

# Effects of Common Air Pollutants

## RESPIRATORY EFFECTS



### Symptoms:

- Cough
- Wheezing
- Phlegm
- Shortness of breath
- Chest tightness

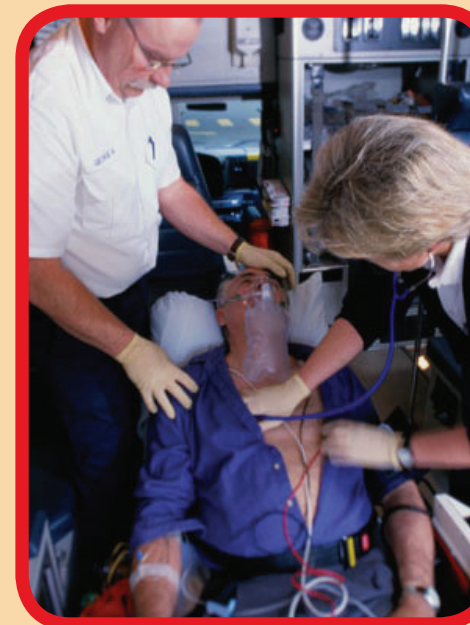
### Increased sickness and premature death from:

- Asthma
- Bronchitis (acute or chronic)
- Emphysema
- Pneumonia

### Development of new disease

- Chronic bronchitis
- Premature aging of the lungs

## CARDIOVASCULAR EFFECTS

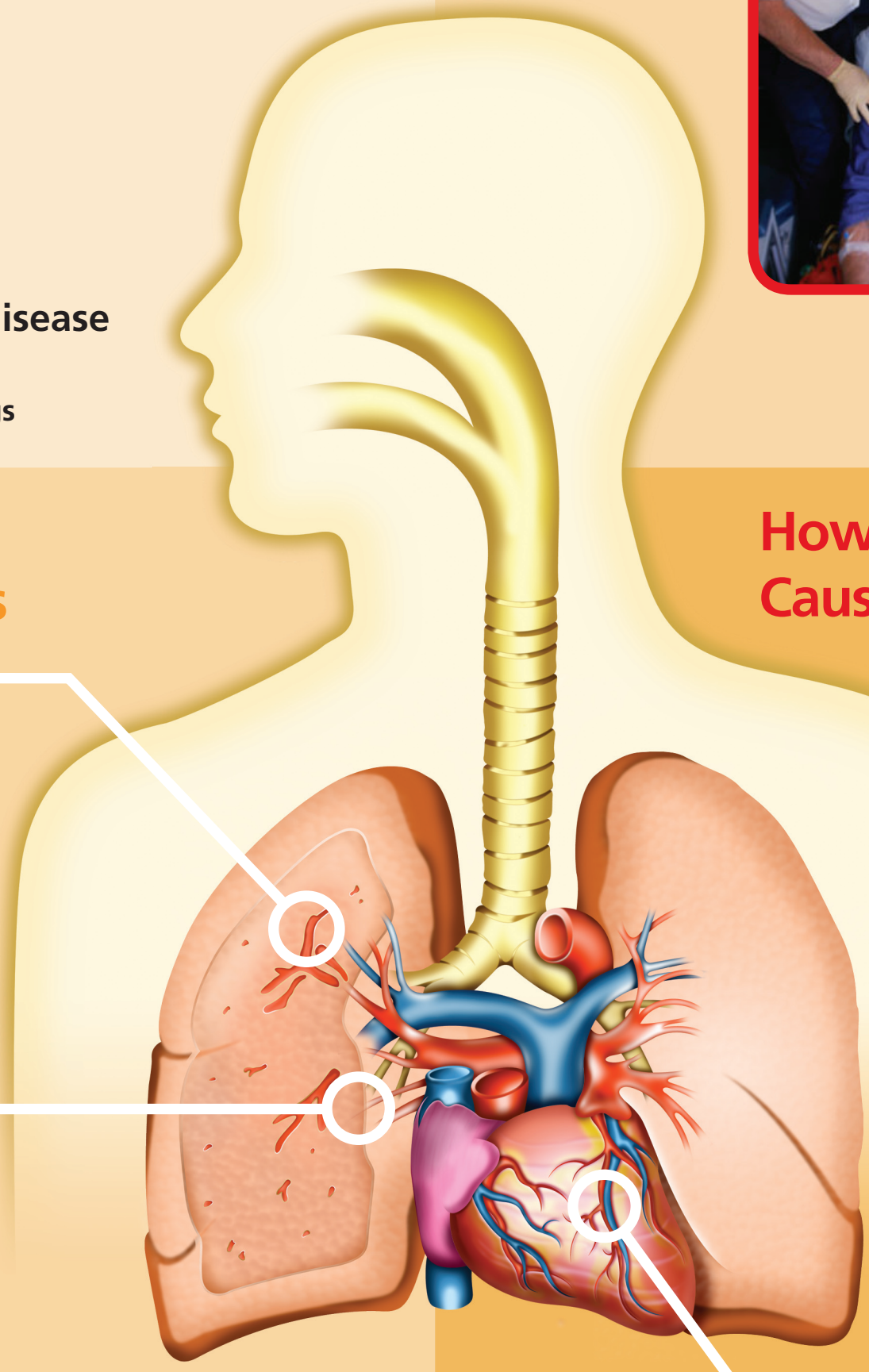


### Symptoms:

- Chest tightness
- Chest pain (angina)
- Palpitations
- Shortness of breath
- Unusual fatigue

