



Potential Health Risks After Fires Report

There are several reactions that people can have after a big fire. People might experience health symptoms from smoke, heat, fire, and odors associated with the fire, even when visible smoke may not be present. People near the fire should follow the advice of first responders. In some cases, evacuation is announced, and they will be given instructions on where to go during the event, or, people may be advised to "shelter in place". Whatever the case, people should also take actions to reduce their exposure to smoke. For example, during a fire, the doors and windows of nearby residences and other buildings should remain closed to prevent smoke from entering, and air conditioners should be turned off, and after a fire is completely extinguished, buildings/homes affected by smoke should be ventilated with fresh air to reduce odors. This may be a slow process depending on how much of the building was affected by smoke.

The health risks of chemicals present (in the fires or in the residues), depend on several factors, including the intrinsic characteristics of substances, as well as the extent and the duration of exposure. Even, some substances can't be identified by regular monitoring methods.

It is important to know that some people are more at risk due to their "**individual susceptibility**". Accordingly, it's especially important to pay attention to local air quality reports during/after a fire if you belong to one of these groups: children, elderly, pregnant women or suffer from pre-existent health conditions, such as heart or lung disease, diabetes, etc.

It is fundamental to prevent adverse effects during/after a fire, trying to stay indoors with windows and doors closed, reduce physical activity, reduce other sources of indoor air pollution such as smoking cigarettes, using a wood-burning stove or frying meat, etc.

Unfortunately, smoke emissions can have wider impacts outside the immediate fire area. Big fires threaten lives directly, and the produced smoke can affect us all. They spread air pollution not only nearby, but thousands of miles away -causing breathing difficulties in even healthy individuals. While not everyone has the same sensitivity to fire's smoke, it's still a good idea to avoid breathing that contaminated air if you can help it. And when smoke is heavy (near the fire for example), it's bad for everyone.

Prevention of adverse health effects is the clue, as the societal burden of fires is calculated in terms of incidence and cost of visits to emergency departments, hospital admissions, loss of productivity, school absences and other similar outcomes.

It's important to limit the exposure to smoke, especially if you are at increased risk for particle-related effects. It is common to cough for a few minutes after breathing in smoke or fumes from a fire, however, commonly, your breathing should return to normal within a short period of time, about 30 minutes.

When there are considerable amounts of soot as a residue, it should be removed. It is appropriate to vacuum the damaged area, lightly brushing to remove it. Additionally, use a special dry-cleaning sponge (chemical sponge) to wipe the soot. This is a very important first step, as wiping with soot cleaner or water first, can spread the soot and make it impossible to remove with a chemical sponge.

Harris County Pollution Control

Established in 1953

Harris County Pollution Control Services

Dr. Latrice Babin, Director



Social media, TV news, journalists, etc., can influence what is called the “perception of risk” of the people to the real effects that they can face. It is a fact that health risk communication strategies affect behavior during smoke episodes, which can increase the negative outcomes of the incident. Social networks can be very useful; however, health risk perception can be manipulated by providing positively and negatively biased information regarding dangerous exposures to chemicals. Studies have shown that higher distressed groups, compared with low distressed groups, rated threatening exposures as significantly more unpleasant with greater number and type of signs/symptoms.

There are different attitudes towards the exposure to hazardous chemicals present in fires. One important factor to consider is the significant gaps in knowledge and scarce preparedness of the general population, related to safety processes to prevent and contain risks related to the exposure to toxic chemical compounds in emergency situations. That’s the reason why, education of the communities should be always performed, to assess their awareness and perceptions regarding chemical hazards involved in an emergency. A wrong, alarming, safety perception in the communities, should be avoided.

A higher, right perception of risk is related to a greater likelihood of behaving safely, in consequence, the investigation on “perceptions of risk” is very useful to predict behavior. Undoubtedly, in the assessment of perception of risk related to exposure to highly toxic chemicals, the same hazard may be considered at low risk if all safety organizational and personal precautions are adopted, and at high risk, if no safety precautions are adopted. Consequently, ambiguous statements on risk perception may be related to apparently contradicting results on the association between risk perception and safe behavior. For example, how people perceive the health risk of a chemical exposure and self-reported distress, are related to **perceived odor intensity**, signs, and symptoms, etc.

Frequently, some individuals assess risks by means of both, sensory and empirical diagnosis and are concerned about the long-term health consequences, which is legitimate. The limitation is that people' perceptions with respect to health and safety in emergencies, are rarely considered when considering the development of prevention programs in specific communities, including **communication and education skills**.