



# Pinal County Flag Program



The Pinal County Flag Program helps parents and school personnel prepare for when air pollution levels are expected to exceed healthy levels for children with asthma and other upper respiratory ailments.



Green Flag will let you know that good, clean air is expected!



Yellow Flag will let you know that the air is okay, but not the best for everyone.

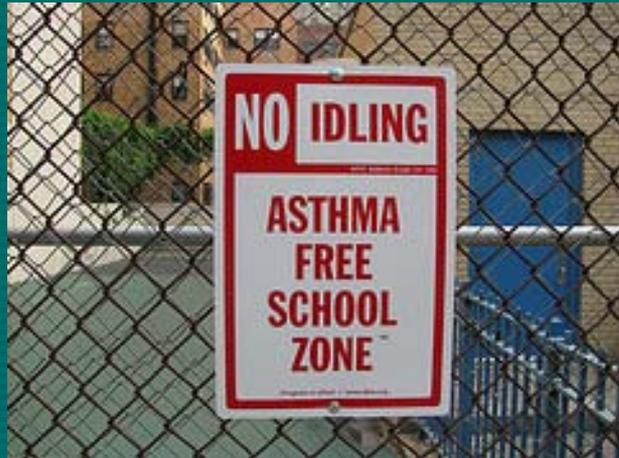


Orange Flag will let you know that pollution levels may be unhealthy for sensitive groups, such as children with asthma.



Red Flag will let you know when outdoor activity should be limited for all children & especially children with lung disease should stay indoors.

# Helping children breathe a little easier!



Have you ever left your car engine running while you waited to pick up your children, or while you waited in the drive-thru line at your bank or a favorite fast-food restaurant? Have you sometimes let your engine idle for several minutes to warm up your car first thing in the morning? Most of us have. But when you leave your car or truck running while it's parked or sitting still, the engine produces air pollution. This pollution contributes to problems like smog and global warming, as well as being harmful to our health.

A great deal of idling takes place at schools, where buses and cars line up to drop off and pick up children, and the children end up breathing the exhaust. Stopping unnecessary vehicle idling is one relatively easy way to contribute to improved air quality and respiratory health in our communities.

# Air Pollution

- Asthma is the nation's fastest-growing chronic disease, afflicting more than 22 million Americans. Asthma rates among children under age four more than doubled over the last twenty years.
- Once a person develops asthma, factors like dirty air can trigger an attack. Cutting traffic congestion and air pollution is one way to lessen the impact of asthma and other respiratory diseases.



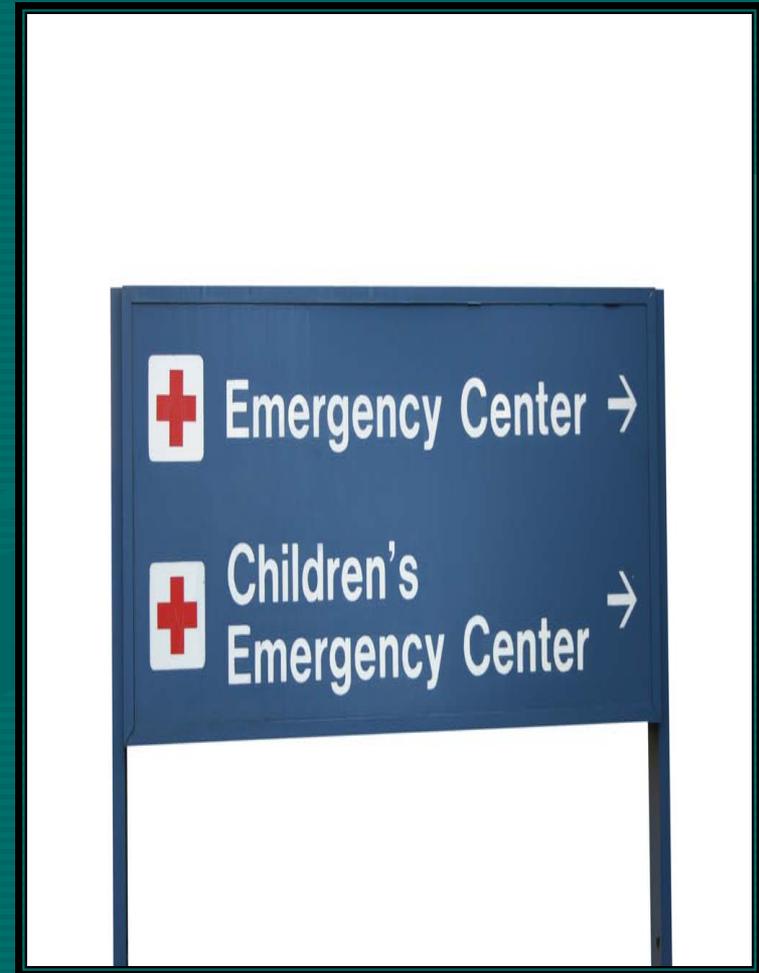
# What is the connection between asthma and dirty air?

