

Air pollution can affect your mental wellbeing by Dr. Sonia Lal Gupta Senior Neurologist

NOIDA, UP, INDIA, October 28, 2020 /EINPresswire.com/ -- AIR POLLUTION CAN AFFECT YOUR MENTAL WELLBEING

Air pollution is a major health concern and it has various adverse effects on our body. Though most of us are aware of respiratory and cardiovascular problems caused by air pollutants, new studies show that it can adversely affect our brain functions too.

The rising levels of air pollution is a concern for everyone especially in urban areas where pollution from heavy traffic and industrial activities can disrupt life in general. Air pollution includes particulate matter with metals, organic particles, gases which can affect several organs depending on the density of the pollutants.

Ultra-fine particles may breach the blood-brain barrier, which can trigger an immune response that can lead to dysregulation of Microglia, the immune cells in the brain. They may mistake these particles as pathogens which may trigger the release of chemicals as part of the immune response leading to inflammation and chronic inflammation in the brain has been associated with neuro degeneration.

These fine particles need not even enter your nervous system to cause brain health issues, the presence of these particles even in the lung or bloodstream can trigger widespread inflammation as part of the body's immune response.

Impact of air pollution on the Brain

Several studies have shown that the Traffic-Related Air Pollution (TRAP) affects the central nervous system and has an adverse effect on cognitive and behavioral functions. Recent findings suggest that it may lead to neurological degeneration, Epilepsy, attention deficit disorder, Autism, reduced IQ, decreased memory and can affect academic performance too.

Relation with Stroke

Adolescents and Adults both are at huge risk from Air Pollutants, prolonged outdoor PM2.5 exposure can cause a decrease in total cerebral brain volume and multiplies the chances of covert brain infarcts, commonly known as "Silent" Strokes. Those not familiar with the potential

implications should understand that a decrease in cerebral brain volume is an indicator of brain degeneration which will eventually lead to dementia and cognitive dysfunctions.

Relation with Epilepsy

Air Pollutants with a high amount of carbon monoxide, ozone, nitrogen dioxide, sulfur dioxide, large particulate matter, and fine particulate matter have been found in the patients with epilepsy. Pollutants increase the inflammatory mediators and sources for oxidative stress. It is hypothesized by the researchers that these pollutants ultimately alter the neurological function of the brain leading to brain inflammation.

Relation with Cognition

A neuro developmental disorder with symptoms such as social interaction impairment, inability in verbal and nonverbal communication, and repetitive behaviour. Some Researchers believe that Maternal exposure to air pollution during the prenatal period can lead to Autism and evidence have been found that mothers living in the proximity of high pollution areas during the third trimester lead to Autism in the child.

Particulate Matter and Heavy Metals cause Central Nervous System to age rapidly. Vehicular emissions constitute of gases as well as heavy metals such as lead which cause in form of particulate matter enter our system on a daily basis and has an adverse effect on our overall health and mental health.

These pollutants as stated earlier can cause reactions that cause Neuro inflammation which increases the rate of Neuro degeneration (or rapid ageing of the central nervous system). Several neurological diseases such as Parkinson's, Multiple sclerosis, Alzheimer's etc. are caused by Neuro inflammation.

Air Pollution has effects far worse than any epidemic, however, due to lack of knowledge we tend to neglect its severe health effects attributing these serious diseases to other causes. Air pollutants can even alter the gene expression by affecting the gene regulatory mechanisms, leading to unwanted health conditions.

So, should we be just fearful of air pollution or should express our inability to control the situation and learn to live with it? We may not be able to make a huge impact to reduce the air pollution, we can surely keep a check on our mental health in consultation with a neurological specialist to prevent the severe adverse effects of pollutants on our brain.

(Research excerpts taken from NCBI report, Metro Hospitals does not claims right to the data and does not claim ownership of the data. All trademarks and rights belong to the respective owners.)

Author:

Dr. Sonia Lal Gupta

US Board Certified Senior Neurologist (Headache and Migraine Specialist)

Director Metro Group of Hospitals

Gaurav Kamal

Metro Group Of Hospitals

+91 8800547733

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