



Public Health Wildfire Communication Toolkit



Table of Contents

Introduction

Communication Strategy	3
Purpose	3
Background	3
Communication Objectives	3
Partners for Outreach and Education	3

Key Media Messages

Wildfires: A General Public Health Issue	4-6
Steps to Reduce Exposure during a Wildfire	7
Safe Water Supply During and After a Wildfire	7-8
Food Safety During and After a Fire	8-9
Mental/Emotional Health During and After a Wildfire	9-10
Caring for Pets during a Wildfire Event	10-11

Social Media Messages

12-14

Fact Sheets

Fact Sheet Links	15
------------------	----

Safety and Preparedness Resources

Safety and Preparedness Links	15
-------------------------------	----

Frequently Asked Questions

FAQs and Answers	16-18
------------------	-------

Public Service Announcements

Wildfire Smoke Warning Public Service Announcement	19-20
CDC PSAs	21

Sample Press Releases

22-24

Posters and Flyers

25-27

Useful Tools and Resources

28

Bibliography

29

Acknowledgements

30

Communication Strategy

The key to a successful strategy is identifying and targeting the right audiences in the right ways with the right messages. During a fire incident, there are specific smoke messages that can be integrated into the general fire information effort.

Purpose

To provide local health departments with a communication strategy to engage the public in smoke information from wild land fires occurring in the State of Montana.

Background

Wildfire smoke affects the air quality in Montana during the summer months making it hard to recreate outdoors during this time. This strategy provides a collective approach to informing the public about smoke-related issues.

Communication Objectives

Influence risk perception by describing the hazard, potential damage, and personal safety concerns

Provide specific actions people can take to prepare for the hazard

Provide reminders and reinforcement of preparedness actions

Provide specific warning messages regarding some eminent threat such as evacuation notices, take shelter warnings, etc.

State the progress that local health agencies are making in coordination with other agencies to prepare for the event.

Partners for Outreach & Education

- Local/Regional Media (TV/Radio/Newspaper)
- Facebook
- Public Places/Organizations (brochures, flyers, newsletter inserts)
- Department of Environmental Quality (DEQ)
- Environmental Protection Agency (EPA)
- Centers for Disease Control and Prevention
- Visitors Bureaus and/or Local Tourism Agencies
- American Lung Association
- Montana Department of Public Health and Human Services

Key Media Messages

During a wildfire event, the public is seeking timely and accurate facts about what happened, where it happened, and what is being done to address the situation at hand. They will question the scale of the crisis, the immediacy of the threat to them, the duration of the threat, and who is going to fix it.

Representatives from your department should be prepared to provide responses to these questions in a quick and accurate manner. Opening messages are provided and can be combined with any additional statements from the various categories.

Opening Messages

- Wildfires across the state are creating hazardous and smoky conditions. Smoke from fires in our region may begin to drift into [insert name] communities and rapidly degrade air quality.
- Wildfire season is upon us again in Montana. As wildfires give off more and more smoke, it's important to protect your health and take simple steps to reduce exposure to wildfire smoke.
- With the immediate danger from the [insert name] wildfire behind us, county public health officials urge residents near the fire zone to take precautions as air quality levels could still be affected.

Wildfires: A General Public Health Issue

- Deaths from fires and burns are the fifth most common cause of unintentional injury deaths in the United States. While wildfire deaths are less common, in 2013 34 people died in the United States due to Wildland Fires. Although wildfire deaths are infrequent, the smoke from wildfires can cause health problems for many different types of people.
- Be aware that outdoor events, such as athletic games or competitions, may be postponed or cancelled if smoke levels are high.
- There are proven public health strategies that can prevent wild fires and related deaths and injuries including:
 - Education about wildfire risks and fire prevention
 - Residential fire sprinklers
 - Fire escape planning and practice
- Diseases of the circulatory system include high blood pressure, coronary artery disease, and congestive heart failure to name a few. These chronic conditions make those living with them more likely to experience attacks of temporary chest pain, heart attacks, sudden death due to a cardiac arrhythmia, acute congestive heart failure, or stroke. If you have any of these conditions, make sure that you have a plan for responding to a wildfire emergency. Before wildfire season hits, speak with your doctor about steps you can take to protect yourself.
- If heavy smoke is present, those who are more vulnerable should take precautions and avoid prolonged or heavy activity. People should keep in mind that the air quality can change quickly.
- Older adults, children, and people with heart or lung disease (including asthma) are more vulnerable to the adverse health effects of air pollution from wildfires. Take the proper common sense steps to protect yourself this wildfire season.

