



ALLEGHENY COUNTY HEALTH DEPARTMENT

THE HEALTH EFFECTS OF WOOD SMOKE

Wood smoke contains numerous pollutants, including air toxics. These pollutants have a negative impact on our region's air quality and can cause serious health effects in sensitive populations. Wood stoves, fireplaces and outdoor firepits are all sources of air pollution that can negatively impact a neighbor's or family member's health.



HIDDEN POLLUTION



Allegheny County does not currently meet the federal air quality standards for fine particulate pollution, as measured annually. Fine particulate pollution, or PM2.5, can come from a variety of sources: power plants, industrial plants, motor vehicle traffic and even a backyard fire pit.

Wood smoke contains numerous air toxics, and contributes to high levels of regional air pollution. While for some, bonfires and campfires have never posed a problem, many people may experience increased asthma symptoms, breathing difficulty and other health effects when they are exposed to wood smoke.

With the numerous hills and valleys in Allegheny County, wood smoke can become trapped near the ground, smoking out entire neighborhoods, or it can be carried across a hilly backyard and directly into a neighbor's bedroom.

Most of us are familiar with what happens when you get caught downwind of a campfire—your eyes water, you begin to cough, it's hard to breathe—so it should come as no surprise that even the smallest backyard bonfire might affect your family and your neighbors.



CARBON
MONOXIDE
METHANE
BENZENE
FORMALDEHYDE
TOLUENE
NITROGEN
DIOXIDE
SULFUR
DIOXIDE
NAPHTHALENE
PROPIONALDEHYDE
ACETALDEHYDE
FURFURAL
FORMIC ACID
GUAIACOL PHENOL
SYRINGOL CATECHOL
PHENANTHRENE
ANTHRACENE
HYLANTHRACENES
BENZO(E)PYRENE
BENZO(A)PYRENE



POLLUTANTS IN WOOD SMOKE

Wood smoke contains numerous pollutants. Some are on EPA's list of six common pollutants, also known as criteria pollutants, like carbon monoxide, fine particulate pollution and sulfur dioxide.

Wood smoke also contains numerous air toxics. Air toxics, also known as hazardous air pollutants, are pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects.

Concentrations of air toxics and other emissions in wood smoke vary depending on the wood burned and the temperature at which it is burned.

An example of some of the pollutants in wood smoke are listed to the left.

The only way to completely minimize your risk of exposure to these pollutants is to refrain from burning entirely.

List of emissions from Summary of the Emissions Characterization and Noncancer Respiratory Effects of Wood Smoke, Timothy V. Larson & Jane Q.Koenig, From Table 2, PA-453/R-93-036, 46p. (US EPA December 1993)

HEALTH EFFECTS OF WOOD SMOKE



The effects of wood smoke can vary depending on the person. Even if you have never experienced a negative side effect, your family members and neighbors may.

Fine particulate pollution is a primary component of wood smoke. Numerous scientific studies have linked fine particulate pollution with decreased lung function, aggravated asthma, irregular heartbeat, nonfatal heart attacks and premature death in people with heart or lung disease.

Short-term exposure to particles (hours/days) can aggravate lung disease, causing asthma attacks and acute bronchitis and may increase susceptibility to respiratory infections.

If you have heart or lung disease, such as congestive heart failure, angina, chronic obstructive pulmonary disease, emphysema or asthma, you may experience health effects earlier and at lower smoke levels than healthy people.

Children also are more susceptible to smoke for several reasons: their respiratory systems are still developing, they breathe more air (and air pollution) per pound of body weight than adults and they're more likely to be active outdoors.

Even if you aren't a member of a sensitive population, wood smoke can cause coughs, headaches, eye/throat irritation and illness such as bronchitis in otherwise healthy people.

ACHD operates a 24-hour complaint line. All air pollution related complaints—not just about wood smoke—can be reported. Complaints will be investigated by ACHD staff, and violations can be issued when necessary.



**ACHD COMPLAINT LINE:
412-687-2243**

More information on open burning and the Air Quality Program can be found online at:

burnfactsalleggheny.info



ALLEGHENY COUNTY HEALTH DEPARTMENT - Air Quality Program

301 39th Street Building #7 • Pittsburgh, PA 15201-1811

PHONE: (412) 578-8103 • FAX: (412) 578-8144