



Air Pollution Control District  
San Luis Obispo County



# AIR QUALITY & YOUR HEALTH

*An educational outreach campaign*

**Dr. Penny Borenstein & Aeron Arlin Genet**

SLO County Public Health Department

SLO County Air Pollution Control District

# BACKGROUND

- ▶ Despite significant success in reducing overall pollution levels, air pollution continues to be an important public health problem.



- ▶ Air monitoring shows that over 90 percent of Californians breathe unhealthy levels of one or more air pollutants during some part of the year.\*
- ▶ Asthma's prevalence in the U.S. has **increased by more than 75%** since 1980.\* An estimated 13.7% of Californians—>4 million children and adults—report that they have been diagnosed with asthma at some point in their lives. The U.S. prevalence is at 10%; for San Luis Obispo County residents the reported prevalence is 16.7%\*\*

\* California Air Resources Board

\*\* California Health Interview Survey, 2009

# WHAT IS OZONE & PARTICULATE POLLUTION?

- ▶ **Ground level ozone** is formed when emissions from everyday items such as cars, factories or paints combine with other pollutants and “cook” in the heat and sunlight.
- ▶ **Particulate pollution** is a complex mixture of extremely small particles that may contain a number of harmful components, including acids, organic chemicals, metals and soil or dust particles.
- ▶ Exposure to elevated levels of either can cause significant health effects.

# AIR QUALITY STANDARDS

- ▶ Health-based air quality standards are set to identify outdoor pollutant levels that are considered safe (or unsafe) for the public.
- ▶ Those that are most at risk of adverse effects with exposure to air pollution:
  - ▶ Children
  - ▶ Elderly
  - ▶ Those with pre-existing conditions or are sensitive
  - ▶ People who are active outdoors



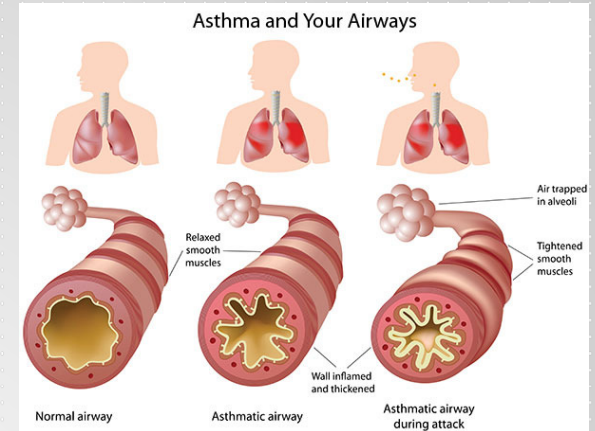
*Dr. Penny Borenstein,  
SLO County Public Health Officer*