- Cardiovascular diseases are the leading cause of mortality in the United States: about 30 to 40 percent of all deaths each year. The vast majority of these deaths occur in people over age 65. People with chronic lung or heart disease may experience one or more of the following symptoms: shortness of breath, chest tightness, pain in the chest, neck, shoulder or arm, palpitations, or unusual fatigue or lightheadedness. Wildfire smoke can be a trigger for a number of these symptoms. For individuals with cardiovascular disease it is important to know your triggers and symptoms to help avoid an emergency situation.
- Researchers have estimated that tens of thousands of elderly people die prematurely each year from exposure to particulate air pollution. Older adults are more likely to have pre-existing lung and heart diseases, and may be more susceptible to particle-associated effects. Particulate air pollution can compromise the function of cells involved in immune defenses in the lungs, potentially increasing susceptibility to bacterial or viral respiratory infections, which may lead to more serious problems in older adults.
- Short-term exposure (hours or days), typical of wildland fire events, can aggravate lung disease, leading to asthma attacks and acute bronchitis. These effects can also increase the susceptibility to respiratory infections. Healthy children and adults may not suffer serious effects from short-term exposures, although temporary minor irritation may occur when particulate matter levels are elevated. For more information on wildfire smoke particulate matter and associated health risks check out this fact sheet from Southern Fire Exchange. [“Health Effects of Wildland Fire Smoke: Insight from Public Health Science Studies”](#).
- Children are considered a sensitive population because their lungs are still developing. Because of this sensitivity air pollution can affect them more than healthy adults. Several factors lead to increased exposure in children compared with adults: they tend to spend more time outside; they engage in more vigorous activity; and they inhale more air (and therefore more harmful smoke chemicals) per pound of body weight. These are all reasons to try to limit children’s outdoor activities during smoky conditions.
- People who smoke, especially those who have smoked for many years, have compromised lung function. However, due to their lungs being more accustomed to irritation from tobacco smoke, smokers are generally less likely to report symptoms from exposure to wildfire smoke. Still, they may be injured by wildfire smoke just like non-smokers.
- Commonly available one-strap paper dust masks, which are designed to keep larger particles out of the nose and mouth, typically offer little protection from wildfire smoke. The same is true for bandanas (wet or dry) and tissues held over the mouth and nose. Surgical masks are designed to filter air coming out of the wearer’s mouth, and do not provide a good seal to prevent inhalation of small particles found in wildfire smoke. Incorrect use of respirators, or use of other, less protective face coverings, may give the wearer a false sense of security and encourage increased physical activity and time spent outdoors, resulting in increased exposure to smoke. The National Institute for Occupational Safety and Health (NIOSH)-certified N95 respirators are masks made of filtering material that fit over the nose and mouth. The filter material will filter out some of the small particles that may be found in smoke, but only if there is a good fit to the wearer’s face.



- Smoke from wildfires is a mixture of gases and fine particles from burning trees and other plant materials. Smoke can hurt your eyes, irritate your respiratory system, and worsen chronic lung diseases including asthma, emphysema, and bronchitis. When there is a lot of wildfire smoke, the fine particles can also increase risk of heart attack and other problems in people with underlying heart disease.
- Individuals with heart disease or lung diseases such as asthma should follow health care providers' advice about prevention and treatment of symptoms including using the full spectrum of medications prescribed to control them. Those with an asthma action plan should follow it closely and monitor breathing and exposure to airborne matter. Anyone experiencing symptoms should contact a health care provider for further advice or call 911 in an emergency.
- **Recommendations for people with chronic diseases during wildfire season:**
 - Have an adequate supply of medication (more than five days).
 - If you have asthma, make sure you have a written asthma action plan and your rescue inhaler on you at all times possible.
 - If you have heart disease, check with your health care providers about precautions to take during smoke events. Do this before the fire season if you live in an area where wildfires are possible.
 - If you plan to use a portable air cleaner, buy one prior to a smoke emergency that matches the room size specified by the manufacturer.
 - Contact a health care provider if your condition worsens when you are exposed to smoke.
- For more information on asthma and wildfires, visit these websites:
 - Centers for Disease Control and Prevention: <http://www.cdc.gov/asthma/faqs.htm#attack2>
 - American Lung Association: <http://www.lungusa.org/healthy-air/outdoor/protecting-your-health/what-makes-air-unhealthy/forest-fires-respiratory-health-fact-sheet.html>

Recommendations and Precautions

- **Reduce the amount of time spent outdoors.** This can usually provide some protection, especially in a tightly closed, air-conditioned house in which the air-conditioner can be set to re-circulate air instead of bringing in outdoor air. Staying inside with the doors and windows closed can usually reduce exposure.
- **Reduce the amount of time engaged in vigorous physical activity outdoors.** This can be an important and effective strategy to lower the dose of inhaled air pollutants and minimize health risks during a smoke event.
- **Reduce other sources of indoor air pollution** such as burning tobacco, candles, and incense; using gas, propane, or wood-burning stoves and furnaces; cooking; and vacuuming. These activities can greatly increase the particle levels in a home and should be avoided during high pollution or when wildfire smoke is present.

Steps to Reduce Smoke Exposure During a Wildfire

- **Have enough food and medications** on hand to last several days in order to minimize driving. Foods stored for use during a fire should not require frying or broiling, which can add particles to indoor air.
- **For protection during very unhealthy or hazardous levels of smoke**, it may be appropriate for some individuals to stay in a clean room in the home, relocate temporarily to a cleaner air shelter, or leave the area entirely if it is possible and safe to do so.
- **Avoid vacuuming** (except with HEPA filter-equipped vacuums) because most vacuum cleaners disperse very fine dust into the air.
- **Avoid strenuous work or exercise outdoors.** With the exception of firefighters and emergency personnel who are trained to work in hazardous environments, people should avoid physical exertion during smoke exposure.
- **Avoid driving whenever possible.** If driving is necessary, run the air conditioner on the “recycle” or “re-circulate” mode to avoid drawing smoky air into the car.
- **Shutting windows and doors** can give some protection from smoke. Air conditioners should be set on “re-circulate” during fire or smoke events to prevent smoky air from being drawn in from outside. (Note: This does not apply to HVAC systems in commercial and office buildings).
- **Air purifiers** may be effective at reducing indoor particulate counts. Units with ozone-generating technology should be avoided, however, as ozone is known to cause respiratory irritation and does not remove airborne particulates.

- **If you have moderate to severe heart or lung disease**, consider staying with relatives or friends who live away from the smoke. If significant smoke is already present, evaluate whether evacuation might cause greater exposure than staying at home and using other precautions.

Safe Water Supply During and After a Wildfire

(Water for Drinking, Cooking, and Personal Hygiene)

- Safe water for drinking, cooking, and personal hygiene includes bottled, boiled, or treated water. Your local county health department or the Montana Department of Environmental Quality has made specific recommendations for boiling or treating water in your area. If you get your water from a cistern or a well, please follow the information released concerning the disinfection of cisterns or wells.

