

From the Desk of the Patron

Are we really conscious of our existence?

Recently, north India, including Delhi-NCR, faced severe air pollution with AQI levels reaching 500, triggering health emergencies, school closures, and work-from-home advisories. Hospitals reported a surge in heart attacks and asthma cases due to toxic air quality. Major cities like Patna, Lucknow, and Chandigarh also experienced hazardous air. The Delhi government imposed stage 4 restrictions under the Graded Response Action Plan, grounding flights and affecting daily life. **The alarming air quality in Delhi has reached nearly ‘Severe plus’ levels prompting the implementation of Stage IV measures under the Graded Response Action Plan (GRAP).** These measures aim to mitigate pollution and safeguard public health. Key steps include; Truck Restrictions: Non-essential trucks are prohibited from entering Delhi. All non-essential construction and demolition activities are suspended to limit dust and particulate emissions. Non-essential vehicles are barred, encouraging reduced vehicular pollution. Offices are advised to implement remote working to curb commuting-related emissions. Schools were shifted to virtual classes to protect students from exposure. Authorities issued warnings, especially targeting vulnerable groups like children, the elderly, and those with pre-existing conditions. The Commission for Air Quality Management (CAQM) actively oversees compliance with these measures. State authorities are tasked with ensuring enforcement to address the crisis effectively. **These emergency actions aim to provide immediate relief, though long-term strategies are crucial to prevent recurring pollution episodes.**

The increase in the intensity of cyclones and floods worldwide covering most countries including India has caused a large number of fatalities and billions of dollars of property loss. The Vietnam typhoon, Yagi on 9th Sept 2024 has caused a substantial loss of property and lives Africa is bearing the brunt of climate change despite producing a tiny percentage of global emissions. Floods killed about 1,500 people and displaced more than one million in West and Central Africa this year, according to UN aid agency OCHA. The rains also overwhelmed dams in Nigeria and Sudan. The devastating rains and floods in Rio Grande do Sul, Brazil have shaken the economy of the country. The flooding in south, southeast and east Asia viz., India, Bangladesh, Afghanistan, Vietnam, Philippines, and China have witnessed unprecedented floods due

to climate change phenomenon resulting in billions of dollars of property loss and fatalities of thousands of lives. **The 2024 Wayanad landslides, which struck Kerala on July 30, 2024, stand as one of India’s most devastating natural disasters in recent history.** The catastrophe, triggered by incessant heavy rains, affected the villages of Punchirimattam, Chooralmala, Mundakkai, and Vellarimala in the Meppadi panchayat, Vythiri taluk, Wayanad district. The impact was immense, resulting in over 420 deaths and 397 injuries, alongside widespread destruction of homes, infrastructure, and livelihoods. The scale of destruction was unimaginable, with over 420 people confirmed dead, while 397 people were injured. The 2024 Wayanad landslides were a series of landslides that occurred in Punjirimattom, Mundakkai, Chooralmala, and Vellarimala villages in Meppadi panchayat, Vythiri taluk in Wayanad district, Kerala. The landslides were caused by heavy rains that caused hillsides to collapse, destroying the areas below. Deforestation, seismic sensitivity, poor building construction, and global warming have been identified as possible causes of the landslides and fatalities. A changing climate means that disasters like the landslides in Kerala’s Wayanad on July 30 will increase in frequency and intensity, an expert has told *Down To Earth (DTE)*. Also, the poorest and most marginalised sections of society are and will be most affected by such disasters, said Associate Professor Pierre Rognon in the School of Civil Engineering, University of Sydney, Australia. More than 1,555 houses and other buildings including schools, a dispensary, the panchayat bhawan, the electricity board office, and 136 community buildings were damaged. Additionally, 290 shops, 124 km (77 mi) of electricity infrastructure, two transformers, 1.5 km (0.93 mi) of rural roads, and three bridges were affected. The landslides also devastated a total of 600 ha (1,500 acres) of land, including 310 ha (770 acres) of farmland. After the landslides, business institutions including hundreds of shops in Chooralmala and Mundakkai were shut down by officials, citing the danger of additional landslides. According to Kerala Vyapari Vyavasayi Ekopana Samithi, these restrictions cost more than 25 crore (US\$3.0 million) to the business community in the impacted areas. Harisons Malayalam lost 10 ha (25 acres) of tea estate, which cultivates an estimated 230 tonnes of tea produce worth 3.5 crore (US\$420,000); forty-one estate employees and forty-eight of their family members were either missing or dead. Research showed the

