



STEPS TO REDUCE EXPOSURE TO WILDFIRE SMOKE IN RURAL ALASKA
July 13, 2015

MONITOR AIR QUALITY ADVISORIES

Communities are advised to

- Monitor state-issued air quality reports and stay alert to any news coverage or health warnings related to smoke.
- Find out if the Department of Environmental Conservation has an Air Quality Index (AQI) for their area/community. The AQI, based on data from local air quality monitors or other data sources, informs you about the daily air quality in your area and about precautions that can be taken to protect your health. You are encouraged to sign up for alerts or check the latest air quality conditions here:
<http://dec.alaska.gov/Applications/Air/airtoolsweb/Advisories>
- The following is an example of an AQI table:

AQI Category (AQI Values)	Visibility - Arid Conditions (miles)	PM2.5 or PM10¹ Levels (µg/m³) - 24 hour average	Cautionary Statements
Good (0 to 50)	≥ 11	0-12	None
Moderate (51 to 100)	6-10	12.1-35.4	Unusually sensitive people should consider reducing prolonged or heavy exertion.
Unhealthy for Sensitive Groups (101 to 150)	3-5	35.5-55.4	People with heart or lung disease, the elderly and children should reduce prolonged or heavy exertion.
Unhealthy (151 to 200)	1.5-2.75	55.5-150.4	People with respiratory or heart disease, the elderly and children should avoid prolonged exertion; everyone else should limit prolonged exertion
Very Unhealthy (201 to 300)	1-1.25	150.5-250.4	People with respiratory or heart disease, the elderly and children should avoid any outdoor activity; everyone else should avoid prolonged exertion
Hazardous	<1	>250.5-500	Everyone should avoid any outdoor exertion; people with respiratory or heart disease, the elderly and children should remain indoors

¹ PM2.5 and PM10 indicate levels of particles with an aerodynamic diameter less than 2.5 µm and less than 10 µm, respectively, which are suspended in the air and could be inhaled.

WATCH FOR SMOKE-RELATED SYMPTOMS AND ADDRESS THEM PROMPTLY

1. People who experience respiratory or cardiovascular symptoms should contact their health care provider. These symptoms may include:
 - Inability to breathe normally
 - Cough with or without mucus
 - Chest discomfort or chest pain
 - Wheezing and shortness of breath
 - Coughing, scratchy throat, irritated sinuses
 - Headaches
 - Stinging eyes
 - Runny nose
2. Sensitive groups such as the elderly, children, and persons with respiratory and cardiovascular disease should follow their health care provider's advice about any special precautions and medicines that might be needed and about a respiratory management plan. People should contact their health care provider if their symptoms worsen, and discuss at what point it is appropriate to evacuate the area.
3. Local health care providers should make sure to have sufficient routine medications and smoke-related medical therapies (e.g., nebulizers, masks, supplemental oxygen, etc.) on-hand to address a larger than normal volume of patients with respiratory problems. A robust mail or shipping system may help facilitate obtaining these therapies in time of need.

REDUCE YOUR EXPOSURE TO SMOKE AND HEAT

The health effects of air pollution, including those from wildfire smoke, are well established. However, there are several steps that you could take to reduce exposure and minimize the potential risks of adverse health effects when air quality in the community becomes unhealthy.

1. Use the Appropriate Face Mask

To reduce exposure to smoke, you can use certain facemasks (technically called respirators, but they look more like paper masks) that are good enough to filter out much of the smoke. Smoke particles are typically smaller than 2.5 microns and respirator masks will filter out a significant portion of these particles if they properly fit the person's face. An airtight seal on the face is very important for these masks to provide any benefit. People with beards will find it nearly impossible to achieve a good seal on the face and hence will not be protected by these masks.

Respirator masks, which may include an exhale valve, do not require cartridge filters. They are marked with one of the following: "R95", "N95", or "P95." Soft masks with higher ratings (R, N, or P 99 and R, N, or P 100) are also available and are designed to filter out even more particles. These masks are usually available at hardware stores like Lowes and Home Depot and can cost between \$5 and \$15 per mask. Cheaper dust masks such as paper "comfort" or "dust" masks commonly found at hardware stores are designed to trap large

particles, such as sawdust. These masks will not protect your lungs from smoke. *Look for the “95” or better rating.*

NOTE: Masks increase resistance to airflow and hence can make breathing more difficult. Some individuals may experience physiological stresses such as increased respiratory and heart rates when wearing a mask.