Follow these general rules concerning water for drinking, cooking, and personal hygiene:

- Do not use contaminated water to wash dishes, brush your teeth, wash and prepare food, wash your hands, make ice, or make baby formula. If possible, use baby formula that does not need to have water added. You can use an alcohol-based hand sanitizer to wash your hands.
- If you use bottled water, be sure it came from a safe source. If you do not know that the water came from a safe source, you should boil or treat it before you use it. Use only bottled, boiled, or treated water until your supply is tested and found safe.



- Boiling water, when practical, is the preferred way to kill harmful bacteria and parasites. Bringing water to a rolling boil for 1 minute will kill most organisms.
- When boiling water is not practical, you can treat water with chlorine tablets, iodine tablets, or unscented household chlorine bleach (5.25% sodium hypochlorite):
 - If you use chlorine tablets or iodine tablets, follow the directions that come with the tablets.
 - If you use household chlorine bleach, add 1/8 teaspoon (~0.75 mL) of bleach per gallon of water if the water is clear. For cloudy water, add ¼ teaspoon (~1.50 mL) of bleach per gallon. Mix the solution thoroughly and let it stand for about 30 minutes before using it.
 - Note: Treating water with chlorine tablets, iodine tablets, or liquid bleach will not kill parasitic organisms.
- Use a bleach solution to rinse water containers before reusing them. Use water storage tanks and other types of containers with caution. For example, fire truck storage tanks and previously used cans or bottles may be contaminated with microbes or chemicals. Do not rely on untested devices for decontaminating water.
- For more information about health and safety during a wildfire, please visit the Montana Department of Environmental Quality web site at todaysair.mt.gov

Food Safety During and After a Wildfire

Wildfires may knock out power to your home and without power refrigerated and frozen food may be at risk of spoiling. Always have a plan to preserve the food in the case of a wildfire even and be sure to inspect your food after a wildfire event.

Prior to evacuation or during power outage

Frozen and refrigerated foods

- If there is time prior to evacuation and your refrigerator or freezer may be without power for a long period:
 - Divide your frozen foods among friends' freezers if they have electricity;
 - Seek freezer space in a store, church, school, or commercial freezer that has electrical service; or
 - Use dry ice – 25 pounds of dry ice will keep a 10-cubic-foot freezer below freezing for 3-4 days. (Exercise care when handling dry ice, because it freezes everything it touches. Wear dry, heavy gloves to avoid injury.)
- Thawed food can usually be eaten or refrozen if it is still “refrigerator cold,” or if it still contains ice crystals. To be safe, remember, “When in doubt, throw it out.” Discard any food that has been at room temperature for two hours or more, and any food that has an unusual odor, color, or texture.
- Your refrigerator will keep foods cool for about 4 hours without power if it is unopened. Add block or dry ice to your refrigerator if the electricity will be off longer than 4 hours.

After the Fire

- Discard food that has been near a fire. Food exposed to fire can be damaged by the heat of the fire, smoke fumes, and chemicals used to fight the fire. Food in cans or jars may appear to be okay, but the heat from a fire can activate food spoilage bacteria. If the heat is extreme, the cans or jars themselves can split or rupture, rendering the food unsafe.

- One of the most dangerous elements of a fire is sometimes not the fire itself, but toxic fumes released from burning materials. Discard any raw food or food in permeable packaging, such as cardboard, plastic wrap, screw-topped jars, and bottles stored outside the refrigerator. Food stored in refrigerators or freezers can also become contaminated by fumes. The refrigerator seal isn't airtight and fumes can get inside. Chemicals used to fight the fire contain toxic materials and can contaminate food and cookware. Food that is exposed to chemicals should be thrown away as the chemicals cannot be washed off the food. Cookware exposed to fire-fighting chemicals can be decontaminated by washing in soap and hot water. Then submerge for 15 minutes in a solution of 1 teaspoon chlorine bleach per quart of water.

Mental/Emotional Health During and After a Wildfire

Opening message

Wildfires, like all disasters, can lead to emotional distress in those that experience them. Survivors living in the impacted areas (including children and teens), loved ones of victims, and first responders, rescue & recovery workers are all at risk. Feelings such as overwhelming anxiety, constant worrying, trouble sleeping and other depression-like symptoms are common responses to disasters and traumatic events (before, during and after the event), although reactions can vary from person-to-person. Most people that experience disasters are able to 'bounce back' in a short period of time, but others may need additional support in order to cope and move forward.

- Signs of emotional distress related to wildfires may include:
 - Eating or sleeping too much or too little
 - Pulling away from people and things
 - Having low or no energy
- Having unexplained aches and pains like constant stomachaches or headaches
- Feeling helpless or hopeless
- Excessive smoking, drinking or using drugs (including prescription medication)
- Feeling unusually confused or forgetful
- Feeling like you have to keep busy
- 'Hyper-vigilant'- constantly thinking that something is going to happen
- Constant yelling or fighting with family and friends; irritable
- Having thoughts and memories related to the wildfire that you can't seem to get out of your head; nightmares
- 'Triggers' such as smells or sounds that 'take you back' to the wildfire; sweating or heart racing when you experience these triggers
- Unable to perform daily tasks like taking care of your kids or other dependents, or getting to work or school, trouble concentrating at work or school or excessive absences
- Thinking of hurting or killing yourself or someone else
- If you or someone you know shows any of these warning signs, whether you know they are in relation to a wildfire or if you aren't sure how they started, **you are not alone!** Call the toll-free Disaster Distress Helpline at 1-800-985-5990 or text TalkWithUs to 66746.
- After a wildfire event has occurred, there are a number of steps you can take to help restore emotional well-being and a sense of control in your life, including the following:
 - **Give yourself time to adjust.** Anticipate that this will be a difficult time in your life. Allow yourself to mourn the losses you have experienced.

