

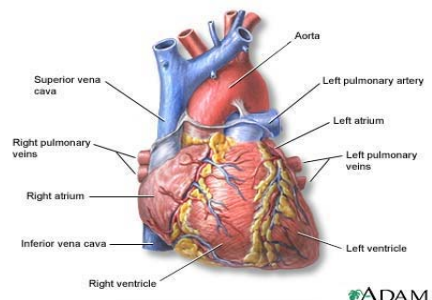


HSE ALERT # 170

EFFECTS OF OZONE AND PARTICLE POLLUTION ON HEALTH

Particle pollution has been linked to changes in the cardiovascular system. These include:

- Arrhythmias and changes in heart rate.
- Changes in the variability of heart rate.
 - Blood component changes
 - C-reactive protein
 - Fibrinogen
 - Plasma viscosity

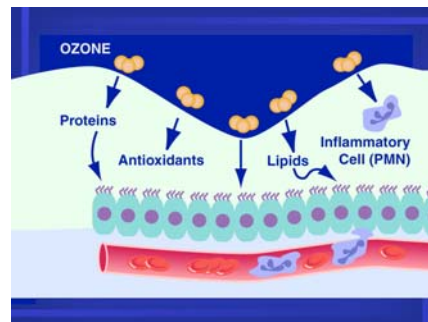


Health Effects of Particle Pollution:

- Aggravated asthma
- Increase in respiratory symptoms like coughing and difficult or painful breathing
- Chronic bronchitis
- Decreased lung function
- Early death in people with heart and lung disease

Ozone Irritates the Airways:

- Symptoms
 - Cough
 - Sore or scratchy throat
 - Pain with deep breath
 - Fatigue
- Rapid onset
- Similar symptoms - people with and without asthma



Ozone Causes Inflammation:

- Ozone reacts completely in surface layer - forms reactive oxygen molecules
- Influx of white blood cells
- Damages cells that line the airways
- Effect is greater 24 hours after exposure
- Increases airway reactivity
- Inflammation and increased airway reactivity responses greater in people with asthma
- Concern about repeated exposures

Step to reduce the Ozone and Particle:

- Discharging soot in air should be avoided in order to control / minimize the carbon particles.