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Fireplaces, Woodstoves, and Clean Air in Pima County

Wood burning is of concern in our community because it is not healthy to breathe wood smoke. Smoke is made up of a complex mixture of gases and fine particles produced when wood burns. According to 2002 estimates, there are approximately 70,000 households that burn wood in fireplaces or wood burning stoves within Pima County. The wood burned by these devices emits about 3,100 tons of carbon monoxide (CO) and particulate matter (PM) into our skies annually, in addition to other pollutants and potentially cancer-causing materials. These microscopic particles in wood smoke can be inhaled deep into the respiratory system where they may cause serious health impacts.

The combination of altitude, topography, longer nights and cool winters adds to the wood smoke pollution problem in Pima County. On cold nights with little wind, layers of warm air above trap cold air in the valley, forming an inversion. This inversion layer acts like a blanket and keeps smoke and other pollutants close to the ground. These stagnant conditions can last for days and impact the health of our neighbors.

Check with your neighbor to see if your fireplace smoke is causing problems with their health. Together, we can spare the air of these harmful pollutants by choosing not to use our fireplaces as much, or by making small changes in our wood-burning practices.

Wood Burning Tips



- ◆ Use firewood that has been dried for longer than six months. Keep wood dry with a loose tarp or in a small shed.
- ◆ Burn hardwoods like mesquite, oak, maple, beech, ash, and hickory. They burn more cleanly than softwoods such as fir and pine.
- ◆ Build small fires (three logs maximum) and split the logs to burn hotter and cleaner.
- ◆ Have chimney cleaned before each fireplace season.
- ◆ Never burn treated wood (colored green), plywood, particle board, oriented strand board (OSB) or painted wood.
- ◆ Never burn trash or products with glue or chemicals.
- ◆ Use store-bought fire logs. They burn cleaner than firewood.
- ◆ Create draft conditions necessary to maintain combustion and reduce smoke.
- ◆ Convert from wood-burning to electric or gas fireplace or heater.

Wood Burning Alternatives

A conventional wood-burning fireplace is an inefficient and often unhealthy method of heating and can actually remove more heat from a house than it produces. The U.S. Environmental Protection Agency (EPA) has approved several alternative wood-burning devices to be used in place of a conventional fireplace.

Wood Pellet Stove



This stove provides heat while at the same time lowering harmful emissions. Instead of logs, small pellets made of compressed recycled wood by-products provide fuel. This type of stove will provide warmth for 2,550 square feet.

EPA Certified Wood-Burning Stove

These stoves are designed to burn fuel efficiently, while saving money and reducing harmful pollutants.

Fireplace Inserts

A variety of inserts include electric logs that work like space heaters but have a tinsel-type material that vaguely resembles fire. Gas log inserts are highly efficient; approximately 80% of the heat they generate goes back into the home.



U.S. EPA Certificate

When buying a stove or insert, make sure it has an US EPA certificate showing its efficiency rating and how many grams of particulates it emits. Compare different stoves or fireplace inserts while evaluating your needs and the pollution levels in your neighborhood.

Potential Health Effects of Wood Smoke



According to the American Lung Association, running in a polluted urban area for 30 minutes produces as much carbon monoxide in the blood as smoking about a pack of cigarettes a day.

A fire that is burning properly produces little or no smoke from the chimney. If you see a lot of smoke coming from a chimney, that's air pollution. It can affect the health of everyone in your neighborhood.

Those at risk when smoke levels are high include persons with existing respiratory and cardiovascular disease (asthma, bronchitis, heart disease), as well as the elderly and children. These individuals may experience a variety of symptoms such as coughing, wheezing, shortness of breath, and chest pain, with increased difficulty associated with activities involving physical exertion. Symptoms may not be noticeable until several days after pollution episodes.

Healthy adults may notice eye, nose, or throat irritation when high levels of smoke are present.

For additional information on more efficient, cleaner burning fireplaces or wood stoves, click on www.epa.gov/woodstoves/fireplaces.html



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