- **Ask for support from people who care about you and who will listen to your concerns.** If those closest to you also have experienced or witnessed the wildfire, realize that they may not be able to be as supportive as usual.
- **Turn it off and take a break.** You may want to keep informed, but try to limit the amount of news you take in whether it's from the internet, television, newspapers or magazines. While getting the news informs you, being over exposed to the news can actually increase your stress.
- **Find out about local support groups that are available for those who have suffered as a result of the wildfires.** Particularly those that are led by appropriately trained and experienced professionals such as psychologists. These groups can be especially helpful for people with limited personal support systems.
- **Engage in healthy behaviors to enhance your ability to cope with excessive stress.** Eat well-balanced meals, get some exercise and try to rest. If you experience ongoing difficulties with sleep, you may be able to find some relief through relaxation techniques. Avoid alcohol and drugs because they can suppress your feelings rather than help you to manage or lessen your distress.
- **Establish or reestablish routines such as eating meals at regular times and following an exercise program.** Schedule some breaks to distract yourself from thinking about the fire and focus instead on something you enjoy. Try to do something that will lift your spirits.
- **Avoid major life decisions such as switching jobs, making large purchases or making sudden changes in your relationships.** These activities have their own stresses that can exacerbate your current circumstances.

- Individuals with prolonged reactions that disrupt their daily functioning should consult with a trained and experienced mental health professional. Psychologists and other appropriate mental health providers help educate people about normal responses to extreme stress. These professionals work with individuals affected by trauma to help them find constructive ways of dealing with the emotional impact.

Caring for Pets and Livestock During a Wildfire Event

Pets and wildfires

- The effects of smoke are similar for humans and animals. Healthy younger animals might be minimally affected by smoke from wildfires but older animals or animals with respiratory or cardiovascular disease can be severely affected. Brachycephalic (Pugs, Pekingese, Persians, etc.) breeds of dogs and cats may also be more affected by smoke from wildfires.
- If your pet is on medications for cardiovascular or respiratory disease make sure you have their medications on hand and to give them as directed by your veterinarian.
- Dogs and cats show similar signs of distress as humans, including runny nose, dry raspy cough, and watery eyes. Asthmatic cats might show increased respiratory symptoms.
- What can you do for your pets during times of wildfires and smoke?
 - When smoke is thick or hanging in the area keep your pets inside.
 - Limit activities that will increase their breathing and expose them to smoke and other pollutants.

- If you have an air conditioner, keep it running to circulate air but keep the fresh air intake closed. This will also help keep your pets cool and prevent overheating especially in the brachycephalic breeds.
- Keep your windows closed and use a humidifier if you have one to keep the air moist.
- Let your pet outside only long enough for bathroom needs. If you have an animal that is very sensitive to the smoke, use training pads inside.
- If your pet needs walks, walk them when the smoke is not heavy and the temperatures are cooler, usually in the morning or late at night.
- Make sure your pet has plenty of fresh water to drink.
- If your pet is anxious or exhibits breathing problems, contact your veterinarian immediately.

Horses and wildfires

- The effects of smoke are similar for humans and animals. Smoke can cause eye irritation, cough, nasal discharge, and wheezing. Horses with chronic obstructive pulmonary disease (heaves) are especially sensitive to the effects from smoke.
- If you have a horse on medication for COPD (heaves), make sure you have them on hand and to give them as directed by your veterinarian.
- Smoke and particulate matter can alter the immune system and reduce the ability of the

lung to remove bacteria and other material to which horses are normally exposed. This can lead to secondary problems such as bacterial pneumonia.

- What can you do for your horses during times of wildfires and smoke?
 - Limit exercise when smoke is visible. Don't engage your horse in activities that increase their breathing.
 - Make sure your horse has plenty of fresh water to drink. Water helps keep the airways moist and facilitates clearance of inhaled particulate matter.
 - Limit the dust exposure from hay by feeding dust free hay or soaking hay before feeding. This reduces the horse's exposure to more inhaled particles.
 - If your horse is coughing or having difficulty breathing, contact your veterinarian immediately.

How you can Help Animal Service Officers Locate, Catch and Transport Your Pets

- Have a metal address sign on a metal stake at the entrance of your property.
- Hide a key in an easy to describe location to allow access to pets that live inside your home.
- Place metal identification tags on ALL pets. Include animal's name, your last name and address.
- Be sure all horses are trained and will load into a trailer.
- Create an alternate water source for all livestock in case electricity to well pumps & automatic watering systems goes out.
- NEVER, NEVER "cut animals loose." Animals located inside the house or confined in enclosures are easier to evacuate.

