



**HEALTHY INDIA ALLIANCE**  
for prevention and control of NCDs

# LET'S ACT ON NCDs & AIR POLLUTION

Sensitisation Brief

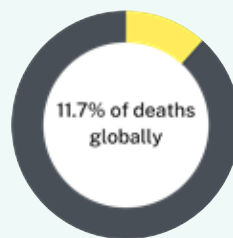


# What is air pollution?

Air pollution is defined as contamination of indoor or outdoor environment due to presence of toxic chemical, physical or biological agents at levels that pose a health risk. Air pollution is a year-round problem with serious implication on our health. The sources of air pollution are the activities or the locations that release the pollutants into the atmosphere. Two sources of air pollution include outdoor (ambient) sources and indoor (household) sources.

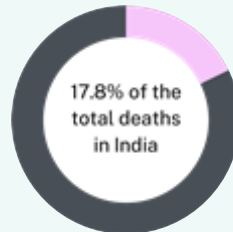
## Who are majorly affected by air pollution?

Women



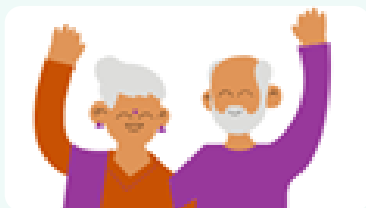
In 2019, air pollution contributed to 11.7% of deaths globally.

Children



1.67 million deaths were caused due to air pollution in India in 2019, accounting for 17.8% of the total deaths in the country.

Elderly



In 2022, the annual average of PM 2.5 level in India was 53.3  $\mu\text{g}/\text{m}^3$  which was nearly 10 times higher than the WHO limit of 5 $\mu\text{g}/\text{m}^3$ .

People living with Non-Communicable Diseases (NCDs)



In 2019, India faced an economic loss of nearly INR 260,000 crores due to premature onset of diseases and premature deaths caused due to air pollution.

Air pollution is not just an environmental issue for a few regions but a public health issue that affects people across the length and breadth of the country.

## Which are the main pollutants?

According to the World Health Organization (WHO), pollutants which are of major public health concern include particulate matter (PM) 10 and PM 2.5, carbon monoxide (CO), ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), lead (Pb) and sulphur dioxide (SO<sub>2</sub>).

## Major sources of air pollution

Pollutants	Outdoor source	Indoor source
PM particles (diameter between 2.5 µm and 10 µm)	Pollen, wind-blown dust, agricultural spaces, roadways and mining areas.	Usage of inefficient stoves or space heaters in poorly ventilated residential areas.
PM 2.5 (Finer particles with a diameter of 2.5 µm and less)	Power generation facilities, industries or vehicles.	
NO <sub>2</sub>	Vehicular emissions, industrial emissions	Fireplaces, furnaces, gas stoves and ovens.
O <sub>3</sub>	Vehicular emissions, industrial emissions	Two main sources of indoor ozone include the outdoor atmosphere and indoor ozone produced by electrical devices.
CO	Motor vehicles, open fires, and incomplete combustion of fuels like petrol, coal, and natural gas.	Incomplete combustion of fuels such as wood, petrol, coal, natural gas and kerosene in simple stoves, wick lamps, furnaces, and fireplaces.
SO <sub>2</sub>	Combustion of fossil fuels for industries and power generation.	Combustion of fossil fuels for domestic heating.
Pb and Pb particulate compounds	Vehicle exhaust of fuel with lead.	Contaminated dust from products such as paints, ceramics, pipes and plumbing materials, solders, gasoline, batteries, and cosmetics.

