Effects of Common Air Pollutants

**Respiratory Effects**

**Symptoms:**
- Cough
- Phlegm
- 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

**How Pollutants Cause Symptoms**

- **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**
  - Alveoli filled with trapped air

**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
- Stroke

**How Pollutants Cause Symptoms**

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

- **Effects on Cardiovascular Function**
  - Low oxygenation of red blood cells
  - Abnormal heart rhythms
  - Altered autonomic nervous system control of the heart

**Effects on Lung Function**
- Narrowing of airways (bronchioconstriction)
- Decreased air flow

**Airway Lining**
- Mucus
- White blood cell
- Normal
- Lung with respiratory infection

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

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