- Smog and soot worsen asthma and trigger attacks. There is some evidence that ozone (a main ingredient in smog) and diesel exhaust particles may even cause asthma in some cases.
- Other triggers for asthma attacks include nitrogen oxides, formaldehyde and environmental tobacco smoke, and biological agents such as respiratory infections and allergens. Other toxic air contaminants like pesticides are suspected of contributing to asthma attacks.
- Nearly two-thirds of those suffering from asthma live in an area where at least one federal air quality standard is not being met.



# What are the costs of asthma?

- Every year, asthma is responsible for 9 million visits to health care professionals. In 2000, more than 1.8 million emergency room visits (including 728,000 visits for children under 17) and more than 460,000 hospitalizations were attributed to asthma attacks.
- More than 4,000 people lose their lives each year from this disease.
- Asthma is one of the leading causes of school absenteeism, accounting for over 14 million missed school days annually.
- Families with an asthma-afflicted child suffer a severe emotional toll, through loss of sleep, disrupted routines and restricted activities. Many families may also suffer undue financial burden with high medical bills.



# Health Effects of Ground-Level Ozone

Ground-level ozone is formed when volatile organic compounds (VOCs) and oxides of nitrogen (NO<sub>x</sub>) react with the sun's ultraviolet rays. The primary source of VOCs and NO<sub>x</sub> is mobile sources, including cars, trucks, buses, construction equipment and agricultural equipment.

Ground-level ozone reaches its highest level during the afternoon and early evening hours. High levels occur most often during the summer months. It is a strong irritant that can cause constriction of the airways, forcing the respiratory system to work harder in order to provide oxygen. It can also cause other health problems:

- Aggravated respiratory disease such as emphysema, bronchitis and asthma
- Damage to deep portions of the lungs, even after symptoms such as coughing or a sore throat disappear
- Wheezing, chest pain, dry throat, headache or nausea
- Reduced resistance to infection
- Increased fatigue
- Weakened athletic performance

# Particulate Matter (PM)

Particulate Matter is a complex mixture that may contain soot, smoke, metals, nitrates, sulfates, dust, water and tire rubber. It can be directly emitted, as in smoke from a fire, or it can form in the atmosphere from reactions of gases such as nitrogen oxides.

The size of particles is directly linked to their potential for causing health problems. Small particles (known as PM<sub>2.5</sub> or fine particulate matter) pose the greatest problems because they can get deep into your lungs and some may even get into your bloodstream. Exposure to such particles can affect both your lungs and your heart.

Studies have linked long-term particle pollution, especially fine particles, with significant health problems including:

- Increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing
- Decreased lung function
- Aggravated asthma
- Development of chronic respiratory disease in children
- Development of chronic bronchitis or chronic obstructive lung disease
- Premature death in people with heart or lung disease



# Air Quality Alerts

Air Quality alerts are available through the Pinal County Flag Program. Schools are able to institute guidelines for indoor days to protect students from high pollution or ozone levels that may adversely affect students with asthma.

The flags are provided to the Pinal County schools, at their request to participate. The flags represent different pollutants during different times of the year.

**April 1<sup>st</sup> thru October 31<sup>st</sup> – OZONE**

**January 1<sup>st</sup> thru December 31<sup>st</sup> – Particulate Matter**

If an alert is issued for both ozone and particulates, the school will fly the flag that protects the greater at-risk population.

If your child has asthma or another respiratory illness that is triggered by air pollution, contact your school administration to see if they participate in the Flag Program.

Each day, a color coded flag would be raised to inform parents, students, and school faculty what the air quality will be for that particular day.



# Our children have the right to breathe!

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