# HEALTH EFFECTS

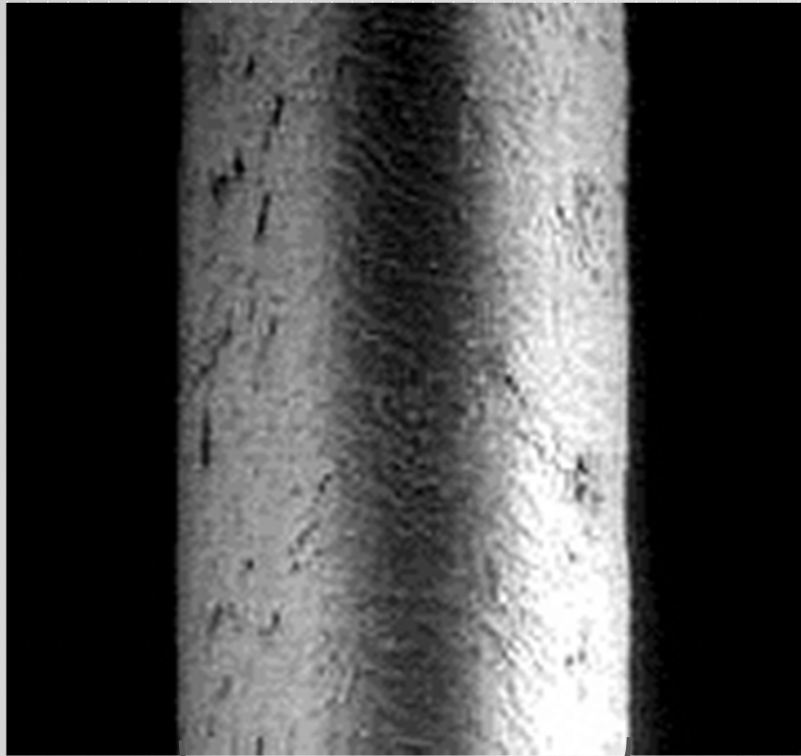
## OZONE & PARTICULATE MATTER

- ▶ Irritation to the respiratory system, causing coughing, throat soreness, chest tightness, or chest pain when taking a deep breath;
- ▶ Reduced lung function, making it more difficult to breathe as deeply and vigorously as you normally would;
- ▶ Damage to the cells that line the lungs;
- ▶ Cause the lungs to be more susceptible to infection;
- ▶ Aggravates asthma and other chronic lung diseases such as emphysema and bronchitis; and,
- ▶ Permanent lung damage.

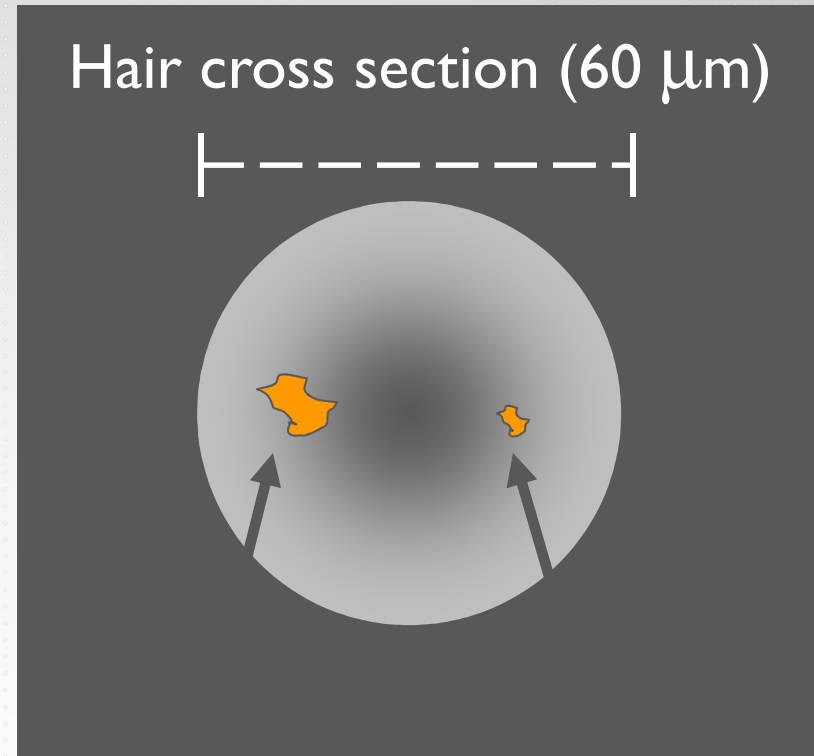


**Ozone can inflame the lung's lining. These photos show a healthy lung air way (left) and an inflamed lung air way (right).**

# PM IN A CROSS-HAIR



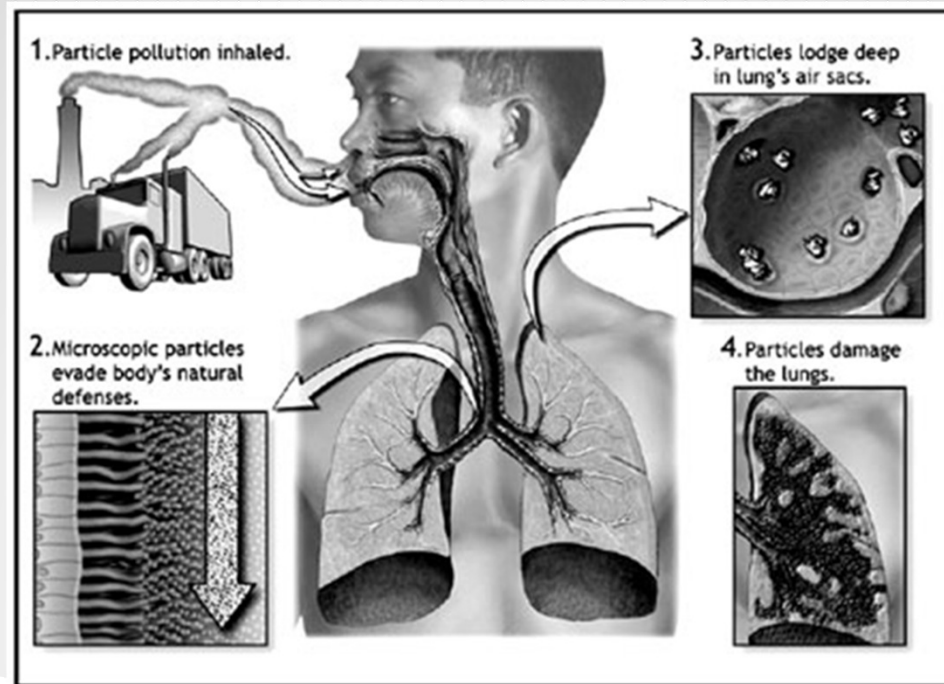
**Human Hair**  
**(60  $\mu\text{m}$  diameter)**



