## **SMOKE:** Take care of yourself and stay informed

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the fresh-air intake closed, said the CDC. People who would normally let nature cool off their houses should keep windows and doors shut according to Gleim. A do-it-yourself box fan filter can be helpful, though she warns "you don't want to put it in your window because then you're bringing smoky air in from outside" (instructions in sidebar). Air quality tends to be worst in the evening.

"The primary pollutant of concern in any kind of wild-fire smoke is very tiny particles that scientists call PM 2.5," which is particulate matter smaller than 2.5 micrometers — that's 30 times smaller

than the width of a hair off your head," said Gleim. "It's very, very tiny and so when we inhale it it goes deep down into our lungs" and can cause inflammation, shortness of breath and coughing, as well as exacerbate heart and lung conditions.

"We've been trying to stress to people that cloth and paper masks that people have been wearing to prevent the spread of COVID-19 do not protect you from the harmful particles in wildfire smoke. Those particles are just too small and go right through that mask."

Though heavy-duty N95 masks can be effective against ambient smoke inhalation, they come with their own challenges and may be in short supply due to use by frontline workers during the pandemic. Unlike their cloth counterparts, N95s can be

problematic for people who already have breathing issues. Since they are designed to create a seal around the face, they should not be used by children or over facial hair. Also, N95s with a plastic vent will not contain the wearer's germs from others, according the Food and Drug Administration.

"When we're breathing air in our homes and our businesses that has high levels of these smoke particulates, I think the most important thing for your health is... eating well, drinking lots of water and upping your supplements," said Jinny Reed, a retired assistant fire management officer with the Sisters Ranger District.

"Every individual has access to real-time data" on the internet, Reed said. She recommends people regularly check smoke outlooks and

forecasts so they "can make informed decisions about what they're going to do today, tomorrow, and sometimes in the future." (Links to resources are available at the end of the story below.)

Currently "there is no clean air between Canada and Mexico in the Pacific states," said Reed. "If you have a health condition, maybe... you need to go visit family far away and wait it out."

A dramatic shift in the winds last week led to unusual easterly winds that blew wildfire smoke in the west away from Sisters but was part of the same windstorm that fueled the fires, according to Reed.

"It's hard to pinpoint where smoke is coming from because we have a bunch of those big fires burning up and down the western side of the state," said Gleim, who is based in Bend. The Lionshead fire around Mt. Jefferson and the enormous fires on the other side of the Cascades are likely the biggest contributors to the poor air quality in Sisters, Gleim said.

"Those fires in the uplands, they're going to continue to burn and emit emissions until it rains or snows," said Reed. "A season-ending event where it actually rains a quarter-inch or a half-inch doesn't typically occur until [mid-to-late] October."

"Your best line of defense is your personal health," Reed said. "Do what you can to take care of yourself and stay informed."

### Seeking DIY relief from smoky conditions

Indoor air cleaners filter smoke particles out of the air. You can do this by attaching a furnace filter on a box fan so that the fan surface is completely covered by the filter. One example would be a 20-inch by 20-inch box fan with a 20-inch by 20-inch furnace filter attached to it. You can attach the filter firmly to the fan using tape, a bungee cord, or another method. Make sure to attach the filter so that the arrow on the filter points in the direction of the air generated by the fan.

Here are important tips for proper filtration and safety:

- 1. For good filtration, you need a furnace filter that is HEPA or rated MERV-13 or higher. These filters remove more particles from the air than lower-rated ones. Filters with lower ratings offer inadequate protection from smoke.
- 2. Filters three to five inches thick will last longer than thinner ones. They have more surface area and will trap more particles with time. Change the filter as the manufacturer recommends or when visibly dirty.
- 3. A filter can put strain on the fan motor and could cause the motor to overheat or catch fire. Therefore, it is

very important to turn the fan off if you leave the house. To limit possible hazards, you should:

- Turn off and unplug the fan and contact the retailer or manufacturer if you notice a burning smell or unusual noises. *Do not* continue using the fan with or without the filter.
- Make sure to change filters as the manufacture recommends or when visibly dirty to limit strain on the fan motor.
- Do not balance the fan on the edge of the counter, or anywhere that it could fall.
- Prevent children and pets from chewing on or pulling the fan cable.
- Always unplug the fan from the socket when not in use.
- Ensure that you have functioning fire and smoke alarms installed in your home. The National Fire Protection Association provides recommendations on where to place fire and smoke alarms (https://www.nfpa.org/smokealarms).

The Confederated Tribes of the Colville Reservation Air Quality Program attached two filters to the fan in a triangular manner, which reduces the load on the fan motor. You might consider this setup as well.

Links

Triangular box fan filtration system video instructions: https://www.cct-enr. com/box-fan-filter.

OregonAir mobile app (free air quality index tracking): available at your mobile app store.

Oregon Smoke blog (coordination between local, state, tribal and federal organizations about wildfire smoke affecting Oregon communities): oregonsmoke. blogspot.com

Interagency Wildland Fire Air Quality Response Program (detailed maps, charts and forecasts for the US): https://sites.google.com/firenet.gov/wfaqrp-external/home.

#### SUDOKU SOLUTION

for puzzle on page 27

| 8 | 9 | 1 | 3 | 7 | 5 | 4 | 2 | 6 |
|---|---|---|---|---|---|---|---|---|
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| 3 | 7 | 6 | 2 | 1 | 4 | 9 | 5 | 8 |
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| 5 | 1 | 9 | 4 | 2 | 8 | 6 | 7 | 3 |
| 9 | 3 | 5 | 6 | 4 | 2 | 8 | 1 | 7 |
| 1 | 6 | 7 | 9 | 8 | 3 | 2 | 4 | 5 |
| 4 | 8 | 2 | 7 | 5 | 1 | 3 | 6 | 9 |

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