### Increased sickness and premature death from:

- Coronary artery disease
- Abnormal heart rhythms
- Congestive heart failure



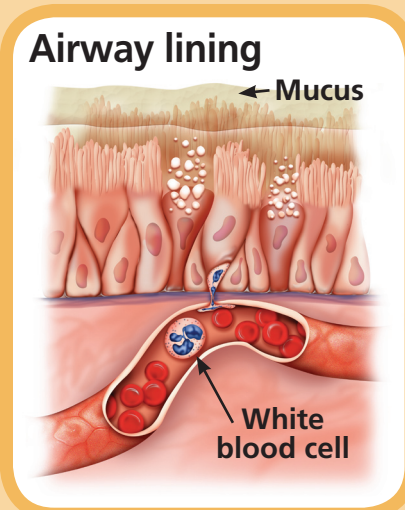
## How Pollutants Cause Symptoms



Alveoli filled with trapped air

### Effects on Lung Function

- Narrowing of airways (bronchoconstriction)
- Decreased air flow



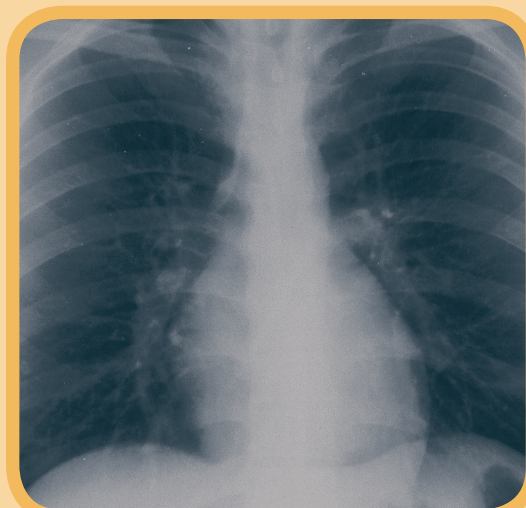
Airway lining

Mucus  
White blood cell

### Airway Inflammation

- Influx of white blood cells
- Abnormal mucus production
- Fluid accumulation and swelling (edema)
- Death and shedding of cells that line airways

