

AIR POLLUTION CAN POSE SERIOUS THREAT TO BRAIN HEALTH: STUDY

Relevant for: Environment | Topic: Environmental Pollution - Air, Water, Soil & E-waste

Although the impact of inhaling polluted air on the lungs is well known, now the researchers have revealed that it can pose a serious threat to brain health as well. The study, published in the journal *Chemical & Engineering News*, details how researchers are connecting air pollution to dementia, autism and other neurological diseases.

Air pollution has become a fact of modern life, with a majority of the global population facing chronic exposure and scientists at American Chemical Society in the US are now beginning to understand how it affects the brain.

Arising from vehicle emissions, power plants and factories, air pollution is a complex soup of gases, metals, organic contaminants and other materials. "Over 90 per cent of the world's population is continually exposed to particulate matter (PM) pollution, which is known to penetrate deep into the lungs, at levels above the World Health Organisation's (WHO) guidelines," Contributing Editor Janet Pelley, wrote. "Inhaling these substances causes inflammation, which is the body's healthy response to injury or infection, but over time chronic inflammation can damage healthy tissues," Pelley added.

Although the correlation between PM and lung damage is clear, scientists believe that these harmful particles can also impact the brain, either directly or indirectly. In a recent study, infant mice exposed to air pollution showed altered social behaviours similar to those of autistic children. Postmortem observations revealed inflammation and other abnormalities in the mice's brains resembling changes seen in children with autism. Researchers suspect that iron particles in PM could play a role, as they are known to cause cell death in Parkinson's and Alzheimer's diseases.

In mice, inflammation caused by breathing polluted air also appears to boost the production of amyloid plaques, the sticky protein fragments associated with neurological diseases like Alzheimer's. While the evidence is mounting that air pollution can pose a serious threat to brain health, scientists emphasize that their research must coincide with policy changes to reduce pollution worldwide.

Last month, another study, presented at the European Academy of Neurology (EAN) Virtual Congress, revealed that air pollution could be a risk factor for the development of multiple sclerosis (MS) among people residing in urbanised areas. Multiple sclerosis (MS) is a disease in which the immune system eats away at the protective covering of nerves.

—IANS

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