

“Instead of using AQI to monitor air pollution, we should use AQHI—Air Quality Health Index”

DR SOUMYA SWAMINATHAN, a pediatrician and global expert in tuberculosis, says that cleaner air is possible with the right policies, better technology and public participation. She is the Chair of M. S. Swaminathan Research Foundation (MSSRF), and the former Director General of ICMR.

● **You call air pollution an ‘invisible’ health crisis.**

Unlike spoiled food or dirty water we don't really see the pollutants in the air. These are invisible particles that travel deep into our bodies causing disease. The average Indian is breathing in air the quality of which is ten times worse than the limits set by the World Health Organization (WHO). According to WHO, air pollution causes almost 8 million deaths a year, and about 2 million of those



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are in India!

● What are the major air pollutants that have created India's biggest public health crisis?

WHO classifies pollutants as particulate matter (PM), gases like ozone, carbon monoxide, sulfur dioxide and nitrogen dioxide.

Particulate matter are little droplets in the air composed of the soot, all these gases and water vapour. PM 10 are particles that are 10 microns in size (one fifth the width of human air). PM 2.5 is even smaller and this can travel beyond the lungs of a human being and cause distress beyond the lungs. It increases the risk of heart attacks, strokes, diabetes and even dementia. It can impact brain development in babies and children. In 2013, the International Agency for Research in Cancer, an affiliate of WHO, said air pollutants could cause cancer.

Harmful gases such as [ground-level] ozone form when emissions from vehicles, waste matter burning or factories, react with ultraviolet radiation. It causes what doctors describe as "sunburn of the lungs". Carbon monoxide from vehicular emissions and factories binds with the haemoglobin and reduces the oxygen carrying capacity of the blood and can be fatal.

Sulfur dioxide and nitrogen dioxide, produced due to burning of waste, can worsen asthma and other respiratory diseases.

● But you say all is not lost and we can pull back from the brink?

There are cities that have implemented strong policies and have reduced air pollution and have seen almost instant benefits. Studies showed admissions to hospitals with heart attacks reduced. Researchers are recommending that instead of using just the Air Quality Index (AQI) to monitor air pollution, we should use the Air Quality Health Index (AQHI) which links the level of air pollution to the health of the people. This could act as an early warning system that could actually help people take preventive action.

● So, air pollution reversal is actually a

possibility?

We have evidence from around the world to say it can be done. In the United Kingdom, London in the 1940s and 50s was staggering under the great smog. Recently when I was in London, the AQI was 3. London has ultra low emission zones where there is a restriction of cars, and using public transport, walking and cycling are greatly encouraged.

Similarly in Beijing, China, where the very high pollution was referred to as airpocalypse, the pollution was brought down by nearly 60 to 70 per cent. Cardiovascular mortality in both London and Beijing has come down.

● What measures can we adopt in India to tackle the problem?

It has to be a multisectoral action plan with a lot of investment by the government and ensuring rules are strictly adhered to. We are making progress in India with the National Clean Air Programme. We need more air quality monitors in smaller towns and villages. Technology has to be continuously updated. The pollution control boards should act on the data they receive, and there should be strict governance. Use

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of renewable energy should be actively encouraged.

The launch of the Swachh Hawa, Swasth Delhi project by the Delhi government with World Bank Support is a move to link air quality to people's health. It is an excellent multisectoral plan with science based actions to improve air quality.

● What can we do as individuals to improve air quality?

Solving the problem of air pollution will require government action, industry participation, and community effort. As individuals, we can use more public transport or walk or cycle to places; segregate waste at home before disposing it; conserve electricity; switch to cleaner energy and cooking fuels where possible, and most importantly staying informed about the air quality in our area and advocating cleaner air in our locality, city, town or village. **OA**

