

**WAC 296-307-09850 Appendix A: Protection from wildfire smoke information and training (mandatory). (1) The health effects and symptoms of wildfire smoke:**

(a) Although there are many hazardous chemicals in wildfire smoke, the main harmful pollutant for people who are not very close to the fire is "particulate matter," the tiny particles suspended in the air.

Particulate matter is a health risk whether you are exposed over a short period of time or a long period of time. The EPA has determined that particulate matter does cause, or likely causes cardiovascular disease, respiratory disease, cancer, and harm to the nervous system. In addition, particulate matter can irritate the eyes and lungs, causing eye irritation, phlegm, and persistent coughing. It can also cause difficulty breathing, reduced lung function, wheezing, bronchitis, worsening of asthma, heart failure, and early death.

(b) Wildfire smoke can harm your health even if you cannot see or smell the smoke or do not feel any symptoms. Even healthy people can be harmed by wildfire smoke. The wildfire smoke rule is designed to limit the harm from wildfire smoke, and it is important to consider taking action to reduce your exposure to smoke whenever the rule's protections are in effect, whether or not you have symptoms. Watch for symptoms as an additional indication to reduce exposure to smoke, and reduce work intensity.

This appendix reviews many wildfire smoke symptoms, but not every possible symptom may be mentioned, and it is a good idea to talk to your doctor or other health care provider before being exposed to wildfire smoke to have a plan for protecting yourself, including what symptoms to watch out for and how to reduce your exposure. This is especially important if you have any medical conditions; are pregnant; or have questions about the health effects or symptoms of wildfire smoke exposure.

(c) The wildfire smoke rule has additional requirements in WAC 296-307-09830 when workers experience symptoms requiring immediate medical attention. When the current PM<sub>2.5</sub> is 250.5 µg/m<sup>3</sup> or more, your employer must ensure workers experiencing such symptoms be moved to a location that ensures sufficient clean air as described in WAC 296-307-09830(3). Symptoms requiring immediate medical attention include, but are not limited to:

- Symptoms concerning for a heart attack, such as:
  - Chest pain or discomfort;
  - Feeling weak, light-headed, faint, or dizzy;
  - Pain or discomfort in the jaw, neck, or back;
  - Pain or discomfort in one or both arms or shoulders;
  - Shortness of breath, especially if accompanied by chest discomfort;
- Symptoms concerning for a stroke, such as:
  - Sudden numbness or weakness in the face, arm, or leg, especially on one side of the body;
  - Sudden confusion, trouble speaking, or difficulty understanding speech;
  - Sudden trouble seeing in one or both eyes;
  - Sudden trouble walking, dizziness, loss of balance, or lack of coordination;
  - Sudden severe headache with no known cause;
- Wheezing, difficulty breathing, or shortness of breath, particularly when accompanied by greater use of accessory muscles;

- Asthma attacks; or
- Nausea or vomiting.

(d) In addition to symptoms that under this rule require immediate medical attention, wildfire smoke can also cause other symptoms, many of which are described below. Even if a symptom is not mentioned here, you have the right under the wildfire smoke rule to seek medical attention or follow medical advice if you develop any symptoms you think may potentially be related to wildfire smoke exposure, regardless of their severity. Regardless of whether a symptom is serious enough to require immediate medical attention, employers covered by the wildfire smoke rule are required by WAC 296-307-09830(4) to have effective provisions made in advance for prompt medical attention of employees displaying symptoms of wildfire smoke exposure. If you develop a symptom, you should follow the advice of your doctor or health care provider, and seek medical attention if necessary. Your employer must not retaliate against you for seeking medical attention or following medical advice you have been given. In addition to the symptoms requiring immediate medical attention according to WAC 296-307-09830, all of the following symptoms are also potentially related to wildfire smoke exposure. They may also require medical attention:

- Respiratory:
  - Cough;
  - Runny or irritated nose;
  - Sore throat;
  - Sinus pain or pressure;
  - Phlegm.
- Fast or irregular heartbeat;
- Headache;
- Scratchy or irritated eyes; or
- Fatigue or tiredness.

