

## Wood-Burning Fireplaces & Air Pollution

Wood-burning fireplaces are becoming more popular. There's something romantic and relaxing about sitting near a fireplace, hearing the crackle of the wood, and gazing at the flickering flames. And with soaring fossil fuel prices, many people believe that it's less expensive to burn wood for heat during the winter. But research shows that central heating is typically the most efficient and cheapest way to heat. Many people also think that burning wood is better for the environment since wood is a renewable resource; however, according to the Environmental Protection Agency (EPA), wood burning is not environmentally friendly. In fact, wood results in high levels of air pollution that can harm the environment and your health.

"The largest single source of outdoor fine particles entering into our homes in many American cities is our neighbor's fireplace or wood stove," says Dr. Wayne Ott of Stanford University.

Wood smoke contains many of the same chemicals as cigarette smoke, including carbon monoxide, nitrogen oxide, hazardous metals, and known carcinogens such as formaldehyde, dioxin, benzene, and toluene. Inhaling wood smoke appears to be even more dangerous than inhaling tobacco smoke. An EPA study concluded that breathing wood smoke particles during high pollution days is equivalent to smoking 4 to 16 cigarettes. Medical studies have linked air pollution with lung cancer, heart attacks, strokes, high blood pressure, congenital heart defects, asthma, and even brain damage. People most at-risk for damage from air pollution include asthma sufferers, diabetics, those with congenital heart failure, and children.

Dr. Ramirez-Venegas of the UK explains, "Biomass [wood] smoke is composed of a relatively equal mixture of coarse and ultra-fine particles and can penetrate deeply into the lung, producing a variety of morphologic and biochemical changes."

"Mammalian lungs don't have defenses against small particles," points out Joel Schwartz of the EPA. "Particulate pollution is the most important contaminant in our air... We know that when particle levels go up, people die."

Of course, it's best to avoid burning wood (for the benefit of your family, your neighbors, and the environment), but if you must, you can take steps to limit your exposure to the air pollution. Make sure your fireplace is working properly with a sufficient draft. Tightly sealed doors in front of the fireplace block out much pollution. Don't burn trash or treated wood, and make sure your wood has been split and dried for at least six months. Use small pieces of wood. Small, hot fires give off less pollution than smoldering fires.

Many air purifiers are specifically designed to handle the air pollution from smoke. Blueair air purifiers are available with SmokeStop Filters. The AllerAir 5000 DS air purifier is designed to absorb smoke, tar, fine ash, and other airborne particulates, and the IQAir Multigas air purifier removes a wide spectrum of gases and particulates, including smoke. If you want to get rid of the odor from smoke, try the Gonzo Smoke Odor Eliminator.

For more information about the medical hazards of wood smoke, visit Burning Issues, a non-profit research and educational organization.

### About the Author

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