



Public Health Brief

Richard O. Johnson, M.D., MPH

Public Health Officer

Office: 530-694-2235, Ext 249

e-mail: rjohnson@alpinecountyca.gov

Nichole Williamson

HHS Director

Office: 530-694-2235

24/7/365 Emergency Contact Numbers

Dr. Johnson's cell: (760) 914-0496

Dispatch: 530-694-2231, Ext 330



Monday, August 6, 2018

It Just Got Worse!

After breathing smoke for the last few weeks, we all were hoping for a reprieve, but it just got worse. A new fire, called the Donnell Fire, started late last week along the Sonora Pass Highway 108, and has now spread into southwest Alpine County. We are now starting to experience not only smoke, but ash falling from the sky. Firefighters are exhausted, with extremely limited availability, and no air support. The weather continues to be hot and dry, with no relief in sight.

The only air quality monitor in Alpine County is near the Diamond Valley Elementary School. Here is the link:

https://tools.airfire.org/monitoring/v4/#!/simple?monitorid=lon_.119.808_lat_38.766_arb2.1041¢erlat=38.7905¢erlon=-119.7853&zoom=9&category=PM2.5_nowcastf

The last reading at 8 AM this morning showed a level of 353 ug/cubic meter. **THIS IS HAZARDOUS – EVERYONE SHOULD AVOID THE OUTDOORS AND ANY OUTDOOR ACTIVITY!!** For those of that do not have access to a monitor in your area, this is equivalent to visibility of < 1 mile.

I fully expect that these conditions will be around for a while, so this will require some lifestyle changes for those of you who like to do aerobic activity outdoors. Take a breather (no pun intended!). Find a gym or indoor pool during this time to maintain your health. Soaking in an outdoor pool or jacuzzi should be acceptable – no laps! Drink plenty of fluids (water or other unsweetened beverage, non-alcoholic), and check with your healthcare provider if you begin to have symptoms of weakness, lightheadedness, or breathing difficulty.

The responsibility for making the right decisions is in your hands!



Public Health

Prevent. Promote. Protect.

Alpine County Health Department, 75-B Diamond Valley Rd., Markleeville, CA 96120

Alpine County Board of Supervisors, Phone: (530) 694-2281

District 1: Donald M. Jardine, District 2: Ron Hames, District 3: Katherine Rakow,

District 4: Terry Woodrow, District 5: David Griffith

Other helpful web sites:

Blue Sky runs (be sure to go to “Select”, and “Use latest”:

<https://tools.airfire.org/websky/v1/run/standard/CANSAC-2km/2018070300/#viewer>

Incident Information System: <https://inciweb.nwccg.gov/>

Advice for workers: Given the current conditions, restrict outdoor activities to those that are essential for public safety, and are not aerobic in nature. Routine scheduled outdoor work should be temporarily suspended. Catch up on your paperwork, etc., and stay indoors as much as possible.

For anyone wanting more information, keep reading!

Living with Smoke

First the Lion Fire, now Ferguson and others—wildfires are burning all over the West again and smoke pollution is becoming part of our lives. The purpose of this communication is to share information on smoke pollution, focusing on health concerns, understanding air quality and approaches to reducing exposure.

Health effects

People react differently to smoke exposure—some people are more sensitive than others. Wildfire smoke contains a lot of stuff, gases and particles, depending on what is burning and how far away the fire is.

From a community health perspective, very small airborne particles (particulate pollution) are most important. Small particles are inhaled deep into the lungs where they may cause inflammation. Particle pollution also often causes local irritation of eyes and throat.

When there is smoke pollution some people will experience lung symptoms such as cough, wheezing and shortness of breath, especially people with asthma, COPD or other lung conditions. Such people may have a significant decrease in lung function and may be more susceptible to pneumonia other respiratory infections.



Public Health
Prevent. Promote. Protect.

Alpine County Health Department, 75-B Diamond Valley Rd., Markleeville, CA 96120
Alpine County Board of Supervisors, Phone: (530) 694-2281
District 1: Donald M. Jardine, District 2: Ron Hames, District 3: Katherine Rakow,
District 4: Terry Woodrow, District 5: David Griffith

This kind of pollution also increases the chance of heart problems acutely, and people with existing heart disease or risk factors for it are the most likely to be affected. Some studies, but not all, have shown that smoke exposure increases death rates, again with deaths clustered among vulnerable people with lung and/or heart disease.

Children are considered vulnerable because their lungs are immature and bigger for their body size compared to adults. Child hospital admissions reportedly increase when wildfire smoke incidents occur.

Pregnant women are also considered vulnerable based on the known risks associated with other types of particulate pollution, such as a higher chance of a low birthweight baby.

To put it in perspective, however, Mono County has not seen increases in Emergency Room visits or hospitalizations during past smoke pollution periods in our area.

Whether on-and-off smoke exposure increases our long-term risks of heart disease or cancer is unclear. Short term infrequent exposures probably do not have much effect, but long-term exposure to particulate pollution, such as urban smog, is a risk factor for getting heart disease.

In terms of cancer, we know that some firefighters have higher rates of lung cancer compared to other people, but it would probably take a great deal of exposure to wildfire smoke for non-firefighters to have an increased cancer risk.

Keeping track of wildfire smoke conditions

You can tell when there is smoke in the area but the intensity, the concentration, of the smoke changes constantly with wind and weather, and that may be important information for planning activities.

