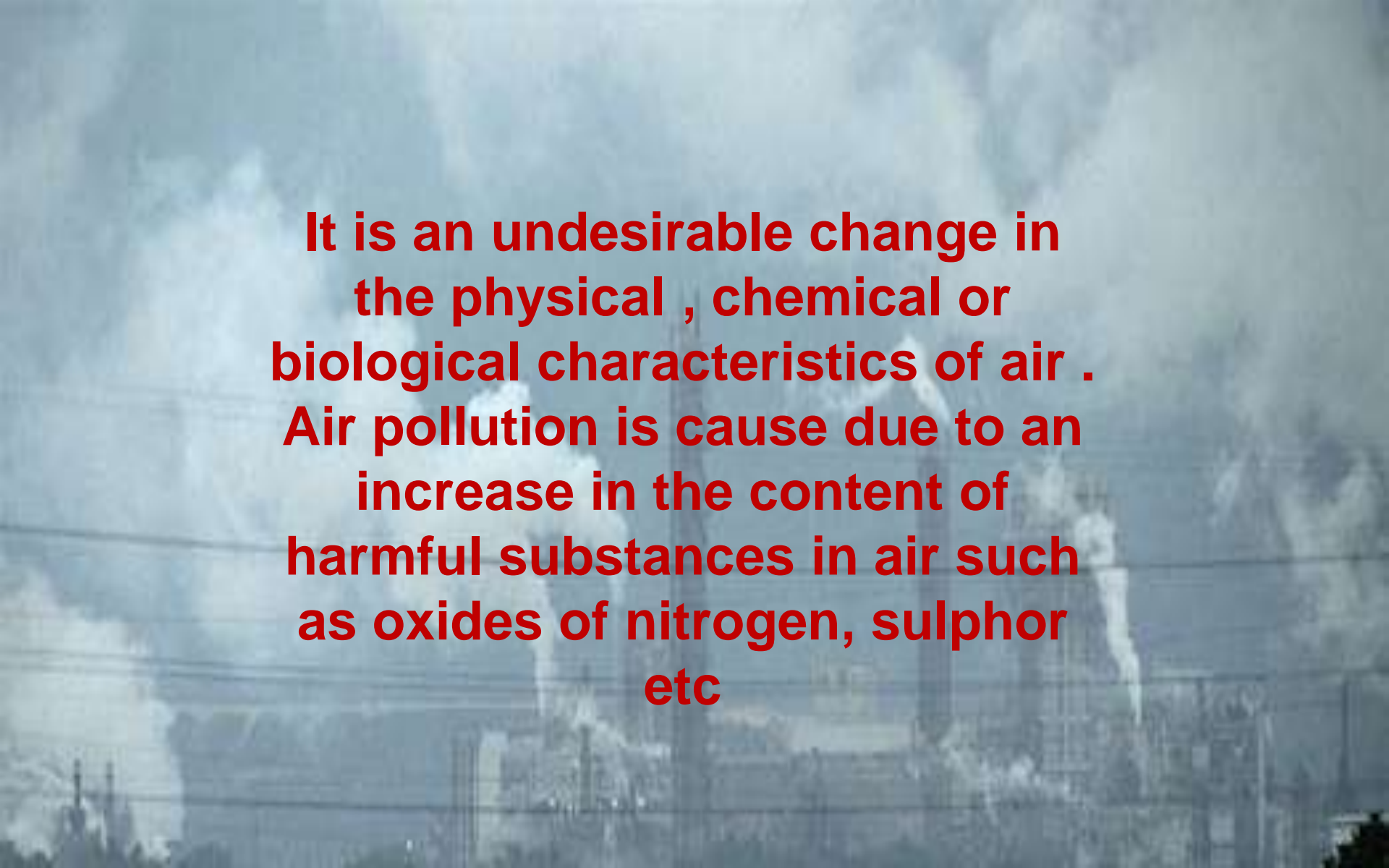




AIR POLLUTION





**It is an undesirable change in the physical , chemical or biological characteristics of air .
Air pollution is cause due to an increase in the content of harmful substances in air such as oxides of nitrogen, sulphor etc**

Air pollution is said to exist if the levels of gases, solids or liquids present in the atmosphere are high enough to harm humans, other organisms or materials.