(e) Developing wildfire smoke symptoms, even mild ones, indicates you are being overexposed to the smoke and should report your symptoms to your employer. In response, according to WAC 296-307-09830 your employer must permit you to follow medical advice you have been given, seek medical attention if necessary, and must take appropriate steps to reduce your exposure. This may include providing you with access to clean air according to WAC 296-307-09830(3) (your employer must ensure access to clean air when the current PM<sub>2.5</sub> is greater than 250.5 µg/m<sup>3</sup>); helping you use respiratory protection; or taking other steps to control your exposure.

(f) Sensitive groups:

L&I and the Washington state department of health consider all outdoor workers as a sensitive group at higher risk of experiencing adverse health effects from wildfire smoke exposure<sup>1</sup>.

Sensitive groups include people who are at higher risk of experiencing adverse health effects as a result of exposure to wildfire smoke, including those with preexisting health conditions; those with increased duration of exposure; and those whose work results in an increased breathing rate, including outdoor workers<sup>1</sup>. Although everyone is impacted by wildfire smoke exposure, sensitive groups are among those most likely to experience health problems from exposure to wildfire smoke.

Examples of sensitive groups include:

- Outdoor workers;

- People with lung diseases such as asthma or chronic obstructive pulmonary disease (COPD), including bronchitis and emphysema, and those who smoke;
- People with respiratory infections, such as pneumonia, acute bronchitis, bronchiolitis, colds, or flu; or those with, or recovering from COVID-19;
- People with existing heart or circulatory problems, such as irregular heartbeat, congestive heart failure, coronary artery disease, angina, and those who have had a heart attack or stroke;
- Children under 18 years old, and adults over age 65;
- People who are pregnant;
- People with diabetes;
- People with other medical or health conditions that can be worsened by exposure to wildfire smoke as determined by a physician;
- Tribal and indigenous people;
- People with low income.

<sup>1</sup> Washington Department of Health. April 2022, accessed April 2023. Washington Air Quality Guide for Particle Pollution: [https://doh.wa.gov/sites/default/files/legacy/Documents/4300/waqa%20infographic\\_English.pdf?uid=64384c71c8715](https://doh.wa.gov/sites/default/files/legacy/Documents/4300/waqa%20infographic_English.pdf?uid=64384c71c8715)

**(2) The importance of informing the employer when the employee is experiencing symptoms of wildfire smoke exposure:**

Watch for symptoms of wildfire smoke exposure as a sign to reduce exposure. The particulate matter in wildfire smoke can harm your health, even at lower levels of exposure.

It is important to notify your employer when you are experiencing symptoms of wildfire smoke exposure so your employer can respond appropriately.

Your employer will have provisions made in advance for prompt medical attention for employees who are experiencing symptoms of wildfire smoke exposure.

Do not ignore your symptoms. Wildfire smoke can be hazardous even when you cannot see it or smell it. Your employer cannot retaliate against you for reporting symptoms, for seeking medical attention, or for following medical advice you have been given. This is true whenever the wildfire smoke rule's protections are in effect.

Wildfire smoke is a serious work-related hazard for outdoor workers, and you have the right to file a workers' compensation claim to have your symptoms evaluated. You may file a workers' compensation claim whether or not you have personal health insurance. Your employer cannot prevent you from or retaliate against you for filing a workers' compensation claim.

In most cases, L&I will pay for your initial medical evaluation, even if your claim is denied. If your claim is allowed, the workers' compensation system will cover medical bills directly related to your condition and partial wage replacement benefits if you cannot work.

When the current PM<sub>2.5</sub> is 250.5 µg/m<sup>3</sup> or more, your employer must ensure workers experiencing symptoms requiring immediate medical attention be moved to a location that ensures sufficient clean air as described in WAC 296-307-09830(3).