Social Media Messaging

General Health

- Hazy air? Check DEQ's Air Quality Index before heading out.
www.todaysair.mt.gov
- Wildfires are unpredictable and can quickly send smoke into Montana communities. Montana DEQ uses an Air Quality Index (AQI), a color-coded tool which shows air pollution levels. Green is Good, yellow is Moderate, orange is Unhealthy for Sensitive Groups, red is Unhealthy for all groups, purple is Very Unhealthy and dark red is Hazardous.
www.todaysair.mt.gov
- To protect yourself and your family from wildfire smoke, limit outdoor activities during poor air quality times. Check the Air Quality Index for the current levels.
www.todaysair.mt.gov
- High smoke levels can have hazardous impact on health. People with respiratory or heart disease, the elderly, pregnant women, and children should follow their breathing management plans or contact their healthcare providers. Learn more health and safety tips related to wildfires at emergency.cdc.gov/disasters/wildfires/smoke.asp
- Hazy outside? Scratchy throat? People in smoky areas should drink lots of water. Keeping hydrated reduces the amount of smoke that can travel deep into your lungs.
- Twitchy airways are considered a hallmark of asthma; this tendency may also be found in many individuals without asthma as well. In such individuals, smoke exposure may cause asthma-like symptoms. Find out to protect yourself by visiting <http://www.cdc.gov/features/wildfires/>
- Wildfire smoke contains hazardous particles known as Particulate Matter. These harmful particles can easily pass through a mask or clothing and end up in your airways. If air quality is poor due to wildfires, try to remain indoors and limit your exposure. Find out more about Particulate Matter by checking out a presentation at, http://www.dphhs.mt.gov/publichealth/asthma/documents/2013WildfiresandSmoke_AsthmaGroup.pdf
- Wildfire smoke contains significant quantities of respiratory irritants, which can act in concert to produce eye and respiratory irritation and potentially exacerbate asthma. For more information on respiratory irritants and particulate matter visit http://www.airnow.gov/index.cfm?action=particle_health.index
- According to the American Lung Association, more than 35 million people in the US suffered from chronic lung diseases such as asthma and chronic obstructive pulmonary disease (COPD) in 2008. Levels of pollutants that may not affect healthy people may cause breathing difficulties for people with asthma, COPD, or other chronic lung diseases. Find out more about pollutants and how they affect your health by visiting http://www.airnow.gov/index.cfm?action=particle_health.index
- During exercise, people can increase their air intake as much as 10 to 20 times over their resting level. Increased breathing rates bring more pollution deep into the lungs. Reducing physical activity is an effective strategy to lower the dose of inhaled air pollutants and reduce health risks during a smoke event. To know when to avoid exercise, reference the Guide to Outdoor Sporting Events and Wildfire Smoke developed by Montana DPHHS.
<http://deq.mt.gov/FireUpdates/docs/WildfireRecommendationsOutdoorSportingEvents.pdf>

- Most air conditioners are designed by default to re-circulate indoor air. Those systems that have both “outdoor air” and “re-circulate” settings need to be set on “re-circulate” during fire/smoke events.
- If smoke levels increase to very unhealthy or hazardous levels, it may be appropriate for sensitive individuals to stay in a clean room in the home, relocate temporarily to a cleaner air shelter, or to leave the area entirely if it is possible and safe to do so. Sensitive individuals include; pregnant women, young children, some elderly, and people with respiratory conditions.
- For over 70,000 American communities wildfires are not a matter of if, but when. Do you live in a fire prone area? Talk to your neighbors, community and business leaders to find out what they are doing about wildfire preparation. Take responsibility for wildfire risk and become prepared today. To learn more visit <http://www.fireadapted.org>
- If a wildfire has affected you and your family, you may feel sad, mad, guilty, or numb. This is a difficult time, but there are things you can do to help cope with the stress and stay healthy even during the cleanup time that follows. Visit <http://emergency.cdc.gov/disasters/wildfires/afterfire.asp>
- Montana Department of Natural Resources and Conservation will be providing fire season updates on Twitter, please follow them at @MTDNRCFire.

Mental/Emotional Health During and After a Wildfire

- The Disaster Distress Helpline provides year-round, 24/7 phone- and text-based crisis counseling to anyone who is experiencing emotional distress related to natural or man-made disasters within the U.S. and territories. For free support anytime call 1-800-985-5990 or Text TalkWithUs to 66746.
- After wildfire evacuation orders are lifted, additional distress may occur upon return to the impacted area if a home, business, school, place of worship or a beloved community landmark are damaged or destroyed. When loss of or major damage to any kind of property occurs, distress may arise from having to adjust to a 'new normal': a new school (peers may be separated, there may be new teachers and other caregivers that are unfamiliar to kids), temporary or permanent loss of employment, and an overall disruption in home and community life. Visit the [American Psychological Association website](#) for more information on recovering from wildfire events.
- Children need an opportunity to discuss their experiences in a safe, accepting environment. Provide activities that enable children to discuss their experiences. Encourage children to talk about wildfire-related events.
- After a wildfire, it's important to remember to take care of your emotional and mental health. The American Red Cross has a helpful tool with strategies to help relieve stress after a wildfire. <http://disasterdistress.samhsa.gov/media/899/emotionalhealth.pdf>

Pets and Livestock

- Adrenaline, panic and confusion affect both humans and animals, so be aware of these effects. Use caution when working with livestock both during and after a wildfire. Their survival instincts can make normal handling techniques ineffective.
- Livestock are very sensitive to wildfire and will respond to a fire that is anywhere within their sensory range. Normal reactions range from nervousness to panic to aggressive escape attempts. Livestock are often injured or killed by fleeing from a wildfire into fences and barriers. Be sure to check your animals for injuries from fences and to check your fences for damage from fleeing animals.
- After a wildfire event, check surviving livestock for signs of injury. Health disorders such as burned eyes, feet, udders, sheaths and testicles, as well as lung inflammation and edema from smoke inhalation are common after livestock experience wildfire. As soon as possible, have your livestock inspected by a vet. It can take a while for symptoms to appear, so monitor your cattle for several weeks after the fire.

Fact Sheets

CDC Wildfires Fact Sheet

<http://emergency.cdc.gov/disasters/wildfires/facts.asp>

Protect Your Pets in an Emergency

<http://emergency.cdc.gov/disasters/petprotect.asp>

Health Threat from Wildfire Smoke

<http://www.southernnevadahealthdistrict.org/download/health-topics/wildfires.pdf>

US Geological Survey: Wildfire Hazards—A National Threat

<http://pubs.usgs.gov/fs/2006/3015/2006-3015.pdf>

National Park Service, Office of Public Health: Fact Sheet

http://www.nps.gov/public_health/info/di/Wildland%20Fire%20Smoke%20Fact%20Sheet.pdf

American Public Health Association: Are You Ready for Wildfires?