The air may become polluted by natural causes such as volcanoes which release ash, dust, sulphur and other gases, or by forest fires that are occasionally naturally caused by lightning. Today, human activities are responsible for most of the air pollution.

AIR POLLUTANT

An air pollutant is a substance in the air that adversely effect human beings and eco-system.



Pollutants can categorized in to two ; **Primary pollutants** and **Secondary pollutants**.

Primary air pollutants

Harmful chemicals that are released to the atmosphere directly from a source.

Eg: Carbon oxides (CO & CO₂), Nitrogen oxides, Sulphur oxides, Volatile organic compounds (mostly hydrocarbons) and Suspended particular matter.



Secondary air pollutants

They are produced by chemical reactions involving the primary pollutants.

Eg: Sulphuric acid, Nitric acid, Mist, Smog, Ozone, etc.



The background is a dark, textured surface, possibly a book cover or a wall, with a subtle pattern. On the left side, there is a glass containing a red liquid, likely a beverage. The text is centered and reads:

Causes and effects of
Indoor
Air Pollution

- Pesticides, mosquito repellents, cleaning agents etc used in house holds can cause toxic conditions.
- Building materials like asbestos, glass fiber, paints, glues, varnishes are all health hazards. They can cause irritation of the eyes and skin, respiratory ailments and cancer.





- **Air conditioned rooms and offices cause a broad spectrum of health complaints, because the sealed space accumulates various contaminants.**



- **Cigarette smoke affects both smokers and non-smokers.**
- **The common pollutants in urban interiors are cigarette smoke, gases from stoves, formaldehyde (from carpets and furniture), pesticides, cleaning solvents and ozone (from photocopies).**



•In rural areas, indoor air pollution is taking a toll on the health of women.

Traditional stoves that use wood, coal or animal dung spew out poisons that women inhale directly. This is equivalent to smoking 100 cigarettes a day.

Causes and effects of Outdoor Air Pollution



The sources of outdoor air pollution are :

- **Burning of fossil fuels in automobiles, power stations, chemical, metal and paper industries.**
- **Mining activities leading to dust as well as fires.**
- **Natural emissions from animals, decaying organic matter.**
- **Burning of bio-fuels, tropical rain forests, wastes of all kinds etc.**
- **Disasters like earthquakes, volcano eruptions, dust storms, leak of gases (like Bhopal case) and armed conflicts.**
- **Festivals (eg : Diwali with its crackers).**
- **Dust storms are typically formed in desert areas and from there they can spread to places thousands of kilometers away.**
- **Industries and automobiles are the main contributors to outdoor air pollution across the world.**

•Lead was added to petrol for preventing the ‘knocking’ of the engine. Lead is extremely poisonous and large accumulation of lead in body can result paralysis, blindness and even death.



•Trucks and buses run on diesel, which has high sulphur content. The old engines emit vast quantities of suspended particulate matter, leading to heavy air pollution in many cities.

