

Respiratory Protection Program

Worksite Specific Procedure

For:

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 (Shop/Work Area)

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**I. Purpose**

This Worksite Specific Procedure describes procedures for compliance with the policies and procedures of the University of Utah Respiratory Protection Program in the Bone and Joint Research Laboratory of the Orthopaedics department.

The Worksite Specific Procedure is only to be used in conjunction with the Respiratory Protection Program and is not a substitute for the complete Respiratory Protection Program.

**II. Scope**

This program applies to all employees who are required to wear air-purifying respirators for the purpose of preventing exposure to airborne contaminants. It also applies to employees who voluntarily wear respirators in situations where respirators are not required.

These procedures discuss the use of air purifying respirators for protection against airborne contaminants only. It does not cover the use of air-supplying respirators in oxygen deficient atmospheres.

**III. Responsibilities**

*The Lab Supervisor/Manager* is responsible for:

* Knowing the hazards in their areas that require respiratory protection.
* Knowing the types of respirators that need to be used.
* Ensuring the respirator program and worksite specific procedures are followed.
* Enforcing the wearing of respirators where it is required.
* Ensuring that employees receive training and medical evaluations when necessary.
* Coordinating annual re-training.
* Notification of Environmental Health and Safety concerning any problems with respirator use, or any changes in work processes that would impact airborne contaminant levels.

*The Employee who wears a respirator* is responsible for:

* Participating in all training.
* Wearing the respirator in accordance with the program policies and worksite specific procedures.
* Properly maintaining their respiratory protection equipment.
* Reporting any malfunctions or concerns to their supervisor.

**IV. Program Elements**

***1. Hazard Assessment***

The shop/area identified in this document has been evaluated by Environmental Health & Safety for airborne contaminants.

This evaluation was conducted October 2010 by Environmental Health and Safety (Kristen Shulsen, Bryan Benham, and James Stubbs)

See Appendix A for details of the Hazard Assessment.

Immediately notify Environmental Health and Safety of any changes in work processes, materials, or changes in ventilation that may change concentration of hazards or present new hazards.

***2. Selection of Proper Respiratory Protection***

## A. Required Use of Respirators

* + - * List all areas/job tasks that require use of respiratory protection in the shop/area identified in this document (attach additional sheets as necessary):

* + - * Employees required to wear respirators must receive a medical evaluation, fit testing and training before wearing the approved respirator, in accordance with the policies and procedures of the Respiratory Protection Program.

## B. Voluntary Use of Respirators

* + - * List all areas/job tasks where voluntary use of respiratory protection is used (attach additional sheets as necessary):

* + - * Employees voluntarily wearing respirators other than dust masks are subject to the requirements of this program.

### C. Approved Respirators and Users

* + - * Employees are only to wear respirators which have been approved for use and for which they have been properly fit-tested.
			* See Appendix B for a list of approved respirator wearers.

***3. How to wear a Respirator***

## A. Inspect the respirator prior to use

* + - * Check the elasticity and tightness of the headbands, fasteners and adjusters.
			* Check for cracks, tears, dirt or buildup between valves and seals.
			* Check the cartridge holders to make sure gaskets are in place and threads are not cracked or damaged.
			* Verify that cartridges are clean. Never clean a cartridge or filter by washing it or using compressed air.
			* Inspect cartridges for dents, scratches or damage to the sealing band.

## B. Fitting the Half face/Cartridge respirator

* + - * Fit the face piece on your nose bridge, making sure you can breathe through your nose.
			* Swing the bottom of the face piece in contact with your chin.
			* Position the shorter headband straps below your ears, above the nap of your neck.
			* Position the longer straps over the crown of your head, above your ears.
			* Adjust the straps to achieve a snug fit.

**C. User Seal Check Procedures**

Conduct both the positive and negative pressure seal checks listed below, or the respirator manufacturer's recommended user seal check method. User seal checks are not substitutes for qualitative or quantitative fit tests. ***These seal checks must be performed each time the respirator is donned.***

1. **Positive pressure seal check**.
* Close off the exhalation valve and exhale gently into the face piece.
* The face fit is considered satisfactory if a slight positive pressure can be built up inside the face piece without any evidence of outward leakage of air at the seal.
* For most respirators this method of leak testing requires the wearer to first remove the exhalation valve cover before closing off the exhalation valve and then carefully replacing it after the test.

 **B. Negative pressure seal check**.

* Close off the inlet opening of the canister or cartridge(s) by covering with the palm of the hand(s) or by replacing the filter seal(s).
* Inhale gently so that the face piece collapses slightly, and hold the breath for ten seconds.
* In the event that the design of the inlet opening prevents effective covering of the inlet opening with the palm of the hand; the test can be performed by covering the inlet opening of the cartridge with a thin latex or nitrile glove.
* If the face piece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is considered satisfactory.