**(3) The right to obtain medical attention without fear of reprisal:**

Employers must allow employees who show signs of injury or illness due to wildfire smoke exposure to seek medical attention or follow medical advice they have been given, and must not retaliate against affected employees for seeking such medical attention or following medical advice.

Employers must also have effective provisions made in advance for prompt medical attention of employees in the event of serious injury or illness caused by wildfire smoke exposure.

Additionally, when the current PM<sub>2.5</sub> is 250.5 µg/m<sup>3</sup> or more, employers must ensure workers experiencing symptoms requiring immediate medical attention be moved to a location that ensures sufficient clean air as described in WAC 296-307-09830(3).

For more information on your workplace safety and health rights, discrimination protections, and filing a discrimination complaint, visit [www.Lni.wa.gov/WorkplaceDiscrimination](http://www.Lni.wa.gov/WorkplaceDiscrimination).

**(4) The requirements of WAC 296-307-09805 through 296-307-09860:**

The following table summarizes the key requirements of the rule. This is not an exhaustive list, and additional details are found in WAC 296-307-09805 through 296-307-09860.

CURRENT PM <sub>2.5</sub>	AQI	REQUIREMENTS AT CURRENT PM <sub>2.5</sub> LEVEL
0.0-20.4 µg/m <sup>3</sup>	0-68	<ul style="list-style-type: none"> <li>• Prepare a written wildfire smoke response plan.</li> <li>• Provide wildfire smoke training to employees.</li> <li>• Watch the PM<sub>2.5</sub> conditions and forecasts.</li> <li>• Prepare a two-way communication system.</li> <li>• Make provisions for prompt medical attention, and permit such medical attention without retaliation.</li> </ul>
20.5-35.4 µg/m <sup>3</sup>	69-100	All of the above and: <ul style="list-style-type: none"> <li>• Notify employees of PM<sub>2.5</sub> conditions.</li> <li>• Ensure only trained employees work outdoors.</li> <li>• Consider implementing exposure controls.</li> <li>• Consider providing voluntary use respirators.</li> </ul>
35.5-250.4 µg/m <sup>3</sup>	101-300	All of the above and: <ul style="list-style-type: none"> <li>• Implement exposure controls.</li> <li>• Make N95 respirators available for voluntary use.</li> </ul>
250.5-500.3 µg/m <sup>3</sup>	301-499	All of the above and: <ul style="list-style-type: none"> <li>• Ensure workers experiencing symptoms requiring immediate medical attention be moved to a location that ensures sufficient clean air.</li> <li>• Directly distribute N95 respirators to employees for voluntary use.</li> </ul>
500.4-554.9 µg/m <sup>3</sup>	500-beyond the AQI	All of the above and: <ul style="list-style-type: none"> <li>• Implement a complete required use respiratory protection program, including fit-testing, medical evaluations, requiring employees to be clean-shaven, and requiring the use of particulate respirators.</li> </ul>
555 µg/m <sup>3</sup>	Beyond the AQI	All of the above and: <ul style="list-style-type: none"> <li>• Require respirators with an assigned protection factor (APF) of 25 or more.</li> </ul>

**(5) The employer's methods of determining the current PM<sub>2.5</sub> under WAC 296-307-09815:**

The employer's methods of determining the current PM<sub>2.5</sub>: \_\_\_\_\_

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**(6) How employees can obtain the current PM<sub>2.5</sub>, and the employer's methods to communicate the current PM<sub>2.5</sub>:**

Various government agencies monitor the air quality at locations throughout Washington and provide information to the public on the current air quality. These monitoring sites measure several harmful pollutants, but the pollutant of particular concern for wildfire smoke is the current PM<sub>2.5</sub> which is reported as the hourly average of PM<sub>2.5</sub> in µg/m<sup>3</sup>. Some of these sites also report the NowCast Air Quality Index (AQI). The NowCast AQI uses the air quality data of all the pollutants from these regulatory monitors and the NowCast averaging time to attempt to provide a general index of the overall air quality.