### Increased Susceptibility to Respiratory Infection

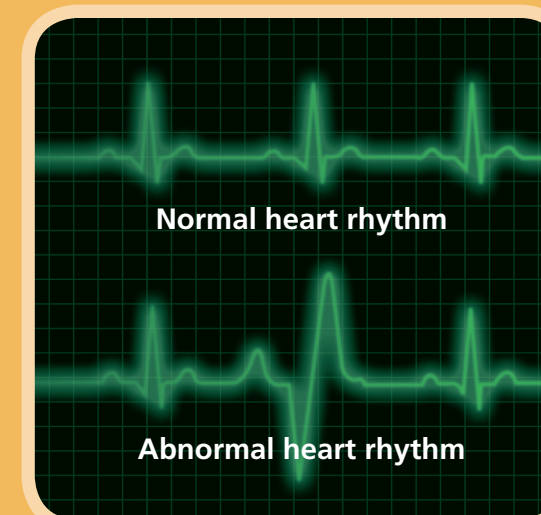


Normal



Lung with respiratory infection

## How Pollutants May Cause Symptoms



Normal heart rhythm

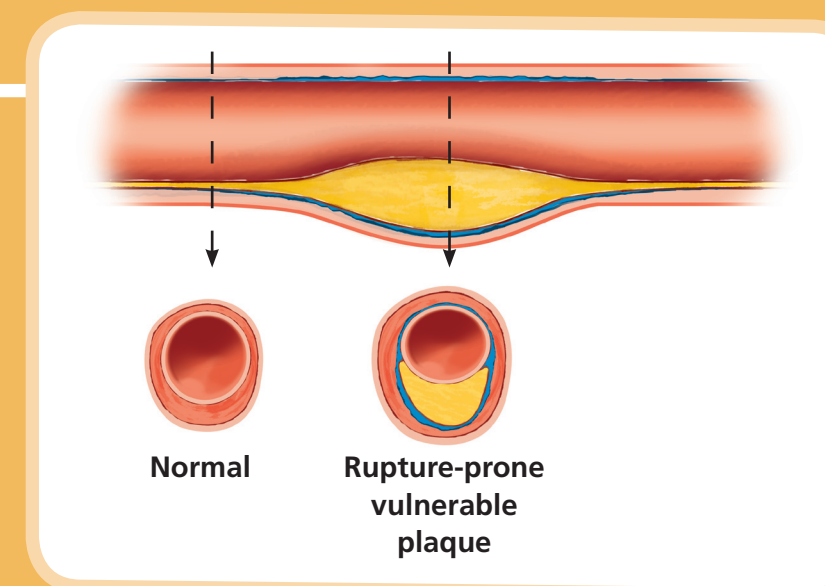
Abnormal heart rhythm

### Effects on Cardiovascular Function

- Low oxygenation of red blood cells
- Abnormal heart rhythms
- Altered autonomic nervous system control of the heart

### Vascular Inflammation

- Increased risk of blood clot formation
- Narrowing of vessels (vasoconstriction)
- Increased risk of atherosclerotic plaque rupture



Normal

Rupture-prone vulnerable plaque



Reduce your risk by using the Air Quality Index (AQI) to plan outdoor activities – [www.airnow.gov](http://www.airnow.gov)

AQI Levels of Health Concern	AQI Values	What Action Should People Take?
Good	0-50	Enjoy Activities
Moderate	51-100	People unusually sensitive to air pollution: Plan strenuous outside activities when air quality is better
Unhealthy for Sensitive Groups	101-150	<b>Sensitive Groups:</b> Cut back or reschedule strenuous outside activities <b>Particle Pollution:</b> People with heart or lung disease (including diabetics), older adults, and children <b>Ozone:</b> Active children and adults and people with lung disease <b>Sulfur Dioxide:</b> Active children and adults with asthma <b>Carbon Monoxide:</b> People with heart disease and possibly fetuses and infants
Unhealthy	151-200	<b>Everyone:</b> Cut back or reschedule strenuous outside activities <b>Sensitive groups:</b> Avoid strenuous outside activities
Very Unhealthy	201-300	<b>Everyone:</b> Significantly cut back on outside physical activities <b>Sensitive groups:</b> Avoid all outside physical activities



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