**Air pollution is a serious risk factor for major NCDs such as:**



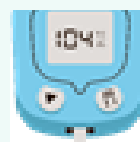
Heart diseases and stroke



Cancers



Respiratory diseases

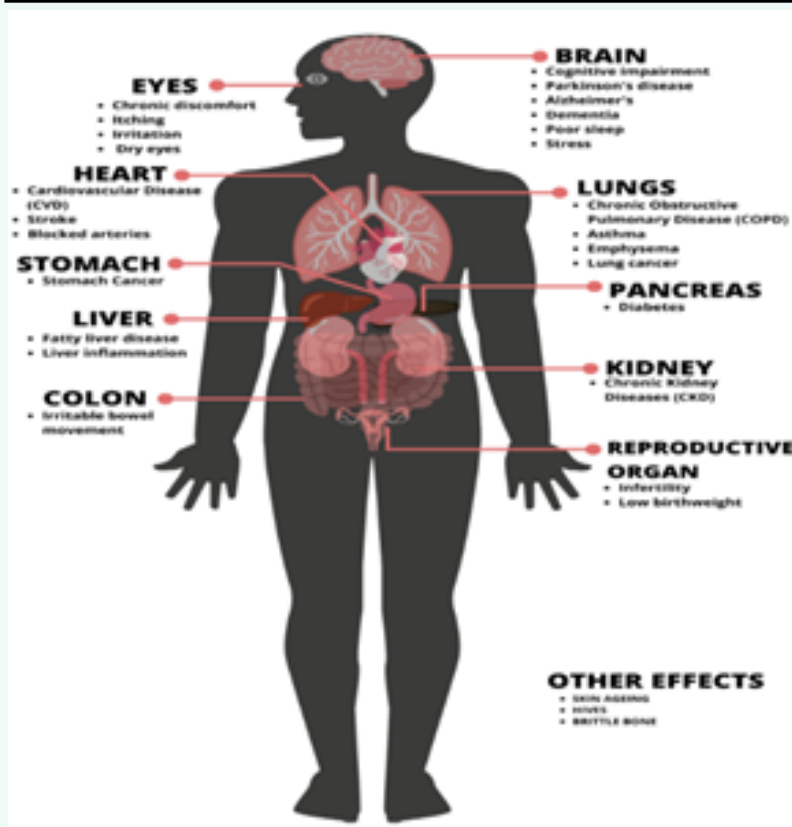


Diabetes



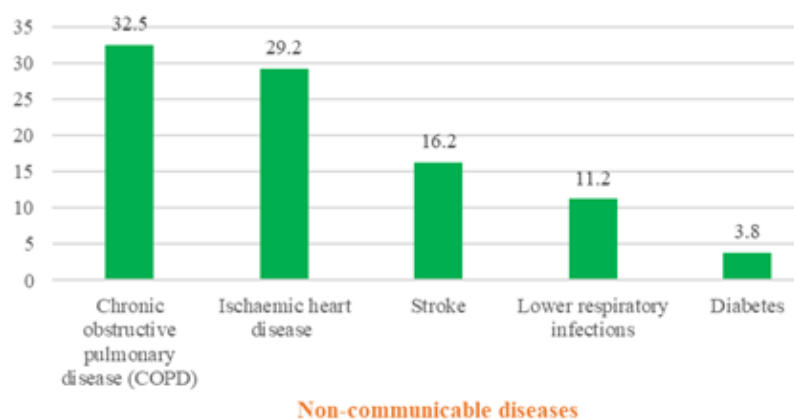
Mental health conditions

**Do you know that exposure to air pollution can lead to NCDs?**



- Short-term and long-term exposure to lethal air pollutants increases the risk for non-communicable diseases (NCDs).
- These small sized pollutants can cross the lungs and enter the blood stream.
- Pollutants thus adversely impact each and every organ of the body and complicate existing health conditions.
- The adverse health effects of air pollution depend on types of exposure, age, pre-existing medical conditions and sources or composition of the pollutants.

**Total deaths caused by air pollution in India (2019)**



In India, out of the total deaths caused by air pollution in 2019, majority of the deaths were due to NCDs like chronic obstructive pulmonary disease (COPD) (32.5%) and ischaemic heart disease (29.2%), followed by stroke (16.2%), lower respiratory infections (11.2%) and diabetes (3.8%).

## Know about the programmatic and policy response to air pollution in India

To tackle the air pollution burden in India, there are various Governmental policies and programmes in place. The key ministries and agencies in India working on addressing air pollution include Ministry of Environment, Forest and Climate Change (MoEFCC), Ministry of Health and Family Welfare (MoHFW), Central Pollution Control Board (CPCB) and National Centre for Disease Control (NCDC).

Name of Programme	Objectives
National Air Quality Monitoring Programme (NAMP) (Launched by MoEFCC)	<p>To determine status and trends of outdoor air quality. To keep a check on whether the prescribed outdoor air quality standards are violated or not.</p> <p>To know more about the programme, visit: Website Link- <a href="https://cpcb.nic.in/about-namp/">https://cpcb.nic.in/about-namp/</a> Twitter Link- <a href="https://twitter.com/CPCB_OFFICIAL">https://twitter.com/CPCB_OFFICIAL</a> <a href="https://twitter.com/moefcc">https://twitter.com/moefcc</a></p>
National Clean Air Programme (NCAP) (Launched by MoEFCC)	<p>To ensure strict implementation of mitigation measures for prevention, and control of air pollution. To augment public awareness and capacity building measures on air pollution.</p> <p>To know more about the programme, visit: NCAP Report Link- <a href="https://moef.gov.in/wpcontent/uploads/2019/05/NCAP_Report.pdf">https://moef.gov.in/wpcontent/uploads/2019/05/NCAP_Report.pdf</a> NCAP Tracker Link- <a href="https://ncaptracker.in/">https://ncaptracker.in/</a> Twitter Link- <a href="https://twitter.com/CPCB_OFFICIAL">https://twitter.com/CPCB_OFFICIAL</a> <a href="https://twitter.com/moefcc">https://twitter.com/moefcc</a></p>
National Programme for Climate Change and Human Health (NPCCHH) (Launched by MoHFW)	<p>To create general awareness among vulnerable communities like children, women and marginalised population, healthcare providers and policy makers regarding impacts of climate change on human health.</p> <p>To know more about the programme, visit: Website Link- <a href="https://ncdc.mohfw.gov.in/index1.php?lang=1&amp;level=1&amp;sublinkid=876&amp;lid=660">https://ncdc.mohfw.gov.in/index1.php?lang=1&amp;level=1&amp;sublinkid=876&amp;lid=660</a> Twitter Link- <a href="https://twitter.com/NPCCHH">https://twitter.com/NPCCHH</a></p>

