

## Health Effects of Power Plant Pollutants

Pollutant	What is it?	How is it produced?	Health effects	Most vulnerable populations
Ozone	Ozone is a highly corrosive, invisible gas.	Ozone is formed when nitrogen oxides (NOx) react with other pollutants in the presence of sunlight.	Rapid shallow breathing, airway irritation, coughing, wheezing, shortness of breath. Makes asthma worse. May be related to premature birth, cardiac birth defects, low birth weight and stunted lung growth.	Children, elderly, people with asthma or other respiratory disease. People who exercise outdoors.
Sulfur Dioxide (SO <sub>2</sub> )	SO <sub>2</sub> is a highly corrosive, invisible gas. Sulfur occurs naturally in coal.	SO <sub>2</sub> is formed in the gases when coal is burned. SO <sub>2</sub> reacts in the air to form sulfuric acid, sulfates, and in combination with NOx, acidic particles.	Coughing, wheezing, shortness of breath, nasal congestion and inflammation. Makes asthma worse. SO <sub>2</sub> gas can de-stabilize heart rhythms. Low birth weight, increased risk of infant death.	Children and adults with asthma or other respiratory disease.
Particulate Matter (PM)	A mixture of small solid particles (soot) and tiny sulfuric acid droplets. Small particles are complex and harmful mixtures of sulfur, nitrogen, carbon, acids, metals and airborne toxics.	Directly emitted from coal burning. Formed from SO <sub>2</sub> and NOx in the atmosphere.	PM crosses from the lung into the blood stream resulting in inflammation of the cardiac system, a root cause of cardiac disease including heart attack and stroke leading to premature death. PM exposure is also linked to low birth weight, premature birth, chronic airway obstruction and remodeling, and sudden infant death.	Elderly, children, people with asthma.
Nitrogen Oxides (NOx)	A family of chemical compounds including nitrogen oxide and nitrogen dioxide. Nitrogen occurs naturally in coal.	NOx is formed when coal is burned. In the atmosphere can convert to nitrates and form fine acidic particles. Reacts in the presence of sunlight to form ozone smog.	NOx decreases lung function and is associated with respiratory disease in children. Converts to ozone and acidic PM particles in the atmosphere.	Elderly, children, people with asthma.
Mercury	A metal that occurs naturally in coal.	Mercury is released when coal is burned.	Developmental effects in babies that are born to mothers who ate contaminated fish while pregnant. Poor performance on tests of the nervous system and learning. In adults may affect blood pressure regulation and heart rate.	Fetuses and children are directly at risk. Pregnant women, children and women of childbearing age need to avoid mercury exposure.
Carbon Dioxide	Coal has the highest carbon content of any fossil fuel.	Carbon dioxide is formed when coal is burned.	Indirect health effects may be associated with climate change including the spread of infectious disease, higher atmospheric ozone levels and increased heat and cold-related illnesses.	People of Color, children, people with asthma.