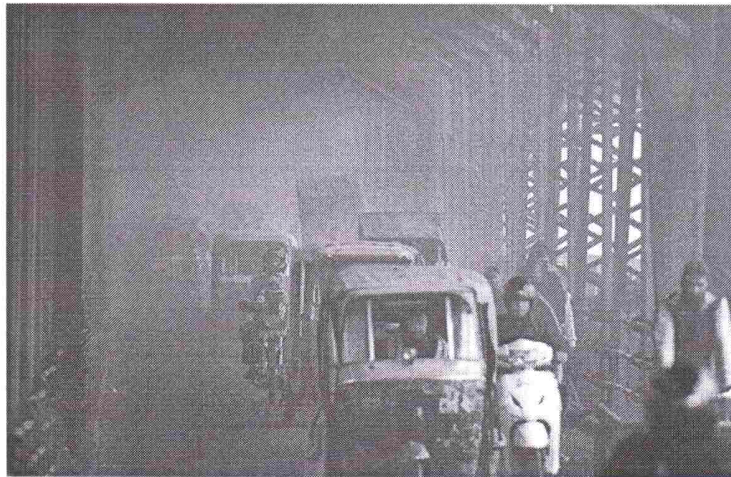


India Today

# Vehicular pollution reason behind rise of ozone gas in Delhi

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The sudden boom in diesel cars and trucks in Delhi and the National Capital Region (NCR) has escalated the level of ozone gas in the air. Ozone, which forms an ultraviolet (UV) protection layer in upper reaches of the atmosphere, is extremely harmful when produced at surface level. The primary source of ozone production close to human habitations is said to be fuel exhaust, mainly, nitrogen oxides and volatile hydrocarbons.

Ozone formation is considered a summer phenomenon. Sunlight and high temperature facilitate its synthesis from NO<sub>2</sub> and volatile organic compounds during the day. However this year, ozone levels have been "very high and consistently so", say scientists. The permissible limit for ozone is 50 parts per billion (ppb) in eight hour average, but in many parts of Delhi, over the past 15 days, it has been in the range of 60-120 parts per billion.

Delhi University's North Campus, which remains hot for most part of the day, recorded 115 ppb of ozone on May 27. Dheerpur and Aya Nagar also registered high ozone levels on the same day, making it the worst ozone day for Delhi till now this year. Pusa Road and Lodhi Road were far better, thanks to the denser green cover. It has to be recalled that the temperature from May 22 to 27 has been hovering between 41 degree Celsius to 45.5 degree Celsius.

Gufran Beig, Project Director, System of Air Quality and Weather Forecasting Research (SAFAR), said, "All parts of Delhi have breached the permissible limit but those parts which

have a relatively higher temperature, by even 1-2 degree Celsius, have shown more ozone concentration. We are not seeing any relief till June 2 at least when the heat wave is expected to subside."

Ozone, notably, is even more dangerous to human health as compared to other air pollutants like NO<sub>2</sub>, SO<sub>2</sub> and CO as it directly impacts the organs. It is measured by the hour as compared to 24 hour averages for all other pollutants. Dr Raj Kumar, HOD, Respiratory allergy and acquired immunology at Vallabhbhai Patel Chest Institute, said, "It affects all parts of the body. It has a corrosive effect on the lungs and the heart." Ozone gas is often used for industrial purposes.

Anumita Roychowdhury of the Air Pollution and Clean Transportation programme, Centre for Science and Environment, said, "Our view of air pollution in Delhi has become limited to only Particulate Matter 2.5 which causes smog in winters. But large amounts of ozone formation during summer is of equal concern. Peaking of ozone to 120 ppb this year is a reminder that Delhi is in the grip of a multi-pollutant crisis and vehicles are the key source." She adds, "NO<sub>x</sub> reduction strategy must prevent explosion in numbers of diesel cars and SUVs as advanced emissions control technologies and clean diesel fuel are not available in India. Diesel vehicles emit three times more NO<sub>x</sub> than a petrol vehicle."

Echoing similar views, Dr Sai Kiran Chaudhary, pulmonologist, Delhi Heart and Lung Institute, said, "The amount of ozone produced is directly proportional to the intensity of heat and sunlight. It causes immediate breathing difficulties and aggravates existing respiratory and cardio-vascular conditions. It affects the development of children's lungs as well."