Name of Programme	Objectives
PAHAL (Pratyaksh Hanstantrit Labh) Gas Scheme	<p>·Promote the usage of cleaner fuels by enabling the LPG consumers to access affordable LPG connections as subsidy amount is directly transferred to their respective bank accounts.</p> <p>To know more about the programme, visit: Website Link- <a href="https://mopng.gov.in/en/marketing/pahal">https://mopng.gov.in/en/marketing/pahal</a></p>
Unnat Chulha Abhiyan	<p>·To develop and deploy improved biomass cookstoves for providing cleaner cooking energy solutions in rural, semi - urban and urban areas using solid fuel for cooking.</p> <p>To know more about the programme, visit: Website Link -<a href="https://pib.gov.in/PressReleaselframePage.aspx?PRID=1525934">https://pib.gov.in/PressReleaselframePage.aspx?PRID=1525934</a></p>
Pradhan Mantri Ujjwala Yojana (PMUY)	<p>·To minimize health issues arising from the use of unclean fossil fuel and to control indoor pollution.</p> <p>To know more about the programme, visit: Website Link - <a href="https://www.pmu.gov.in/index.aspx">https://www.pmu.gov.in/index.aspx</a></p>

## How can we monitor levels of air pollution?

### National Air Quality Index

Air Quality Index (AQI) is a tool developed by CPCB for effective communication of air quality status to people. The complex air quality data of various pollutants is transformed into a single number (index value), colour code and AQI categories. There are six AQI categories, namely Good, Satisfactory, moderately polluted, Poor, Very Poor, and Severe based on the outdoor concentration values of air pollutants and their health impacts.

To know more about the AQI visit  
[https://app.cpcbcr.com/AQI\\_India\\_iframe/](https://app.cpcbcr.com/AQI_India_iframe/)

AQI	Remark	Color Code	Possible Health Impacts
0-50	Good	Green	Minimal impact
51-100	Satisfactory	Light Green	Minor breathing discomfort to sensitive people
101-200	Moderate	Yellow	Breathing discomfort to the people with lungs, asthma and heart diseases
201-300	Poor	Orange	Breathing discomfort to most people on prolonged exposure
301-400	Very Poor	Red	Respiratory illness on prolonged exposure
401-500	Severe	Dark Red	Affects healthy people and seriously impacts those with existing diseases

Image source- Central Pollution Control Board

### SAMEER Application

SAMEER mobile application has been developed by CPCB which is easier to use and provide hourly information about AQI levels for more than 100 cities across the country.

This application can be downloaded from the play store of android devices.

Link-<https://play.google.com/store/apps/details?id=com.cpcb&hl=en&gl=US>

This application can be downloaded from the App store of Apple iOS devices.

Link- <https://apps.apple.com/in/app/sameer-indias-aqi/id1186664744>



Image source- Central Pollution Control Board



## SAFAR- Air (System of Air Quality and Weather Forecasting and Research)

SAFAR-Air is a mobile application developed by the Ministry of Earth Sciences (MoES) to measure and forecast the air quality of metropolitan cities like Delhi, Pune, Mumbai and Ahmedabad.

This application can be downloaded from the play store of android devices.

Link-[https://play.google.com/store/apps/details?id=com.cloud.mobile.android.airqualityindex&hl=en\\_IN&gl=US](https://play.google.com/store/apps/details?id=com.cloud.mobile.android.airqualityindex&hl=en_IN&gl=US)

This application can be downloaded from the App Store of Apple iOS devices.

Link- <https://apps.apple.com/in/app/safar-air/id982823016>

## Portal for Regulation of Air-pollution in Non-Attainment cities (PRANA)

PRANA is a web-portal for monitoring the implementation of NCAP. It disseminates information on air quality management efforts under NCAP to the general population.