Although these monitoring stations may measure several pollutants, WAC 296-307-09805 through 296-307-09860 only uses the hourly average of PM<sub>2.5</sub>. The NowCast AQI for PM<sub>2.5</sub> may also be used as an alternative.

One way to find the current and forecasted PM<sub>2.5</sub> is to go to [enwiwa.ecology.wa.gov](http://enwiwa.ecology.wa.gov) and find the nearest monitor on the map, or [fire.airnow.gov](http://fire.airnow.gov) and enter the zip code of the location where you will be working. The current PM<sub>2.5</sub> is also available from the Air Quality WA mobile app, or the AirNow mobile app.

Employees who do not have access to the internet can contact their employer for the current PM<sub>2.5</sub>. The U.S. EPA website [www.enviroflash.info](http://www.enviroflash.info) can transmit daily and forecasted air quality by email for your city or zip code.

While the requirements in this rule are based on the current PM<sub>2.5</sub>, employers may choose to use the NowCast Air Quality Index (AQI) for PM<sub>2.5</sub> to comply with this rule. Because the current PM<sub>2.5</sub> is based on a one-hour average, and the NowCast AQI averages data over a longer time, it is normal for the two values to differ over short periods of time. Your employer will tell you whether they use the current one-hour average PM<sub>2.5</sub>, or the NowCast AQI for PM<sub>2.5</sub>. The following table indicates the NowCast AQI values that may be used from the Washington state department of ecology, local clean air agency, or EPA to approximate the current PM<sub>2.5</sub>.

CURRENT PM <sub>2.5</sub>	NOWCAST AIR QUALITY INDEX FOR PM <sub>2.5</sub> (AQI)
20.5 µg/m <sup>3</sup>	69
35.5 µg/m <sup>3</sup>	101
250.5 µg/m <sup>3</sup>	301
500.4 µg/m <sup>3</sup>	500
555 µg/m <sup>3</sup>	Beyond the AQI

Your employer will establish a two-way communication system to communicate changing wildfire smoke conditions to you, and allowing you to communicate information to your employer such as: Worsening air quality; availability issues of exposure control measures and respirators; and any symptoms of wildfire smoke exposure. Your employer cannot retaliate or discriminate against you for raising safety concerns, or reporting symptoms.

The employer's communication system is: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**(7) The employer's response plan for wildfire smoke including methods to protect employees from wildfire smoke, and the exposure symptom response procedures:**

Your employer will provide training on the specific methods they will implement to protect you as part of their wildfire smoke response plan, and their procedures to respond when employees experience symptoms of wildfire smoke exposure.

The employer's methods to protect employees are: \_\_\_\_\_

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The employer's exposure symptom response procedures are: \_\_\_\_\_

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**(8) The importance, limitations, and benefits of using a properly fitted respirator when exposed to wildfire smoke:**

Respirators can be an effective way to protect employee health by reducing exposure to wildfire smoke, when they are properly selected and worn. Respirator use can be beneficial even when the current PM<sub>2.5</sub> is less than 35.5 µg/m<sup>3</sup>.

Respirator use is not voluntary, and a complete respiratory protection program in accordance with WAC 296-307-594 through 296-307-622, Respirators, is required in any of the following situations:

- The employer chooses to require respirator use;
- A respiratory hazard, such as exposure to a substance over the permissible exposure limit (PEL) or hazardous exposure to an airborne biological hazard, is present.
- Work under the scope of this rule where the current PM<sub>2.5</sub> is 500.4 µg/m<sup>3</sup> (AQI 500) or higher.

If respirator use is required, you will be enrolled in a complete respiratory protection program which includes additional training, fit-testing, and medical evaluations.

To evaluate respiratory hazards in your workplace, see WAC 296-307-624 through 296-307-628, Respiratory hazards.

