	Employee (respirator user)
Form 2 Half-Mask: Respirator Self-Assessment Screening Record	Employee (respirator user)
Form 3 N95: Qualitative Fit Test (QLFT)	Employee and Fit Tester
Form 3 Half-Mask: Qualitative Fit Test (QLFT)	Employee and Fit Tester

CONTACTS FOR RESPIRATORY PROGRAM

Chris Williams	cwilliams@trentu.ca ext. 7061
Angela Sikma	angelasikma@trentu.ca ext. 6253

DIRECT REFERENCES:

https://www.nipissingu.ca/departments/human-resources/health-and-safety/Lab-Safety/Documents/Nipissing%20University%20N95%20Respiratory%20Program%20and%20Procedure%20May%202016.pdf