

Protection From Wildfire Smoke-- Awareness Training

Health effects of wildfire smoke

Although wildfire smoke may contain hazardous chemicals, the main exposure concern for people who are not close to the fire are the tiny particles (particulate matter) suspended in the air. The smallest particles, called PM2.5 because their diameter is 2.5 microns or less, are considered most harmful because they can penetrate deep within the respiratory system.

Particulate matter can irritate the lungs and cause persistent coughing, phlegm, wheezing, or difficulty breathing. Particulate matter can also cause more serious problems, such as: reduced lung function, bronchitis, worsening of asthma, heart failure, and early death.

Individuals over 65 and those who have existing heart/lung conditions are more likely to suffer from serious health effects.

Protection from wildfire smoke

Protective measures are required to limit employee exposure when the regional Air Quality Index (AQI) for PM2.5 is 151 or greater. Examples of protective methods include:

1. Moving work inside buildings/ vehicles where the air is filtered.
2. Limiting outside work time or time indoors where air filtration is not provided.
3. Increasing rest time and frequency, and providing a rest area with filtered air.
4. Reducing the physical intensity of the work to help lower the breathing and heart rates.

The right to obtain medical treatment without fear of reprisal

Employees who experience symptoms caused by wildfire smoke exposure may seek medical treatment, and Employers may not punish affected employees for seeking such treatment.

For emergency medical attention, proceed to Stanford University Medical Center Emergency Department or the nearest Emergency Room.

- For non-health threatening concerns, consider consultation with your personal care physician or SU Occupational Health Center (SUOHC).

Obtaining the current Air Quality Index (AQI) for PM2.5

Various government agencies monitor the air at locations throughout California and report the current AQI for those regions. Although AQIs exist for several pollutants, wildfire smoke health standards are specifically based on the AQI for PM2.5.

- To find the current and forecasted AQI for PM2.5, go to www.AirNow.gov and enter the work location zip code (94305 for Main Campus).

Air Quality Index (AQI) Categories for PM2.5	Level of Health Concern
0-50	Good
51-100	Moderate
101-150	Unhealthy for Sensitive Groups
151-200	Unhealthy
201-300	Very Unhealthy
301-500	Hazardous

Supervisor Responsibilities*

For Employees assigned more than 1 hour of work outdoors (or indoors without air filtration) per work shift during a wildfire smoke event, the Supervisor shall:

- 1) *Check the current AQI before and periodically during the workday, AND*
- 2) *If the current AQI for PM2.5 is 151 or more:*
 - a. *Provide wildfire smoke awareness training to affected employees*
 - b. *Alert Employees the AQI has reached an unhealthy level and instruct them specific protective measures they must take.*
 - c. *Encourage employees, without fear of reprisal, to report back when the air quality is getting worse, or if they are suffering from any symptoms due to air quality.*
 - d. *Offer voluntary N95 respirators, and encourage their safe use.*

*As required by Cal/OSHA Title 8 CCR 5141

Protection From Wildfire Smoke-- N95 Respirator Use

Respirators can be an effective way to reduce exposure to wildfire smoke when they are properly selected and worn.

- When the current AQI for PM2.5 is 151 or greater, respirators will be provided for voluntary use to Employees who are at risk of exposure for more than one hour/shift. If the current AQI is greater than 500, respirator use is required.
- Respirators should be used properly and kept clean.

Precautions

1. A N95 filtering face piece respirator is the minimum level of protection for wildfire smoke. A NIOSH approval and mask protection rating (e.g., N95, N100, P100) should appear on the respirator or respirator packaging.
 - Surgical masks or items worn over the nose and mouth (e.g., scarves, t-shirts, bandannas) will not provide protection against wildfire smoke.
2. Read and follow the manufacturer's instructions on the respirator's use, maintenance, cleaning and care, along with any warnings regarding the respirator's limitations. The manufacturer's instructions for medical evaluations, fit testing, and shaving should also be followed, although doing so is not required for voluntary use of filtering facepiece respirators.
3. Do not wear respirators in areas where the air contains contaminants for which the respirator is not designed. A respirator designed to filter particulates will not protect Employees against gases or vapors, and it will not supply oxygen.
4. Keep track of your respirator so that it is not mistakenly used by someone else.
5. Employees with heart/ lung condition should consult with their personal physician prior to respirator use.

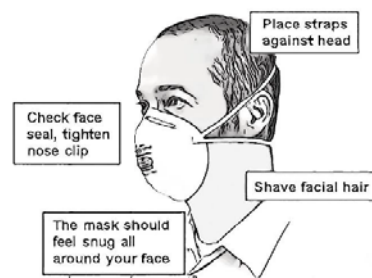
Properly put on, use, and maintain N95 respirators

To get the most protection from a respirator, there must be a tight seal around the face. A respirator will provide much less protection if facial hair interferes with the seal.

- The proper way to put on a respirator depends on the type and model of the respirator.

For those who use a N95 or other filtering facepiece respirator mask that is made of filter material:

1. Place the mask over the nose and under the chin, with one strap placed below the ears and one strap above.
2. Pinch the metal part (if there is one) of the respirator over the top of the nose so it fits securely.



Drawing Showing Proper Fitting of a Filtering Facepiece Respirator (shaving is not required for voluntary respirator use)

- For a respirator that relies on a tight seal of the face, check how well it seals to the face by following the manufacturer's instructions for user seal checks. Adjust the respirator if air leaks between the seal and the face. The more air leaks under the seal, the less protection the user receives.
- N95 respirator masks should be worn for a maximum of 8 hours and otherwise be replaced if they are damaged, deformed, dirty, or difficult to breathe through.
- Filtering facepiece respirators are disposable respirators that cannot be cleaned or disinfected. A best practice is to replace filtering facepiece respirators at the beginning of each shift.
- If you have symptoms such as difficulty breathing, dizziness, or nausea, go to an area with cleaner air, take off the respirator, and seek medical attention.

For questions regarding protection from wildfire smoke, visit the EH&S website at ehs.stanford.edu or call the EH&S Main Line at 650-723-0448.