<http://www.getreadyforflu.org/facts/Wildfires.pdf>

Safety & Preparedness Resources

Montana DNRC: Ready Set Go—Wildland Fire Action Guide

<http://dnrc.mt.gov/Forestry/Fire/Prevention/Documents/Final%20Montana%20RSG%20Guide.pdf>

American Red Cross

http://www.redcross.org/images/MEDIA_CustomProductCatalog/m4340149_Wildfire.pdf

Insurance Institute for Business & Home Safety

https://www.disastersafety.org/wp-content/uploads/wildfire-checklist_IBHS.pdf

US Forest Service: Smokey Bear

<http://www.smokeybear.com/house-safety.asp>

Federal Emergency Management Agency

http://www.ready.gov/wildfires?utm_source=hp_promo&utm_medium=web&utm_campaign=fema_hp

US Fire Administration

http://www.usfa.fema.gov/citizens/home_fire_prev/wildfire/

Center for Disease Control and Prevention

<http://www.bt.cdc.gov/disasters/wildfires/>

Frequently Asked Questions

Q: *Should I wear a dust mask or N95 respirator?*

A: The National Institute for Occupational Safety and Health (NIOSH)-certified N95 respirators are masks made of filtering material that fit over the nose and mouth. The filter material will filter out some of the small particles that may be found in smoke, but only if there is a good fit to the wearer's face. It is also important to know that N95 particulate respirators and dust masks only filter particles, not toxic gases and vapors.

Dust masks that are not NIOSH-certified may not offer protection from small particulate matter, even if properly worn.

Filtering face-piece respirators and masks can make the work of breathing more difficult and can lead to increased breathing rates and heart rates. They can also contribute to heat stress. Because of this, respirator use by those with heart and respiratory diseases should only be done under a doctor's supervision.

Q: *What is the health threat from wildfire smoke?*

A: Smoke from wildfires is a mixture of gases and fine particles from burning trees and other plant materials known as Particulate Matter (PM). Smoke and the PM it contains can irritate your eyes or your respiratory system and worsen chronic heart and lung diseases. How much and how long you are exposed to the smoke, as well as your age and degree of susceptibility, play a role in determining whether or not you are likely to experience smoke-related health problems. If you are experiencing serious medical problems for any reason, seek medical treatment immediately.

Q: *Where can I find information about the air quality in the area I live?*

A. Check the local air quality index by going to the Montana Department of Environmental Quality's website at www.todaysair.mt.gov.

Q: *How can I protect myself and my family from the harmful effects of smoke?*

A: The best thing to do is to limit your exposure to the smoke. Strategies to decrease exposure to smoke include staying indoors whenever possible, using air conditioners (air conditioned homes usually have lower air exchange rates than homes that use open windows for ventilation), using mechanical air cleaners, keeping windows closed while driving in a vehicle, and minimizing other sources of air pollution such as smoking tobacco, using wood burning stoves, burning candles or incense, and vacuuming. Drinking lots of water can help keep your airways moist, which may reduce symptoms of scratchy throat and coughing.

Q: How can I tell if the smoke is affecting me or my family?

A: The following are useful tips for detecting early symptoms of smoke effects:

- Smoke can cause coughing, scratchy throat, irritated sinuses, shortness of breath, chest pain, headaches, stinging eyes and runny nose.
- People who have heart disease might experience chest pain, rapid heartbeat, shortness of breath or fatigue.
- Smoke may worsen for people who have pre-existing respiratory conditions such as heart or lung disease, respiratory allergies, asthma, and chronic obstructive pulmonary disease (COPD) in the following ways:
 - Inability to breathe normally
 - Coughing with or without mucus
 - Chest discomfort
 - Wheezing and shortness of breath
- When smoke levels are high, even healthy people may experience some of these symptoms

Q: Will a wet towel or bandana provide any help?

A: A wet towel or bandana is not recommended. While they may stop large particles, fine ones that can still get into the lungs.

Q: If I have respiratory problems and can't reach my doctor, where should I go?

A: If you are experiencing a medical emergency, call 911 or go to the hospital emergency room immediately.

Q: Our community has an outdoor game scheduled this evening. Should we cancel it?

A: All persons in areas affected by heavy wildfire smoke should consider limiting outdoor activity and staying indoors whenever possible to minimize exposure to the smoke. In settings of prolonged, heavy exposure to wildfire smoke, public health departments and local air quality authorities may recommend canceling such activities. Stay tuned to your local news for the latest information.

Q: What should I do about closing up my house when it is so hot in there?

A: If it is too warm to stay inside with the windows closed and you do not have an air conditioner, seek alternative shelter by visiting family members, neighbors, or public buildings that have air



conditioning. You may also spend a few hours visiting an air-conditioned location such as a mall, movie theater, or library.

Q: What air toxins are produced by forest fires?

A: The three air toxics that are of most concern from wildfires are:

- **Acrolein** - An aldehyde with a piercing, choking odor. Even at low levels, acrolein can severely irritate the eyes and upper respiratory tract. Symptoms include stinging and tearing eyes, nausea and vomiting.
- **Formaldehyde** - Low level exposure can cause irritation of the eyes, nose and throat. Higher levels cause irritation to spread to the lower respiratory tract. Long-term exposure is associated with nasal and nasopharyngeal cancer.
- **Benzene** - Benzene causes headaches, dizziness, nausea and breathing difficulties, and is a very potent carcinogen. Benzene causes anemia, liver and kidney damage, and cancer.

Q: How can it be predicted where the smoke will go?

A: The behavior of smoke depends on the fire's size, location, area topography, weather, and more. Smoke fills valleys, which is where people usually live. Smoke levels are hard to predict: a wind can clear out a valley, blow more smoke in, or fan the fires. Smoke concentrations change constantly. National Weather Service satellite photos, weather and wind forecasts, and knowledge of the area can all help in predicting how much smoke will come into an area, but predictions are rarely accurate for more than a few hours. The National Weather Service's website has a lot of information, including satellite photos that are updated throughout the day. For the western United States, the web address is www.wrh.noaa.gov

Public Service Announcements

WILDFIRE SMOKE WARNING PUBLIC SERVICE ANNOUNCEMENT

Unhealthy levels of wildfire smoke are expected in the following areas:

[XXXCountyXXXX]

[XXXCountyXXXX]

[XXXCountyXXXX]

Areas of smoke are expected at [location] today.