To know more about the air pollution control progress in India visit:  
<https://prana.cpcb.gov.in/#/home>



Image source- SAFAR-India



Image source- Central Pollution Control Board



Youth Leaders/  
Groups



People living  
with NCDs



Medical  
Fraternity



Government Departments  
(Health, Environment, etc.)



Researchers/  
Academicians



Civil Society Organisations  
(CSOs)/ Non-Governmental  
Organisations (NGOs)

**Why meaningful involvement of citizens and communities is important to tackle air pollution?**

As responsible citizens and communities each one of us has a key role to play in air pollution mitigation. There are several partners who need to join hands and work collaboratively with Government agencies and Civil Society Organisations (CSOs) to monitor and curb factors that increase air pollution to life threatening levels

## How can we change behaviours and practices to reduce air pollution?

### DO'S

- Use clean fuels such as liquefied petroleum gas (LPG), natural gas, and biogas
- Switch to public transport like metros, buses, opt for carpooling, switch to electric vehicles, use cycles for short distance
- Monitor the AQI to know about the pollution levels to minimise personal exposure
- Avoid outdoor activity when and where air pollutants are higher
- Ensure adequate ventilation
- Regular pollution control check for vehicles
- Switch off the engine of vehicles at traffic signals
- Actively consult doctors regarding any discomfort/health issues arising due to exposure to air pollution

### DON'TS

- Smoking
- Usage of solid fuels like coal, charcoal, dried cow dung cakes, crop residual and wood for cooking and heating purposes
- Usage of mosquito coils
- Usage of agarbatti/dhoop in closed rooms without adequate ventilation
- Ignoring vehicle pollution control rules and not updating the Pollution Under Control (PUC) Certificate
- Using personal vehicles even for short distances
- Keeping the vehicles on at traffic signals
- Avoiding signs and symptoms of any discomfort/ health issues caused due to air pollution like irritation of eyes, chest congestion, sneezing and coughing. (Signs and symptoms are not limited to these as the pollutants affect each and every organ of the body)

Government agencies

Youth

People living with NCDs

Resident Welfare Associations  
(RWA)

Educational Institutions

Educational Institutions

CSOs

Medical institution

Communication professionals

Social media influencers

Farmers

Industries

## How can we partner in multi-stakeholder efforts to address air pollution in our community, city, state and country?

- Get actively involved in public sensitisation campaigns organised by local authorities, Governments and CSOs.
- Regularly monitor air quality and apply information to develop key messages and action plans for minimising exposure.
- Partner with key stakeholders (like CSOs, UN agencies) to build your capacity to be ambassador for clean air norms.
- Organise community engagement activities such as poster competitions, slogan writing competitions, street play competitions.
- Promote and support Government initiatives such as NPCCHH, NCAP, NAMP and others to ensure public support for such efforts.
- Leverage social media to disseminate strategies and initiatives to curb air pollution.
- Report violations of policy guidelines to relevant Government authorities so that appropriate action can be taken.
- Constitute working groups/committees at the community level to develop, implement and monitor an action agenda for people-led action on air pollution.

### Relevant links for more information on air pollution action

- [https://www.care4cleanair.com/files/ugd/bce95d\\_01f4df4c2a3447d6abdd8d8cd0eb1788.pdf](https://www.care4cleanair.com/files/ugd/bce95d_01f4df4c2a3447d6abdd8d8cd0eb1788.pdf)
- <http://www.indiaenvironmentportal.org.in/files/file/Air%20Pollution%20COVID%20Mitigation.pdf>
- [https://www.researchgate.net/publication/361339566\\_skulom\\_mem\\_aura\\_unake\\_asapasa\\_yatayata\\_pradusana\\_ka\\_jokhima\\_kama\\_karana\\_baccomm\\_skulom\\_aura\\_sthaniya\\_samudayom\\_ke\\_li'e\\_margadarsana\\_Mitigating\\_Exposure\\_to\\_traffic\\_Pollution\\_In\\_and\\_Around\\_schools\\_Guidan](https://www.researchgate.net/publication/361339566_skulom_mem_aura_unake_asapasa_yatayata_pradusana_ka_jokhima_kama_karana_baccomm_skulom_aura_sthaniya_samudayom_ke_li'e_margadarsana_Mitigating_Exposure_to_traffic_Pollution_In_and_Around_schools_Guidan)
- [https://issuu.com/universityofsurrey/docs/uos\\_kitchen\\_guidance\\_a5\\_english\\_singles\\_hires](https://issuu.com/universityofsurrey/docs/uos_kitchen_guidance_a5_english_singles_hires)

### ACKNOWLEDGMENT

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