event triggered a debris flow of approximately six million cubic meters — enough to fill 2,400 Olympic-sized swimming pools. **The 2024 Wayanad landslides serve as a sombre reminder of the increasing environmental challenges posed by human activity and climate change, demanding immediate and long-term responses to safeguard lives and ecosystems.**

Microplastics are tiny pieces of plastics, smaller than five millimetres (0.2 inches), which form, as larger plastics break down, either by chemically degrading or physically wearing down into smaller pieces. Microplastics in the brain were found to be much more than any other human organ. **Scientists have raised alarm after discovering microplastics in critical human organs like lungs, placentas, livers, kidneys, reproductive organs, knee and elbow joints, blood vessels and bone marrow including the brain. They are calling for more stringent measures to control plastic pollution. A new study has found that a lot more microplastics are present in the human brain than in any other organ. The researchers described the brain as “one of the most plastic-polluted tissues yet sampled”.**

The recent study of the UN Environment programme highlights the alarming extent to which human activity, specifically plastic pollution, has permeated even the deepest ocean, Mariana Trench, one of Earth’s most remote and inaccessible regions with more than 3,000 pieces of manmade debris recorded from 5,010 dives, researchers found that a significant portion—over a third—consists of macro-plastics, mostly single-use items such as bags and bottles. Disturbingly, these plastics persist thousands of meters below the ocean surface, where ecosystems are highly sensitive, slow-growing, and often home to unique species.

The recent machine learning model mapping of plastic pollution hotspots globally sheds light on how waste management gaps, especially in developing countries, contribute to environmental pollution. The model shows that uncollected waste, rather than littering, is the largest pollution source worldwide, with an estimated 36 million tonnes of plastic (68% of total pollution) entering the environment each year due to a lack of waste collection systems. Open burning of waste is prolific, accounting for 57% of all plastic pollution worldwide by weight. This involves burning waste on open fires without any control to prevent hazardous emissions from reaching the environment or harming our health. This practice is popular, possibly because it seems to make the waste disappear, reducing the

burden on waste management authorities and reducing the unsightliness of waste dumped on land. India, where only 81% of waste is collected, emerges as the largest contributor, responsible for 9.3 million tonnes of microplastic emissions annually.

Global warming refers to the gradual increase in Earth’s average surface temperature due to the accumulation of greenhouse gases (GHGs) like carbon dioxide, methane, and nitrous oxide. This phenomenon, primarily driven by human activities like burning fossil fuels, deforestation, and industrial emissions, is a critical aspect of climate change. **Climate change encompasses broader effects, including rising sea levels, shifting weather patterns, and increased frequency of extreme weather events. The effects of climate change disproportionately impact vulnerable populations, particularly in low-income and developing countries. These communities face heightened risks due to reduced access to resources. Crop failures and water scarcity jeopardize food and water security. Damage to infrastructure, agriculture, and livelihoods leads to poverty and forced migration.** Rising temperatures and natural disasters increase diseases like malaria, heatstroke, and malnutrition. **Indigenous people, coastal communities, and those dependent on agriculture are among the most affected communities.** Climate change intensifies the frequency and severity of natural disasters. Warmer air holds more moisture, leading to intense rain and floods. Deforestation and erratic rainfall destabilize slopes, triggering landslides. Warmer ocean temperatures fuel more powerful storms. Hotter, drier conditions create ideal environments for wildfires. Prolonged dry spells devastate agriculture and water supplies. It disrupts ecosystems, causing habitat loss and extinction of species. Examples include Coral bleaching due to rising ocean temperatures, Disruption of migratory patterns for birds and marine life, and Loss of forests due to wildfires, pests, and deforestation. Coastal cities face the threat of submergence due to melting ice caps and glaciers adding freshwater to oceans. Warmer water expands, raising sea levels. Excessive groundwater extraction causes land subsidence. Cities like Jakarta, Venice, and Miami are already experiencing sinking and flooding. Mitigation Strategies are transition to renewable energy (solar, wind, hydro), reforestation and afforestation to absorb CO₂, promoting energy efficiency in industries and households, carbon pricing to reduce emissions, building resilient infrastructure to withstand disasters, developing early warning