Wildfire smoke has harmful chemicals that can affect your health. It can cause eye and throat irritation, coughing, and difficulty breathing. **People who are at greatest risk of experiencing symptoms due to smoke include those with chronic lung disease (such as asthma) and/or heart disease, young children, pregnant women, and older adults.** Even healthy adults can be affected by smoke. Seek medical help if you have symptoms that worsen or become severe.

If you smell or see smoke, take these steps to protect your health:

- Minimize or stop outdoor activities, especially exercise.
- Stay indoors with windows and doors closed.
 - Do not run any fans that bring smoky outdoor air inside
 - Run your air-conditioner only if it does not bring in smoke from outdoors. Change the standard air-conditioner filter to a medium or high efficiency filter. If you have a wall-unit or window-unit air conditioner, set it to “re-circulate.”
 - Do not smoke, fry food, or do other things that will create indoor air pollution.
- If you have any chronic lung disease (including asthma) or heart disease, closely monitor your health and contact your doctor immediately if you have symptoms that worsen, including repeated coughing, shortness of breath or difficulty breathing, wheezing, chest tightness or pain, palpitations, nausea, unusual fatigue or lightheadedness. Consider going to an emergency shelter or leaving the area until smoke conditions improve.



If you do not have air conditioning, take these additional steps to protect yourself and your family from heat exhaustion, which can be especially dangerous for infants, children, the elderly, and people with chronic disease.

- Lower body temperatures by using cold compresses, misting, and taking cool showers, baths or sponge baths.
- Drink plenty of fluids. Don't wait until you're thirsty to drink. However, if your doctor has told you to limit the amount you drink or you are taking water pills, ask your doctor how much you should drink during the heat.
- Avoid drinks with alcohol or large amounts of sugar, as these can promote dehydration.
- Consider moving to location that has air conditioning.
- Do not exercise or do physical activity.
- Wear light-weight and light-colored clothing.
- Watch for signs of heat exhaustion, including fatigue, nausea, headache, and vomiting, and contact your doctor immediately if these occur.

Stayed tuned for additional air quality emergency announcements

Contact your doctor to discuss what you should do if smoke becomes worse in your area, especially if you have lung disease (including asthma), heart disease, are elderly, pregnant, or have children in your home.

For further information, please visit the Montana DEQ at www.todaysair.mt.gov

CDC Public Service Announcements

Wildfires and At-Risk Populations

This is an important message from the U. S. Department of Health and Human Services. Wildfire smoke's greatest health threat is to those with heart and lung conditions, older adults and children. Listen for advice from local authorities and limit your exposure to any smoke, including low levels. Keep your indoor air as clean as possible. If you have asthma or other lung conditions, follow your respiratory management plan. See a doctor if you have a hard time breathing or if your normal symptoms worsen.

General Information about Wildfires

This is an important message from the U. S. Department of Health and Human Services. Wildfire smoke can cause health problems for anyone, especially those with heart and lung conditions, older adults and children. Listen for advice from local authorities. Avoid burning candles, using gas stoves or vacuuming. Do not use dust masks as they will retain harmful particles. If you have asthma or other lung conditions, follow your respiratory management plan. See a doctor if you have a hard time breathing.

Coping With Depression and Thoughts of Suicide after a Disaster

This is an important message from the U.S. Department of Health and Human Services. After a natural disaster, it is normal to feel sad, mad, or guilty—you may have lost a great deal. If you feel like completely giving up or are having thoughts of suicide, get help. Stay in touch with family and friends, find a support network, and talk with a counselor. Getting involved with others can help. For more information, call 1-800-273-TALK (1-800-273-8255).

Find the CDC wildfire PSAs at, emergency.cdc.gov/disasters/wildfires/psa

Sample Press Releases

Sample Press Release #1

CONTACT: [Name]

[County] County Health Department

Phone [(XXX) XXX-XXXX]

Email [email address]

High Temperatures and Smoky Air Could Cause Health Problems

[City, State] – County public health officials urge people across the state to take precautions as temperatures and air quality reach potentially unhealthy levels.

The National Weather Service is predicting weather that could bring prolonged wildfire smoke exposure to communities in the [region affected] area. Smoke levels can rise and fall depending on weather factors including wind direction.

“The combination of high temperatures and wildfire smoke in the [affected] area may increase the risk of illness especially for older adults, young children, and people with asthma, respiratory, or heart conditions,” said [Health Officer, position].

Public health officials urge all Montanans to take the following precautions to avoid health problems during hot, smoky conditions.

- Reduce the amount of time spent outdoors. This can usually provide some protection, especially in a tightly closed, air-conditioned house in which the air conditioner can be set to re-circulate air instead of bringing in outdoor air.
- Reduce the amount of time engaged in vigorous outdoor physical activity. This can be an important and effective strategy to decrease exposure to inhaled air pollutants and minimize health risks during a smoke event.
- Reduce other sources of indoor air pollution such as burning cigarettes and candles; using gas, propane, and wood burning stoves and furnaces; cooking; and vacuuming.
- Individuals with heart disease or lung diseases such as asthma should follow their health care providers’ advice about prevention and treatment of symptoms.

For more information about your community’s air quality, visit www.todaysair.mt.gov. For air quality advisories from the Montana Department of Environmental Quality, visit www.todaysair.mt.gov.