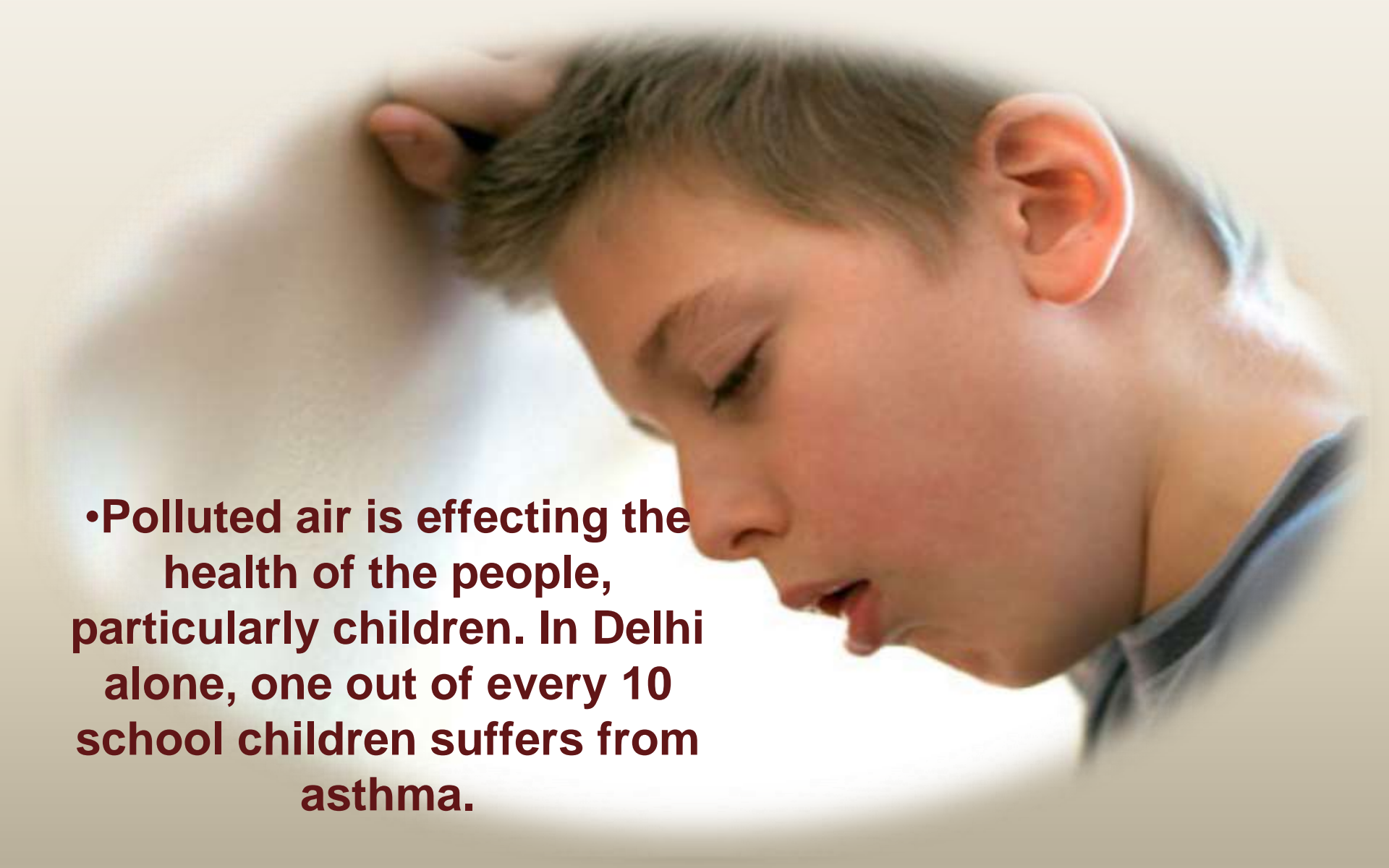




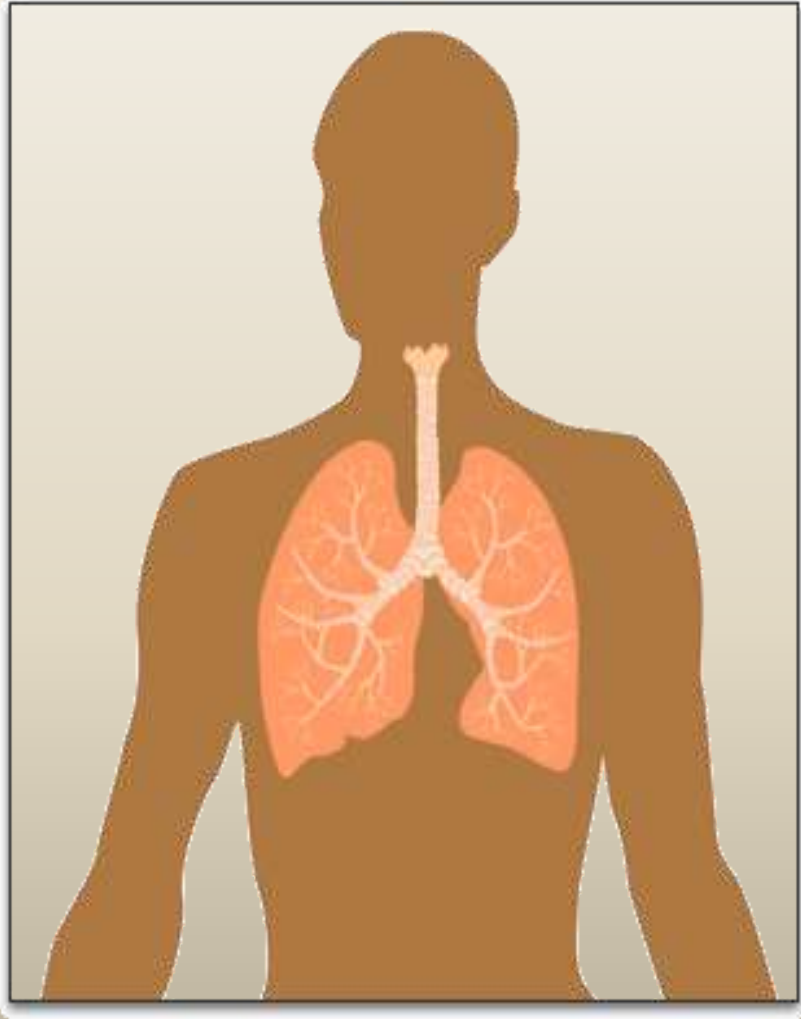
Smog is a type of air pollutant and the word "smog" is a combination of **smoke and **fog**.**

It is a big problem today in Beijing, and in many other cities. London is where it first happened, but coal fires are now illegal in London. In cities like Los Angeles it is the exhaust fumes of cars which cause the smog.

- Delhi is supposed to be the most polluted city on Earth. Smog cause lung diseases and increase the death rate. According to one estimate, air pollution causes the death of about 10,500 people in Delhi every year.

A close-up, profile view of a young boy with short, light brown hair. He has his eyes closed and his right hand is pressed against his forehead, suggesting discomfort or distress. The background is a soft, out-of-focus light color.

•Polluted air is effecting the health of the people, particularly children. In Delhi alone, one out of every 10 school children suffers from asthma.



- Air pollutants irritate the eyes and cause inflammation of the respiratory tract. If the person already suffers from respiratory illness, air pollution may lead to the condition becoming chronic at later stage. It can also lead to skin allergies.



•Many pollutants also depress the immune system, making the body more prone to infections. CO from automobile emissions can cause headache at lower levels and mental impairment and even death at higher levels.

- On a large scale air pollution leads to Acid rain, Ozone layer depletion and Global warming.



Control Measures
for
Air Pollution



- Give greater emphasis on pollution prevention rather than control.
- Reduce the use of fossil fuels and increase the use of renewable energy. Use fuels with low sulphur and ash content.



- improve the quality of vehicular fuel. Use un-leaded petrol.
- Encourage pupil to use public transport, walk or use a cycle as opposed to private vehicles.
- Ensure that houses, schools, restaurants, and playgrounds are not located on busy streets.
- Plant trees along busy streets as they remove particulates, CO₂ and absorb noise.



- **Industries and waste disposal sites should be situated outside the city, preferably on the downwind of the city.**
- **Catalytic converters should be used to control emissions of CO and hydrocarbons.**



In industrial centers :

- **Emission rate should be restricted to permissible levels by each and every industry.**
- **Ensure sufficient supply of oxygen to the combustion chamber and adequate temperature so that the combustion is complete there by eliminating much of the smoke consisting or partly burned ashes and dust.**



- Use mechanical devices such as scrubbers, cyclones, bag houses and electro-static precipitators in manufacturing processes.
- The air pollutants collected must be carefully disposed. The factory fumes are dealt with chemical treatment.

