

AIR QUALITY

Understanding the composition of the air we breathe, and how it affects our health

THE AIR WE BREATHE



The atmosphere is composed of a **mixture of gases**, with the most abundant ones being nitrogen (78%) and oxygen (21%).

Argon (0.9%) is also present, along with other gases in trace concentrations, including ozone, water vapour, nitrogen oxides, sulfur dioxide, and greenhouse gases like carbon dioxide (~0.04%).

Some of these are essential for life, while others can be harmful to our health.

AIR POLLUTANTS

Pollutants in the air are compounds that can be harmful to humans, animals and the environment.

- **gases**, like nitrogen dioxide, sulfur dioxide and ozone
- **particulate matter**, like mineral dust, black carbon (soot), smoke and liquid droplets (e.g. sulfates)

DID YOU KNOW?



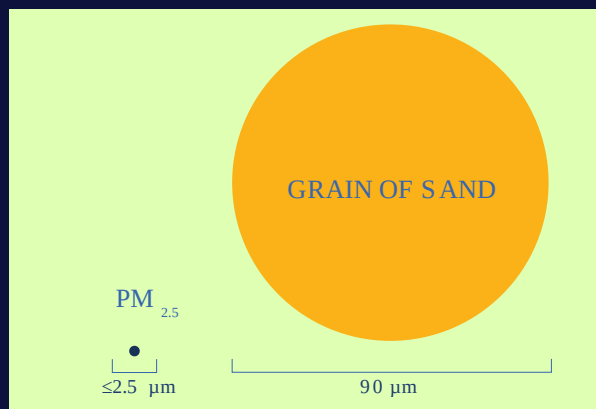
Air pollution kills
7 million
people per year!

(World Health Organisation)

WHAT WE CAN'T SEE

Tiny particles, known as **particulate matter** (PM), are found in the air. These come from human activities (e.g. cars) or natural sources (e.g. deserts).

Particulate matter is very small and cannot be seen with the naked eye, and comes in different sizes. It is known as **PM10**, **PM2.5** and **PM0.1** according to the particle diameter (under 10, 2.5 and 0.1 micrometres, respectively).



HEALTH EFFECTS OF AIR POLLUTION

Air pollution is a major cause of health problems and deaths in the world. When we breathe, particles enter our body. Larger particles (like dust) are easily stopped by our nose and throat.

However, smaller particles (like fine particulate matter) can reach the lungs and other organs, causing different health problems depending on the length of exposure, which can range from a brief air pollution episode (short-term) or long-term exposure over many years.



SHORT TERM

- eyes, nose, throat and skin irritation
- coughing, breathing difficulties
- headaches
- respiratory infections, pneumonia, bronchitis
- allergies

LONG TERM

- respiratory diseases, like asthma and cancer
- cardiovascular diseases
- strokes
- central nervous system problems

“Air pollution is now the world’s largest single environmental risk.”

World Health Organization, 2014

MAIN SOURCES OF POLLUTANTS



Residential



Transport



Agriculture



Industry

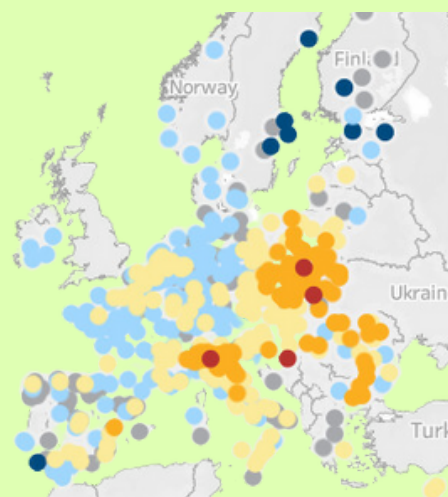


Natural

AIR QUALITY IN EUROPE

In 2021, about 97% of the urban population in the EU was exposed to PM2.5 levels above those set by the 2021 World Health Organisation [global air quality guidelines](#).

The highest PM2.5 levels are found in central and eastern European countries (particularly Poland), and in northern Italy.



PM2.5 levels in 2021-2022. *Source: EEA*
■ good ■ fair ■ moderate
■ poor ■ very poor