

GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

RAJYA SABHA
UNSTARRED QUESTION NO. 1003
TO BE ANSWERED ON 13.02.2025

Impact of high AQI levels on humans

1003. DR. LAXMIKANT BAJPAYEE:

Will the Minister of ENVIRONMENT, FOREST AND CLIMATE CHANGE be pleased to state:

- (a) whether government has conducted studies on the impact of high AQI Levels in Delhi/NCR on human lungs, blood chemistry and overall health over the last several years as AQI Levels remain at hazardous levels for about 4 to 5 months in a year;
- (b) impact on overall health as a result of living in a high AQI level environment for several months; and
- (c) the remedial measures available to the helpless residents of Delhi/NCR to protect themselves in this situation?

ANSWER

MINISTER OF STATE IN THE MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE
(SHRI KIRTI VARDHAN SINGH)

(a) to (c) : National Environmental Health Profile Study has been awarded to assess human health impact in consequence of exposure to air pollution in 20 selected cities including Delhi, across the country.

Government launched National Air Quality Index (AQI) in the year 2015, through which air quality data of eight pollutants is transformed into single number for effective communication of air quality status. There are six AQI categories namely, Good, Satisfactory, Moderately Polluted, Poor, Very Poor and Severe and are based on ambient concentration of air pollutants and their likely health impacts. Daily AQI bulletin for 289 cities is disseminated through Central Pollution Control Board website and SAMEER app. Details of AQI and its corresponding health impacts are placed at **Annexure-I**.

With a view to abate and control air pollution in Delhi NCR, the Commission for Air Quality Management in NCR and Adjoining Areas (CAQM) has issued a comprehensive Policy to Curb air pollution in the National Capital Region, stipulating sector-specific action points, quantifying targets along with timelines and implementation plan by various agencies in NCR States.

Graded Response Action Plan (GRAP) has been prepared which identifies graded measures and implementing agencies in response to various AQI categories namely, Poor, Very Poor,

Severe, and Severe+ as an emergency response. GRAP is implemented in Delhi NCR by Commission for Air Quality Management in NCR and Adjoining Areas based on AQI forecast provided by India Meteorological Department for control of air pollution in Delhi-NCR during winter months.

Several teams are deployed during the period of high AQI levels in Delhi for conducting inspections of air polluting industries, C&D sites, DG sets in Delhi-NCR to check implementation status of pollution control measures and compliance of other provisions of the Air (Prevention and control of pollution) Act, 1981.

Further, public complaints regarding air pollution issues in Delhi NCR are taken through Sameer App, Emails and Social Media Networks and assigned to relevant agencies for quick redressal.

Due to various efforts taken in Delhi NCR to improve air quality, the number of Good-Moderate AQI categories in 2024 has increased to 209 days from 110 days in 2016 and number of Poor-Severe AQI categories have decreased to 157 days in 2024 from 244 days in 2016.

Details of Air Quality Index and associated health impacts

AQI values and corresponding ambient concentrations (health breakpoints) for the identified eight pollutants are as follows:

AQI Category, Pollutants and Health Breakpoints								
AQI Category (Range)	PM10 24-hr	PM2.5 24-hr	NO2 24-hr	O3 8-hr	CO 8-hr(mg/m)	SO2 24-hr	NH3 24-hr	Pb 24-hr
Good (0-50)	0-50	0-30	0-40	0-50	0-1.0	0-40	0-200	0-0.5
Satisfactory (51-100)	51-100	31-60	41-80	51-100	1.1-2.0	41-80	201-400	0.5 –1.0
Moderately polluted (101-200)	101-250	61-90	81-180	101-168	2.1- 10	81-380	401-800	1.1-2.0
Poor (201-300)	251-350	91-120	181-280	169-208	10-17	381-800	801-1200	2.1-3.0
Very poor (301-400)	351-430	121-250	281-400	209-748*	17-34	801-1600	1200-1800	3.1-3.5
Severe (401-500)	430 +	250+	400+	748+*	34+	1600+	1800+	3.5+

*One hourly monitoring (for mathematical calculations only)

AQI	Associated Health Impacts
Good (0–50*)	Minimal Impact
Satisfactory (51–100*)	May cause minor breathing discomfort to sensitive people.
Moderately polluted (101–200)	May cause breathing discomfort to people with lung disease such as asthma, and discomfort to people with heart disease, children and older adults.
Poor (201–300)	May cause breathing discomfort to people on prolonged exposure, and discomfort to people with heart disease
Very Poor (301–400)	May cause respiratory illness to the people on prolonged exposure. Effect may be more pronounced in people with lung and heart diseases.
Severe (401-500)	May cause respiratory impact even on healthy people, and serious health impacts on people with lung/heart disease. The health impacts may be experienced even during light physical activity.