

How to survive the smoke from wildfires



What to do when you have MCS or respiratory sensitivities and there is smoke in the air from a forest fire.

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Forest fires are a global problem that affects large areas in the American West, eastern Australia, and many areas of Asia, Africa and South America. It can be large fires that burn out of control for weeks and months, or controlled burns that only burn for a couple of days.

Even hundreds of miles away the smoke can be a problem for sensitive people when downwind from the fire. At night the air may become still so the smoke travels in all directions and lingers.

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If it is a really big fire, or it is nearby, the smoke can be so dense that vehicles must drive with their headlights on even on a sunny day (sunny above the smoke). In that situation it is hazardous to be outside even for young healthy people. People with environmental sensitivities may be affected even if the visibility is ten miles (16 kilometers) and healthy people barely notice the weak smell of smoke in the air.



Wildfires are a danger all over the American West and many other places with dry seasons.

Be prepared

It is easier to get through a period of smoke if prepared in advance. Preparations may simply be to keep a few things on hand in case they are needed. We recommend:

- Masking tape/painter's tape
- Aluminum tape
- Mask/respirator
- Air filter

These items will be discussed further later on.

Weatherstripping

Weatherstripping means permanently tightening the home so there is less air leakage through cracks in the outer walls, especially:

- Around doors
- Around windows
- Around patio doors
- Electrical outlets
- Around water pipes
- Recessed ceiling lights

Various types of gaskets and strips to weatherize a home should be available at any hardware store. They tend to be rather benign right out of the box and can be further offgassed in a few days.

To fill in large cracks, look for aquarium caulk and expanding foam in a spray can (such as diisocyanate and polyurethane polymer foams). These are all quite toxic for a few days and then become inert. The more common 100% silicone caulk takes weeks to become inert.

Weatherstripping is best done when there is no crisis, so the materials can be offgassed and windows kept open if needed. Since it saves on the cost of heating and cooling the home there are good reasons to do it sooner than later.

Temporary sealing of the home

A house or apartment can be sealed temporarily for a few days. This can be done with masking tape/painter's tape that covers slits around doors, windows and other places the smoke can enter. American-style sliding windows tend to be leaky where the two parts meet, which can be covered with tape. Euro-style casement windows are inherently tighter.



Masking tape can temporarily seal cracks.

Masking tape is designed to be removable without destroying the paint or leaving a residue, and it has little odor. Don't leave it on for more than a few days, since then it might leave a residue.

Keep a couple of wide rolls on hand. They should be stored in a sealed plastic bag since the weak adhesive tends to dry out and no longer work after some time. Look for a type that is NOT marked "high adhesion," as they may leave more of a residue, or damage the paint.

Larger areas can be covered with aluminum foil that is held in place with tape. Aluminum tape may be needed here, since it is stronger, but be aware that it also tends to leave a glue residue.

Sometimes it may work best to cover the entire window with a sheet that is taped to the frame all around the window.



Masking tape sealing the gap between two window panes that slides horizontally.

Exterior doors can also be taped up, but then they can't really be opened. A rolled-up towel can seal the crack under the door.

Keep interior doors closed

Keep all the interior doors closed as much as possible. This increases the resistance for air to pass through the house. It also limits the amount of smoke that gets inside when a door to the outside is briefly opened.

Create a safe room

It may make sense to focus on creating one room that is the safest. It can be the living room, a bedroom, a basement room or even a bathroom. Whatever makes best sense. You should be able to sleep in this room somehow.

Create an airlock

If the house has more than one outside door, choose the one that will let the least smoke inside.

It is best to have two doors between the outside and where you spend the most time. This will reduce the amount of smoke entering the house when going outside. Make it a rule that only one door is open at a time. Place an aircleaner inside the airlock.

Aircleaners

Aircleaners can help reduce the smoke inside the house, especially after an outside door has been opened.

You may want to place an aircleaner next to the outside door. That way it can work on the smoke coming in when the door is opened.

Some people with electrical sensitivities or noise sensitivities have problems using aircleaners. Consider if a large aircleaner of good quality can be run for just five minutes. Even for such a short time it can help quite a bit if smoke has entered the house.

We use two Aireox airfilters during smoke season. They each have several pounds of coconut charcoal, which traps soot particles and the gases they release.



Aireox air filter with charcoal.

We have not tested a particulate filter without carbon, but expect that it won't work well since the trapped soot particles can release fumes that pass through the filter.

An air filter can only clean the air in one room. You may need more than one. Most of the filters seen in stores are simply too puny to be of much help. You get what you pay for.

Masks and respirators

When leaving the home, a filtering mask can help. Even a simple dust mask or a scarf can help. A wet scarf is better. Consider looking for higher-rated masks. In the United States look for masks labeled "N-95" or "P-100."

Some respirators can be equipped with dust filters instead of a vapor filter. Some even offer dust filters that can be mounted on top of a vapor cartridge, but those are harder to breathe through.

Car filters

Some cars come with built-in filter systems. We don't know how effective they are. You may want to replace the filter cartridge after a big smoke incident.

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There are several 12 volt air filters available for cars. They plug into the cigarette outlet and can sit on a vacant seat.

Most of these filters are too small for a smoke-sensitive person. They need to have carbon cartridges to absorb the smoke particles and the gases. More effective models are available from E.L. Foust and Aireox. We like the Aireox best as it has lower EMF emissions than the E.L. Foust model, but both does the job.



12 volt air filter from E.L. Foust strapped into a back seat

Evacuating

If the smoke gets too strong, or the fire gets so close it poses a danger, you may have to evacuate.

The Red Cross may operate a public shelter, but they are ill equipped to accommodate people with MCS. Their shelters are usually in a sports facility, such as in a school. People sleep on cots in a large room, showers are shared, there will be constant personal care product pollution. Electronic gadgets are everywhere. Food restrictions cannot be accommodated.

What people with MCS or EHS have done when they needed to evacuate was either to stay with other people or to go camping. Camping can be as simple as sleeping in a car at a campground or in someone's driveway. One person who is severely smoke sensitive lives in an area that gets hit with smoke most years. When there is a smoke problem he goes camping at least 100 miles (160 km) away. He used to sleep in his van, now he has a small camper he detoxed.

Cleanup afterwards

Smoke particles will enter the home and land on floors and horizontal surfaces, attach themselves to walls, etc. When the outside air becomes clean again, the inside can smell of smoke afterwards as these smoke particles offgas.

To get rid of the smoke particles, use a duster or a cloth to wipe the walls. A damp cloth works better.

Then clean the horizontal surfaces.

Finally, clean the floors. If using a vacuum cleaner, make sure the windows are open as that can put a lot of smoke particles into the air. A HEPA filtering vacuum cleaner is better. Floors that are not carpeted can be washed instead.

If the house has been exposed to heavy smoke, there may be smoke particles trapped inside wall cavities. There really isn't much to do about that, except to wait for them to offgas.

There are companies that do smoke remediation after house fires. They use powerful ozone machines. Some rent these machines out to home owners. Be very very careful with ozone machines. Don't breathe in the ozone. Ozone treatments can make a house unlivable, people with MCS have literally had to sell their home after treating it too much with ozone.

If you have to ozone, do it a little at a time, air it out, then repeat.

Ozone does not penetrate into wall cavities or into porous materials, so it won't help there.

More information

Other articles on how to live with severe environmental sensitivities are available on <http://www.eiwellspring.org>.