#### Manufacturer's Recommended User Seal Check Procedures

* The respirator manufacturer's recommended procedures for performing a user seal check may be used instead of the positive and/or negative pressure check procedures provided it can be demonstrated that the manufacturer's procedures are equally effective.

**D.** **Fitting a Disposable respirator**

* Fit the face piece under you chin, then rest the narrow section on the bridge of your nose. Pinch the adjustable nosepiece if it has one.
* Slip the shorter strap over your head and below your ears.
* Slip the longer strap over the crown of your head above your ears.
* Adjust the straps for a snug fit (if adjustable).
* Check the fit according to the manufactures instructions.

***4. Maintenance and Care of Respirators***

## A. Cleaning Frequency

* + - * Respirators used by only one employee shall be cleaned and disinfected as often as necessary to be maintained in a sanitary condition.
			* Shared respirators must be cleaned and disinfected prior to use.
			* Emergency use respirators must be cleaned and disinfected after each use.

## B. Respirator Cleaning Procedures

* Remove filters, cartridges, or canisters. Disassemble face pieces by removing speaking diaphragms, demand and pressure‑demand valve assemblies, hoses, or any components recommended by the manufacturer. Discard or repair any defective parts.

* Wash components in warm (43 deg. C [110 deg. F] maximum) water with a mild detergent or with a cleaner recommended by the manufacturer. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt.
* Rinse components thoroughly in clean, warm (43 deg. C [110 deg. F] maximum), preferably running water. Drain.
* Disinfect components. When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:

1. Hypochlorite solution (50 ppm of chlorine) made by adding

approximately one milliliter of laundry bleach to one liter of water

at 43 deg. C (110 deg. F)

2. Aqueous solution of iodine (50 ppm iodine) made by adding approximately 0.8 milliliters of tincture of iodine (6‑8 grams ammonium and/or potassium iodide/100 cc of 45% alcohol) to one liter of water at 43 deg. C (110 deg. F); or,

3. Other commercially available cleansers of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer.

* Rinse components thoroughly in clean, warm (43 deg. C [110 deg. F] maximum), preferably running water. Drain. The importance of thorough rinsing cannot be overemphasized. Detergents or disinfectants that dry on face pieces may result in dermatitis. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.
* Dry components. Components should be hand‑dried with a clean lint‑free cloth or air‑dried.
* Reassemble facepiece, replacing filters, cartridges, and canisters where necessary.
* Test the respirator to ensure that all components work properly.

## C. Respirator Storage

* Respirators must be stored such that they are protected against dust, sunlight, heat, cold, moisture and chemicals.
* Respirators for routine use may be stored in a plastic airtight bag and then placed within a container or box.
* Respirators for emergency use shall be stored in a clearly marked container and accessible at all times.
* Store the respirator with the face piece and the valves in a normal position.
* Respirators shall be stored in the following locations:

## D. Inspection

* + - * Respirators shall be inspected before each use and during regular cleanings.
			* A respirator inspection includes the following:
		- Check of respirator function, tightness of connections, and the condition of the various parts, including the face piece, head straps, valves, connecting tubes, cartridges, canisters and filters.
		- Check of the elastic parts for pliability or deterioration
		- Emergency use respirators shall be inspected at least monthly, and in accordance with the manufacturer’s instructions.
		- Emergency use respirators shall also be checked for proper function before and after each use.
		- Random checks of respirators may be conducted at any time by supervisors or OEHS.

## E. Repairs

* If the respirator or any part appears to be worn, broken or not functioning properly, remove it from service and contact OEHS for an evaluation.

## F. Filters, Cartridges and Canisters

* Cartridges shall be replaced or whenever any contaminant smell is detected.
* Particulate filters shall be replaced or when resistance to breathing becomes noticeable to the wearer.
* Filters, cartridges and canisters must be labeled and color-coded with the NIOSH approval label. The label is not to be removed and must remain legible.
* N95 respirators are considered to be disposable and should be replaced after each use or when the respirator becomes wet or soiled.

***5. Limitations of an Air Purifying Respirator***

## A. IDLH Atmospheres

* Air purifying respirators shall not be used in oxygen deficient atmospheres, IDLH atmospheres, or unknown atmospheres. All confined spaces shall be considered IDLH unless proven otherwise. If assistance is required to determine an unknown atmosphere, contact Environmental Health and Safety.

## B. Respirator Types

* Respirator types, models, and sizes are not interchangeable. An employee shall only wear a respirator which has been fit tested and approved for the employee’s use.

## C. Cartridges and Filters

* Cartridges and filters are hazard specific. Use the cartridge approved for the task. Do not interchange manufacturer’s cartridges or filters.