Sample Press Release #2

CONTACT: [Name]

[County] County Health Department

Phone [(XXX) XXX-XXXX]

Email [email address]

Indoor Air Quality after the [Insert Name] Wildfire

[City, State] – With the immediate danger from the [insert name] wildfire behind us, county public health officials urge residents near the fire zone to take precautions as air quality levels could still be affected.

Residents can take the following steps to protect their health from potential indoor air quality issues during clean-up and re-occupancy.

- Stay inside. Limit outdoor time of children and pets. Do not let them play around burned structures.
- Keep windows and doors shut.
- Wet all ash and debris thoroughly before packing inside a 6mm plastic sheet liner.
- Clean and replace filters on air conditioning units and furnaces.
- Stay hydrated. Be aware of high heat if your home is not air conditioned.
- An N95 particulate mask can be worn to protect you from smoke and ash dust.

For information about your community's air quality: www.todaysair.mt.gov.

For air quality advisories from the Montana Department of Environmental Quality: www.todaysair.mt.gov

For tips on worker safety during fire clean-up: <http://emergency.cdc.gov/disasters/wildfires/cleanupworkers.asp>

Sample Press Release #3

CONTACT: [Name]

[County] County Health Department

Phone [(XXX) XXX-XXXX]

Email [email address]

Wildfire Smoke Inhalation Prevention Information

The (INSERT FIRE NAME) is burning (ENTER LOCATION), has grown to (ENTER SIZE) and is (XX) percent contained. Hot, dry, and unstable weather will likely result in heightened fire activity and increased smoke production. The estimated containment date is (ENTER DATE). (NAME) County health officials are providing the following information to help local residents proactively avoid illness from wildfire smoke inhalation. People with respiratory or heart disease, the elderly and children, are advised to stay indoors. Poor air quality conditions are a health threat and should be avoided by all residents in smoky communities. Remember, local smoke levels can rise and fall rapidly depending on weather factors, including wind direction.

Take the following precautions to avoid breathing problems or other symptoms from smoke:

- Be aware of smoke concentrations in your area.
- Avoid outdoor exertion during such conditions. Avoid strenuous outdoor activity including sports practice, work and recreation.
- Drink lots of water - staying hydrated can keep your airways moist which will help reduce symptoms of respiratory irritation such as scratchy throat, running nose and coughing.
- Try to avoid driving in smoky areas. If you do need to drive in these areas, keep your windows rolled up and vents closed. If you need air conditioning, make sure you set your system on “re-circulate” to avoid bringing smoke into your car.
- Avoid smoke by staying indoors, closing all windows and doors and use a filter in your heating/cooling system that removes very fine particulate matter.
- People with concerns about health issues, including those suffering from asthma or other respiratory problems, should follow their breathing management plans; keep medications on hand, and contact healthcare providers if necessary.

Helpful links:

[Centers for Disease Control and Prevention](#) fact sheet about the health threats from wildfire smoke

Today's Air- www.todaysair.mt.gov

Posters & Flyers

PM Levels and Your Health

Category	PM2.5 1hr Average Concentration ($\mu\text{g}/\text{m}^3$)	Visibility Range (miles)
Good	0.0-33.5	>13.4+
Moderate	33.6-51.0	13.3-8.8
Unhealthy for Sensitive Groups	51.1-88.5	8.7-5.1
Unhealthy	88.6-201.0	5.0-2.2
Very Unhealthy	201.1-338.5	2.1-1.3
Hazardous	>338.5	<1.3

Links to additional poster and flyers

- Recommendations during wildfire season for Outdoor Sporting Events based on visibility and air quality- deq.mt.gov/FireUpdates/docs/WildfireRecommendationsOutdoorSportingEvents.pdf
- CDC Wildfire Syndicated Content- <https://tools.cdc.gov/syndication/pages.aspx?topicId=28516>
 - *After the Fire: Your Emotional and Physical Well-Being*
 - *Fire Safety Fact Sheet*
 - *Wildfires: Information for Pregnant Women and Parents of Young Infants*
- Protect Your Lungs from Wildfire Smoke: California Department of Public Health- <http://www.bepreparedcalifornia.ca.gov/Documents/Protect%20Your%20Lungs%20Respirator.pdf>

Useful Tools & Resources

Montana Department of Environmental Quality:

MT DEQ home page— www.deq.mt.gov

Today's Air— www.todaysair.mt.gov

Wildfire Smoke updates— www.todaysair.mt.gov

National Institutes of Health:

Fires and Wildfires website— <http://sis.nlm.nih.gov/enviro/wildfires.html>

Environmental Protection Agency

Effects of Particulate Matter on Health- www.epa.gov/oar/particlepollution/health

National Resource Defense Council

New Report Shows Wildfire Smoke Poses Health Risk to Millions of Americans Many Miles from the Blazes- www.nrdc.org/media/2013/131024.asp

Pediatric Environmental Health Specialty Units, Association of Occupational and Environmental Clinics: Health Risks of Wildfires for Children

http://www.coeh.uci.edu/PEHSU/factsheets/wildfire_acute_health_prof_2011.pdf

National Association of School Psychologists

Helping Children after a Wildfire: Tips for Parents and Teachers

http://www.nasponline.org/resources/crisis_safety/wildfire_teachers.pdf

Center for Disease Control and Prevention

Emergency Preparedness and Response

<http://www.bt.cdc.gov/disasters/wildfires/>

Emergency Preparedness and Response: Wildfire Smoke

<http://emergency.cdc.gov/disasters/wildfires/smoke.asp>

National Interagency Fire Center

<http://www.nifc.gov>

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Compiled in collaboration with:
the Montana Department of Public Health and Human Services
ChronicDiseasePrevention@mt.gov
1-844-MTHLT4U (1-844-684-5848)
and
The Montana Department of Environmental Quality

This document is a work-in-progress. Comments and suggestions are
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