The Great Basin Unified Air Pollution Control District (GBUAPCD) continually monitors air quality in numerous locations in Mono and Inyo and Alpine County and posts air quality data on their website in real time. <https://gbuapcd.org>

GBUAPCD posts particle pollution measurements, typically in two categories of particle size (corresponding to different types of air monitors). The smallest particles, less than 2.5 microns, are reported as PM_{2.5}, which is considered the best measurement of wildfire smoke concentration. The concentration of particles less than 10 micrometers (PM₁₀) is also considered a valid indicator of wildfire smoke pollution. Locally, when either PM_{2.5} or PM₁₀ levels exceed 100 a Stage 1 Health Advisory is issued, a recommendation that vulnerable people avoid strenuous outdoor activity. When particle concentrations are over 200, a Stage 2 Health Advisory is issued, recommending that everyone avoid strenuous outdoor activity and that vulnerable people stay indoors as much as possible.



Public Health
Prevent. Promote. Protect.

Alpine County Health Department, 75-B Diamond Valley Rd., Markleeville, CA 96120
Alpine County Board of Supervisors, Phone: (530) 694-2281
District 1: Donald M. Jardine, District 2: Ron Hames, District 3: Katherine Rakow,
District 4: Terry Woodrow, District 5: David Griffith

Other websites, such as the federal government's AirNow, provide current air quality information in terms of the Air Quality Index, or AQI, a nationally standardized system for pollution reporting that some people may be more familiar with. (https://www.airnow.gov/index.cfm?action=airnow.local_city&mapcenter=0&cityid=659) It can be challenging to accurately predict changes in smoke conditions, but the U.S. Forest Service has a useful site that provides a 72-hour forecast of wildfire smoke conditions:

<https://haze.airfire.org/websky/v1/run/standard/CANSAC-2km/current/#viewer>

Strenuous exercise increases exposure

Exercise greatly increases our body's exposure to air pollution because there is much more air, and pollution, going in and out of our lungs. It therefore increases the risk of harmful effects.

Masks

Dust masks and surgical masks do not reduce our exposure to particulate pollution. N95 or N100 masks, technically called respirators, can greatly reduce inhalation of smoke particles if they fit properly, which means tightly. Leaky masks do not provide much protection. Properly fitting N95s are a bit hard to breathe through and may not be practical for use over many hours or days. They may also be hard for vulnerable people, such as elderly and people with lung disease, to tolerate.

We do not recommend that the public attempt to use any mask or respirator. The risks are greater than the potential benefits. The best and safest decision you can make is to stay indoors as much as possible. We are not distributing them for general population use. If you must use one in an occupational setting, you must be medically screened and fit tested within the last year prior to use. The state health department website has information about N95 masks:

[https://www.cdph.ca.gov/Documents/Use%20of%20Particulate%20Respirators%20\(Masks\)%20to%20Protect%20from%20Wildfire%20Smoke%20or%20Ash.pdf](https://www.cdph.ca.gov/Documents/Use%20of%20Particulate%20Respirators%20(Masks)%20to%20Protect%20from%20Wildfire%20Smoke%20or%20Ash.pdf).

Indoor air quality

- When smoke levels reach potentially unhealthy levels we recommend that people stay indoors as much as possible, with windows and doors closed, swamp coolers off and air conditioners on "Recirculate" (if they have that function). In hot climates that may feel like being between a rock and a hard place – balancing the possible harm from smoke against that of heat.
- Note that in a leaky, drafty building the indoor air quality will not be much different than the air outside.



Public Health
Prevent. Promote. Protect.

Alpine County Health Department, 75-B Diamond Valley Rd., Markleeville, CA 96120
Alpine County Board of Supervisors, Phone: (530) 694-2281
District 1: Donald M. Jardine, District 2: Ron Hames, District 3: Katherine Rakow,
District 4: Terry Woodrow, District 5: David Griffith

- Indoor activities that generate particulate pollution such as smoking, vacuuming (unless your vacuum cleaner has a HEPA filter), and certain types of cooking (broiling and frying) are not recommended when the air is already unhealthy.
- Indoor air cleaners or filters can remove smoke particles and improve home air quality. The most effective are filtering systems installed in the central ductwork of homes. There are also smaller portable cleaners that can effectively clean indoor air, if their capacity is appropriately matched to the size of the indoor area. The California Air Resources Board has valuable information about indoor air cleaners and maintains a list of approved products <https://www.arb.ca.gov/research/indoor/aircleaners/consumers.htm>
- Some experts recommend having a “cleaner air room” in the home, which can be shut tightly and with no particle generating activities. Such a room might be the best place for an appropriate portable air cleaner.
- Air cleaners which generate ozone are not recommended.

Vehicles should be used for transportation, not shelter from smoke. Recent model vehicles tend to have air filters that do a decent job of removing particulate pollution if set to recirculate with doors and windows closed.

But in summer rising temperatures and carbon dioxide levels inside the car may limit the feasibility of using recirculation for long. Because carbon dioxide levels can rise quite quickly on recirculation it is advisable to periodically open windows.

Consider travel to unaffected areas

Smoke-sensitive people who are unable to sufficiently reduce their smoke exposure at home may consider leaving the area during major smoke incidents, if it is feasible and assuming there are places with better air.

However, severely smoky conditions may make travel more dangerous and benefits should be weighed against risks.



Public Health
Prevent. Promote. Protect.

Alpine County Health Department, 75-B Diamond Valley Rd., Markleeville, CA 96120
Alpine County Board of Supervisors, Phone: (530) 694-2281
District 1: Donald M. Jardine, District 2: Ron Hames, District 3: Katherine Rakow,
District 4: Terry Woodrow, District 5: David Griffith