**PM10**  
**(10  $\mu\text{m}$ )**

**PM2.5**  
**(2.5  $\mu\text{m}$ )**

# MECHANISM OF LUNG EXPOSURE



# HEALTH AND ECONOMIC IMPACTS

- ▶ Respiratory problems in children & adults (asthma, bronchitis)
- ▶ Decreased lung function in children and adults
- ▶ Hospitalizations & emergency room visits
- ▶ Premature birth?
- ▶ Premature death
- ▶ School absenteeism and work loss
- ▶ Health care economic impacts



# SENSITIVE POPULATIONS

- ▶ Fetal/Infant - possible decreased lung function growth
- ▶ Young Children
- ▶ Elderly
- ▶ Pre-existing respiratory or heart disease; e.g. asthma exacerbation.

# AIR QUALITY & YOUR HEALTH CAMPAIGN

- ▶ **To bring awareness & increased understanding** to the public of the connection between air quality on public health the **SLO County APCD & the SLO County Public Health Department** have collaborated on an educational campaign

- ▶ Campaign includes:
  - ▶ Informative brochures
  - ▶ Posters
  - ▶ Public service announcements
  - ▶ Presentations
  - ▶ Advertisements



# AIR QUALITY & YOUR HEALTH

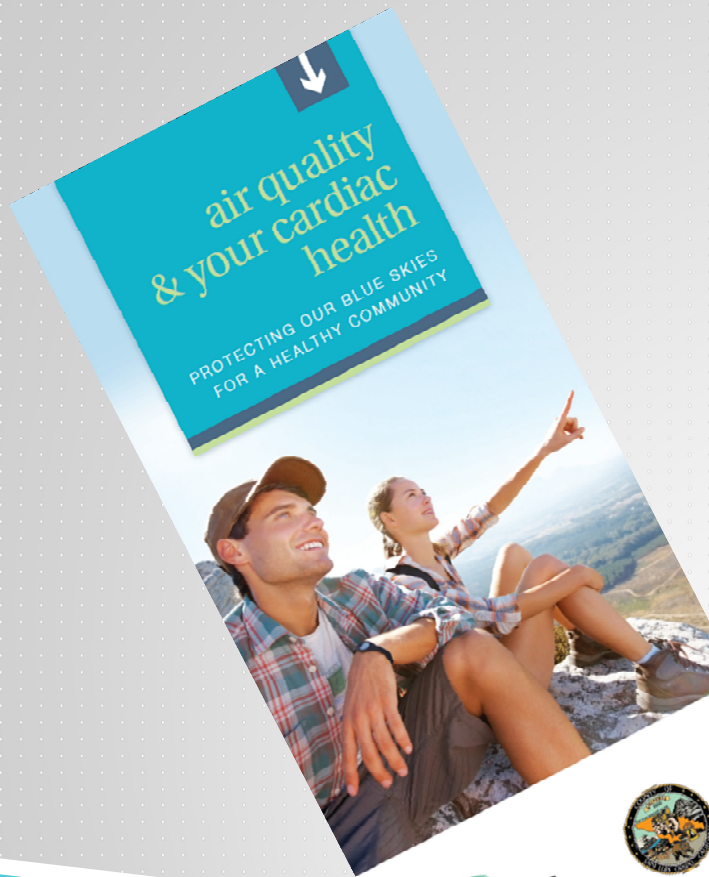
- ▶ The campaign materials will be distributed to:
  - ▶ Local health professionals
  - ▶ Medical clinics
  - ▶ Hospitals
  - ▶ Fitness facilities (including Cal Poly & Cuesta)
  - ▶ Public events
  - ▶ Agency offices
  - ▶ Parks & Recreation
  - ▶ Bike shops
- ▶ Presentations will be made to:
  - ▶ APCD Board
  - ▶ SLO County Board of Supervisors
  - ▶ SLO County Health Commission