Take the following precautions to ensure the best possible protection when using N95 respirators voluntarily for protection from wildfire smoke:

(a) Employers must select respirators certified for protection against the specific air contaminants at the workplace. For PM<sub>2.5</sub>, a National Institute for Occupational Safety and Health (NIOSH) certified respirator with at least an N95 particulate filter is required. A label or statement of certification should appear on the respirator or respirator packaging.

KN95 masks, surgical masks, or other items worn over the nose and mouth such as scarves, t-shirts, and bandannas will not provide protection against wildfire smoke. A NIOSH-approved N95 filtering-face-piece respirator, shown in the image below, is the minimum level of protection for wildfire smoke.

(b) 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.

For the best protection, follow the manufacturer's instructions for medical evaluations, fit-testing, and shaving. Fit-testing is done to ensure that you have the correct size respirator, and that it seals properly. Without fit-testing, wildfire smoke can leak around the seal of the respirator and increase your risk of experiencing adverse health effects. Because of this, you should not rely on voluntary use respirators alone to protect you from wildfire smoke. Take action to reduce your exposure to wildfire smoke in the other ways described in the wildfire smoke rule and in subsection (10) of this appendix, ask your employer to voluntarily arrange for respirator fit-testing, or both.

(c) Tight-fitting respirators such as N95s cannot form a seal over facial hair. Small particles such as those in wildfire smoke will leak around the respirator if you are not clean-shaven. Be sure you are clean-shaven to ensure the respirator can seal to your face.

(d) Do not wear respirators in areas where the air contains contaminants for which the respirator is not designed. A respirator designed to filter particles will not protect you against gases or vapors, and it will not supply oxygen. Some filtering-facepiece respirators are equipped with a sorbent layer for absorbing "nuisance" organic vapors. These can be used for voluntary use, but are not NIOSH certified for protection against hazardous concentrations of organic vapor.

(e) Keep track of your respirator, so you do not mistakenly use someone else's respirator.

(f) If you have questions about whether it is safe for you to wear a respirator, you should talk to your doctor or other medical provider, particularly if you have a heart, lung, or other medical conditions.

**(9) The risks and limitations of using an unfitted respirator, and the risks of wearing a respirator without a medical evaluation:**

Respirators such as N95s must form a tight seal to the face to work properly. This is especially important for people at increased risk for severe disease, as exposure to wildfire smoke can worsen symptoms. A fit-test is conducted to verify that a respirator properly seals to your face so smoke does not leak around the seal.

It also ensures that the respirator be comfortable so you can wear it as long as you need. Your employer is not required to provide a fit-test for voluntary use of N95 respirators for wildfire smoke below a current  $PM_{2.5}$  of  $500.4 \mu\text{g}/\text{m}^3$  (AQI 500) unless your employer chooses to require respirator use. Even without a fit-test, you can take steps to improve the respirator seal, and to reduce your exposure to wildfire smoke by following the steps in subsection (10) of this appendix.

While wearing a respirator provides protection from wildfire smoke, it increases breathing resistance, causing you to work harder to breathe. If you have heart or lung problems, talk to your doctor or other medical provider before using a respirator. A medical evaluation is conducted as part of evaluating respirator selection and use to ensure that the wearer is healthy enough to perform work while wearing a respirator. Your employer is not required to provide a medical evaluation for voluntary use of N95 respirators for wildfire smoke below a current  $PM_{2.5}$  of  $500.4 \mu\text{g}/\text{m}^3$  (AQI 500) unless your employer chooses to require respirator use. If you have questions about whether it is safe for you to wear a respirator, you should talk to your doctor or other medical provider. This is particularly important if you have a heart

or lung condition (including asthma), or if you have other medical conditions of concern. Follow your health care provider's advice if you have medical conditions that can be worsened by wildfire smoke exposure.

If, while wearing a respirator, you experience:

- Any symptoms your doctor, other health care provider, or employer has told you may limit or prevent the effective use of respirators; or
- Any respiratory (lung, breathing), cardiac (heart, circulation), or other symptoms (including, but not limited to, those listed under subsection (1) of this appendix) that may limit or prevent the effective use of respirators;

Then go to an area with clean air as described in WAC 296-307-09830(3), take off the respirator, and get help. You should also do this if you are unsure whether a symptom you are experiencing may limit or prevent the effective use of respirators.