## D. Concentration

* There are limits to the concentration levels that can be used with half mask and full face respirators. Consult the cartridge=s Maximum Upper Limit and Environmental Health and Safety to determine if you have the proper level of protection.

## E. Face Seal Protection

* Tight fitting face pieces are not to be worn by employees:
* Who have facial hair that comes between the sealing surface and the face, or that interferes with valve function
* Who have any condition that interferes with the seal, such as missing dentures, jewelry, or head-gear
* If corrective glasses, goggles or other PPE interfere with the seal. Anything that breaks the seal of a respirator will reduce its effectiveness. Facial hair, temple bars of glasses and head coverings are not to be worn.
* Corrective lenses can be fitted inside a full-face respirator with a special insert kit if necessary.

**F. Leaving the Respirator Work Area**

* Employees must be allowed to leave the respirator use area:
* To wash their faces and respirators as necessary to prevent eye or skin irritation.
* If they detect vapor or gas breakthrough, changes in breathing resistance, or leakage of the face piece.
* To replace the respirator or the filter cartridges or canisters.

***6. Medical Evaluations***

**A.** **Initial Evaluations**

* Every employee must be medically evaluated prior to fit testing and initial use of a respirator.
* Medical questionnaires and examinations shall be administered confidentially and during normal working hours.

##### B. Follow-up Medical Examinations

* Follow-up medical examinations are necessary if an employee gives a positive response to any of the questions numbered 1 through 8 in section 2 of the questionnaire.
* The follow-up medical examination shall include any medical tests, consultations or diagnostic procedures that the PLHCP deems necessary to make a final determination.

**C.** **Medical Determination**

* The Program Administrator must obtain a written recommendation from the PLHCP on whether or not the employee is medically able to use the respirator.

**D. Additional Medical Evaluations**

* Additional medical evaluations shall be provided if:
* An employee reports medical signs or symptoms related to the ability to use a respirator.
* A PLHCP, supervisor, or the program administrator deems an employee needs re-evaluation.
* Information from the program, observations during fit tests, or evaluations indicate the need for re-evaluation.
* Changes in the workplace conditions result in increased physiological burden on the employee.

**E. Employee Access**

* The employee shall receive a copy of the PLHCP’s recommendation.
* The employee shall have an opportunity to discuss the questionnaire and examination with the PLHCP.

***7. Fit testing***

## A. Initial Fit Tests

* Before wearing a respirator, employees are required to be fit tested with the same make, model, style and size of respirator that will be used.
* A sufficient number of respirator models and sizes shall be available so that the respirator is acceptable to and correctly fits the user.
* Employees shall wear only respirators which have been fit tested and approved for use.

## B. Frequency

* Fit testing shall be conducted initially, annually, and whenever changes in an employee’s physical condition could affect respirator fit, and whenever requested by the employee because the fit is unacceptable.

***8. Training and Information***

## A. For Required Users of Respirators

* All employees who are required to wear respirators will receive initial training in their use and maintenance.
* Employees must be trained sufficiently to demonstrate:
* A knowledge of why the respirator is required.
* How improper fit, usage or maintenance can compromise the protectiveness of the respirator.
* The limitations and capabilities of the respirator.
* How to deal with emergencies or malfunctions.
* How to inspect, don and remove, and check the seal of the respirator.
* Maintenance and storage procedures.
* Medical symptoms and signs that may limit or prevent the effective use of respirators (in Appendix C of the Respiratory Protection Program).
* General requirements of this standard.
* Training shall be provided by qualified persons.

### B. For Voluntary Users of Respirators

* Employees voluntarily wearing a respirator shall be provided the information in Appendix D of the Respiratory Protection Program.

### C. Frequency of Re-Training

* Re-training will be provided annually and whenever the following occur:
* Changes in the workplace or type of respirator used.
* Inadequacies in the employee=s knowledge or use of the respirator are apparent.
* Any other situation in which re-training is necessary to ensure safe respirator use.

**Appendix A**

HAZARD ASSESSMENT

HAZARD ASSESSMENT

###### Department/Area:

######  Date:

######  Assessor:

Conducted by Environmental Health and Safety

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CONTAMINANT** | **CONCENTRATION** | **JOB ACTIVITY** | **EXPOSURE TIME** | **RECOMMENDED RESPIRATOR** |
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**Appendix B**

**RESPIRATOR SELECTION AND APPROVED USER LIST**

**RESPIRATOR SELECTION AND APPROVED USERS**

**List review date:**

**Reviewer:**

This list should be reviewed at least annually

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **EMPLOYEE** | **JOB TASKS** | **MEDICAL EVAL DATE** | **FIT TEST DATE** | **APPROVED RESPIRATOR(S)** | **TRAINING DATE** |
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