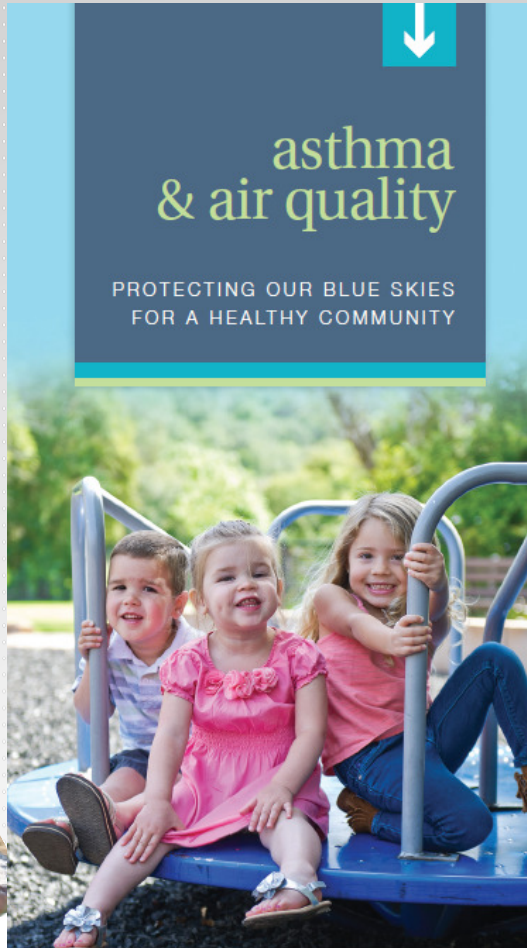
**Brochures displayed at a local doctor's office!**



# BROCHURES



[SLOCleanAir.org](http://SLOCleanAir.org) | [SLOPublicHealth.org](http://SLOPublicHealth.org)



[SLOCleanAir.org](http://SLOCleanAir.org) | [SLOPublicHealth.org](http://SLOPublicHealth.org)



[nAir.org](http://nAir.org) | [SLOPublicHealth.org](http://SLOPublicHealth.org)





# WHAT YOU CAN DO!

## PROTECT OUR BLUE SKIES FOR A **HEALTHY COMMUNITY**

Tips to keep the air clean & protect your health.



### EMBRACE AIR-FRIENDLY TRANSPORTATION

Carpool, vanpool, telework, take transit  
or walk & bike.



### SHOP LOCALLY AT FARMERS' MARKETS

Support local agriculture & reduce the  
miles your food has to travel.



### PLEDGE SLO CAR FREE

Travel without your car & get great  
discounts at [SLOCARFree.org](http://SLOCARFree.org)

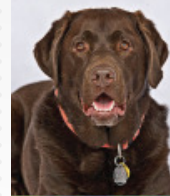


### USE ENERGY EFFICIENT TECHNOLOGIES



### STAY INFORMED OF LOCAL AIR QUALITY CONDITIONS

- Visit the APCD website at [SLOCleanAir.org](http://SLOCleanAir.org)  
and click "Today's Air Quality".
- Call 805-781-4390 to hear a recording of the  
air quality in your area.
- During high wind events or hot summer  
days, keep watch on your local air quality  
conditions to determine the best time of  
day to exercise and enjoy the outdoors.



### DID YOU KNOW?

*Your pets may be more vulnerable to the  
effects of poor air quality than you are.  
Animals have smaller, more sensitive lungs  
than humans so it's actually even harder for  
them to breathe when the air is poor.*



# STAY INFORMED OF LOCAL AIR QUALITY CONDITIONS

- ▶ **VISIT** the APCD website at [SLOCleanAir.org](http://SLOCleanAir.org) and click "Today's Air Quality"
- ▶ **SIGN UP** to receive alerts via email or text through [Enviroflash.info](http://Enviroflash.info)
- ▶ **FOLLOW** the APCD on Twitter (@SLOCLEANAIR) or see the live feed on our website
- ▶ **CALL** 805-781-4390 to hear a recording of the air quality in your area



# Questions?