**(10) How to properly put on, use, and maintain the respirators provided by the employer:**

A tight-fitting respirator such as an N95 will not be able to seal to your face if facial hair interferes with the seal. Make sure you are clean-shaven to allow a better seal and more reliable protection. Loose-fitting powered air-purifying respirators do not rely on a tight seal to provide protection, so they may be worn by people with facial hair.

Always inspect your respirator for damage or defects before use, and follow the manufacturer's instructions. Replace respirators that are damaged, dirty, or wet.

The proper way to put on a respirator depends on the type and model of the respirator. For those who use a filtering-facepiece respirator such as an N95 follow these steps to put on the respirator:

(a) With clean, dry hands, inspect the respirator and straps for any damage or defect.

(b) Hold the respirator with the straps facing you, and the metal or foam nosebridge facing up.

(c) Place the mask with the top over your nose and the bottom under your chin. Hold the mask in place with one hand.

(d) While holding the mask to your face with one hand, grab the top strap with the other hand.

(e) Pull the top strap over your head and place it so the strap goes above your ears.

(f) While continuing to hold the mask to your face, pull the bottom strap over your head and place it so the strap goes below your ears.

(g) Bend the nosepiece of the respirator over the top of the nose, so it fits securely.

(h) Perform a seal check:

(i) The mask should sit snug on your face, with the top strap above your ears, the bottom strap below.

(ii) Cover the respirator with both hands and exhale. If you feel air leaking where the respirator seals against your face, adjust the respirator and nosepiece and try again. The respirator should bulge from the face and not leak around the seal.

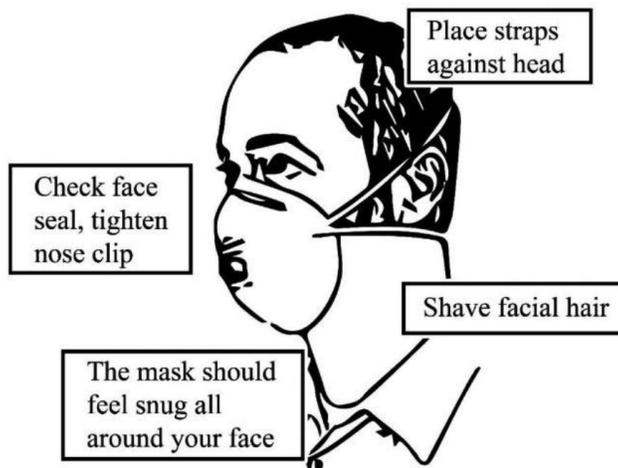
(iii) Next, cover the respirator with both hands and inhale. If you feel air leaking where the respirator seals against the face, adjust the respirator and nosepiece and try again. The respirator should collapse slightly and not leak around the seal.

Filtering-facepiece respirators are disposable respirators that cannot be cleaned or disinfected. Best practice is to replace filtering-facepiece respirators at the beginning of each shift.

Respirator filters need to be replaced if they get damaged, deformed, dirty, or difficult to breathe through. If, while wearing a respirator, you experience:

- Any symptoms your doctor, other health care provider, or employer has told you may limit or prevent the effective use of respirators; or
- Any respiratory (lung, breathing), cardiac (heart, circulation), or other symptoms (including, but not limited to, those listed under subsection (1) of this appendix) that may limit or prevent the effective use of respirators;

Then go to an area with clean air as described in WAC 296-307-09830(3), take off the respirator, and get help. You should also do this if you are unsure whether a symptom you are experiencing may limit or prevent the effective use of respirators.



[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060, and chapter 49.17 RCW. WSR 24-01-070, § 296-307-09850, filed 12/14/23, effective 1/15/24.]