

Glossary

Acute – occurring within minutes to days

Aerosols – Particles of solids or liquids dispersed in gases. Examples of aerosols include dust clouds, haze, and smog.

Allergen – A substance capable of provoking an allergic response in an individual. Examples include foods, dust, pet dander.

Alveoli – The small sacs at the end of the bronchioles in the lungs where the gas exchange between the veins and arteries takes place.

Asbestos – A fibrous mineral once mined for use in fire retardation, industrial use. When inhaled over long periods can cause restrictive lung disease and lung cancer.

Asthma – A chronic inflammatory disorder of the airway, featuring recurrent reversible episodes of wheezing, coughing and shortness of breath. Can also be characterized by the hyper-responsiveness of the airways to stimuli such as cold or the presence of allergens.

Atmospheric Inversion – A layer of warmer air over cooler air, which, when combined with a stagnant air mass or restrictive geography can trap air pollutants and keep them from dispersing.

Black Lung – An obstructive disease of the lung resulting from years of breathing coal dust

Brown Lung – An obstructive disease of the lung resulting from occupational exposure over long periods to fibrous textile dust.

Carbon Dioxide – Carbon bound to 2 oxygens; part of normal air on earth; poisonous only as a simple asphyxiant

Carbon Monoxide – Carbon bound to a single oxygen; generated by industrial processes; acutely and chronically poisonous

Chronic – occurring within months to years

Chronic Obstructive Pulmonary Disease (COPD) – chronic lung disease usually either chronic bronchitis or emphysema or a combination; usually the result of chronic exposure to tobacco smoke

Cilia – The small hair-like structures which sweep mucus and foreign particles out of the respiratory tract and towards the mouth and nose.

Clean Air Act of 1990 – Comprehensive regulations enacted by Congress to control acid rain, toxic emissions, ozone depletion, and automobile exhaust.

Dust – particles of solids defined as being smaller than 1 micrometer. Can be comprised of minerals, organic materials. Often created by mechanical abrasion. A common allergen.

Dust mites – Microscopic arthropods which feed on flakes of human skin common in house dust, especially in mattresses, bedroom areas. The droppings of these mites are highly allergenic for some people.

El Nino – A periodically reoccurring warming of ocean waters in the eastern part of the tropical Pacific Ocean, which has an impact on global climate.

Environmental Health – The study of those aspects of human health including quality of life, that are determined by physical, chemical, biological, social and psychosocial factors in the environment.

Epidemic – Incidence of an illness above what is expected.

Epidemiology – The study of epidemics in human populations.

Geographic Information Systems (GIS)

Global Warming – Natural or human-induced increase in the average temperature of the atmosphere near the Earth's surface.

Haze – An aerosol that hinders vision; may consist of a mix of water droplets, pollutants and dust.

Humidity – The amount of water vapor present in the air at a given time.

Inflammation – A pathological process characterized by injury or destruction of tissues caused by a variety of physical reactions. Usually typified by heat, swelling, redness and a loss of function.

Lead (Pb) – A toxic heavy metal known to cause developmental problems in children at low doses. Used in many industries and formerly present in paint and gasoline.

Nitrogen Dioxide – (NO₂) An yellow-brown to reddish brown gas which is an important precursor to acid rain. Produced from the burning of fossil fuels.

Ozone – (O₃) Three atoms of oxygen occurring together. Chemically active with a short average lifetime in the atmosphere. In the stratosphere, it forms a protective layer which absorbs harmful UV radiation from the sun. In the lower atmosphere it is an air pollutant.

Particle – A single continuous solid unit or liquid containing a mixture of molecular types held together by intramolecular forces, primarily larger than 0.001 micrometer.

Particulate Matter (PM) – Different types of minute particles, such as powders or fibers which pollute air, usually classified by size in micrometers PM₁₀ and PM_{2.5}. The smaller the particle the deeper in the lungs it can travel. Often generated by combustion, industrial process or farming, or by natural processes such as volcanic eruption.

Peak Flow – measures a person's ability to get air out of their lungs. It is measured as a rate and the units of measure are liters per minute (LPM).

Pollen – The male fertilizing element of flowering plants. It is released as yellow dust to be carried by wind or other vectors. Many plants' pollens are allergenic.

Pollutant – Generally any substance introduced into the environment that adversely affects the usefulness of a resource or the health of humans, animals or the ecosystem.

Radon – A naturally occurring odorless, colorless radioactive gas.

Smog – A mixture of smoke and fog, applied to any extensive contamination of the air by aerosols. Ultraviolet radiation combined with auto exhaust produces photochemical smog, while the coal or oil burned by power plants creates sulfurous smog.

Smoke – Small particles arising from incomplete combustion, predominantly consisting of carbon and other combustible materials.

Soot – Aggregates of particles of carbon stuck together with “tar”, formed during the incomplete burning of fuels.

Stratosphere - is the protective Ozone layer (protects against UV light penetration); the atmosphere is thin with few molecules.

Sulfur Dioxide – (SO₂) An odorless and colorless gas which is a major precursor to acid rain. The burning of fossil fuels, particularly coal, is a major source.

Troposphere - is the closest layer to the Earth; here, weather occurs because a “cold trap” holds water and other molecules from drifting into space.

Volatile Organic Compounds (VOC's) – A group of chemicals which include hydrocarbons. Examples include methane, butane and propane. Generated from natural sources as well as human, but in the US combustion from autos, and releases from industries such as dry cleaners, degreasing and some graphic arts applications, contribute high levels to the lower atmosphere.