2. Protect Yourself when Going Outside

An appropriate face mask/respirator, as indicated above, can be used when a person needs to go outdoors for a short-term errand such as hauling water or sewage, going to the store, clinic, community center, or other location around town. If you are driving a truck or car, you can reduce the amount of particles in your vehicle by keeping the windows closed; the car’s ventilation system typically removes a portion of the particles coming in from outside. Also, most cars have the ability to recirculate the inside air, which helps to keep particle levels lower. Wearing an appropriate face mask/respirator may help reduce exposure to smoke while on the ATV. It is important to keep in mind that vehicles can kick up a lot of dust from the road. Road dust, like wildfire smoke, can have adverse health effects. The slower you drive your vehicle, the less dust you generate. Studies show that PM10 dust levels increase as vehicle speed increases. For example, reducing speed from 40 miles per hour (mph) to 20 mph reduces dust emissions by 65%.

3. Find or Create a Clean Room

People who live in areas that are or anticipated to be regularly affected by smoke from wildfires may consider creating a “clean room” in their home. A good choice is an interior room, with as few windows and doors as possible. Some suggestions for maintaining a clean room include the following:

- Keep windows and doors closed.
- If possible, set up a room air cleaner that is properly sized. This will help remove particles from the air while emitting no or minimal levels of ozone. An air purifier with a HEPA filter to filter dust particles could cost a hundred dollars or more. This air purifier can not only reduce smoke particles coming from outside, but also dust from inside.
- Run an air conditioner or central air conditioning system if you have one. If the air conditioner provides a fresh air option, keep the fresh-air intake closed to prevent smoke from getting inside. Make sure that the filter is clean enough to allow good air flow indoors. A portable or window air conditioner could cost a few hundred dollars.
- Do not vacuum, because vacuuming stirs up particles.
- Do not smoke or burn anything, such as candles or incense, anywhere in the house.
- Keep the room clean.
- If it is too warm to stay inside with the windows closed (and you have no cooling mechanism) or if you are very sensitive to smoke, seek shelter elsewhere in public facilities that are equipped with filtration/air purifying systems and air-conditioners. These facilities may include the clinic, senior center, school, or tribal office. Work with the public health center or community health aide (CHAP) in your community to identify this facility.

4. Avoid Exposure to Excessive Heat

Heat can have serious health effects whether you are indoors or outdoors. Those at greatest risk for heat-related illness include infants and children up to 4 years of age, people 65 years of age and older, people who are overweight, and people who are ill or on certain medications. However, even young and healthy individuals can succumb to heat if they participate in strenuous physical activities during hot weather. Here are a few things to keep in mind to beat the heat:

- Drink plenty of fluids to hydrate and replace salts and minerals, wear appropriate clothing and sunscreen, pace yourself, stay cool indoors, schedule outdoor activities at a cool time of the day, and keep a close eye on loved ones who are at increased risk for heat-related illness.
 - Warning signs of adverse heat symptoms include the following: an extremely high body temperature (above 103°F); red, hot, and dry skin (with little or no sweating); heavy sweating; rapid, strong pulse; throbbing headache; dizziness; fainting; nausea; and confusion.
- If you see any of the above signs, you may be dealing with a health emergency. Have someone call for immediate medical assistance and cool yourself or the victim. Drink cool, nonalcoholic beverages; rest; take a cool shower or bath; wear lightweight clothing; seek a cool area (e.g., an air conditioned building or shade).
- Air-conditioning or other cooling methods such as electric fans can protect against heat-related illness and death. If a home is not air-conditioned, people can reduce their risk for heat-related illness by spending time in public facilities that are air-conditioned. These facilities may include the clinic, senior center, school, or tribal office. Air conditioners may not be available in all communities. Communities may consider planning for how to stay cool in hot summers during this and subsequent years.