systems for cyclones and floods, implementing sustainable agriculture and water management practices, coastal protection through mangrove restoration and seawalls. Global Initiatives are the Paris Agreement to limit global warming to below 2°C, the United Nations Sustainable Development Goals (SDGs) to promote climate action and sustainability, the Green Climate Fund to Support developing nations in climate resilience projects, conducting awareness programs on sustainable living, encouraging grassroots movements to address local climate challenges.

Strengthening global commitments under agreements like the Paris Accord to reduce greenhouse gas emissions, investment in adaptive infrastructure in vulnerable regions to reduce the impact of natural disasters, restrictions and ban on single-use plastics and incentivize alternatives, development in establishing robust waste management systems, **large scale plantation with proper care for their growth, leverage of AI models to identify and address pollution hotspots effectively.** Educational campaigns among communities about sustainable practices like recycling and reducing plastic use, expansion of studies on the health impacts of microplastics to guide healthcare policy and advocacy are some remedial measures for sustainable living.

Yoga plays a vital role in leading a safe existence amid a high degree of air pollution. So, we became tempted to present some relevant facts related to yoga for maintaining good health with the immune system during the severe air pollution in the atmosphere. An article was published in Hindustan Times on 09 November 2024 regarding the benefits and significance of yoga asanas and pranayama during the polluted atmosphere of a city. **Yoga asanas and breathing techniques can help get rid of toxins and boost lung function amid growing concerns about air pollution. With Delhi NCR shrouded in a thick blanket of smog, pollution levels are touching severe levels, putting our respiratory health at grave risk. Long-term exposure to harmful pollutants can damage lung function and cause diseases like asthma, chronic obstructive pulmonary disease (COPD) and lung cancer.** While we can do little about the deteriorating air quality, it is important to take measures that can safeguard our respiratory health. Experts say that outdoor activities should be avoided during peak pollution hours and cleanse indoor air by keeping the surroundings dust-free and installing air purifiers. Apart from these steps, Yoga can be quite effective in enhancing lung

function and boosting our immune system. **Deep breathing can help the lungs to eliminate toxins, improve oxygen flow and boost respiratory health. Controlled breathing techniques can help tackle lung inflammation.** Hansaji Yogendra, Director, of The Yoga Institute shares three Yoga asanas and three breathing techniques to beat pollution and improve respiratory health. Ustrasana, or the camel pose, is a beneficial yoga asana for respiratory health **Regular practice of Ustrasana can aid in expanding the chest and increasing oxygen intake, making it a valuable addition to your yoga routine for combating pollution's effects on the respiratory system.** Bhujangasana is a yoga asana that mimics the posture of a cobra with a raised head. This pose is particularly beneficial for combating the effects of pollution on your respiratory system. Ustrasana (camel pose) involves a deep backbend, stretching the chest and throat. This asana helps open up the lungs and improve lung capacity. Ustrasana also promotes better posture and can relieve tension in the neck and shoulders. Bhujangasana (cobra pose) stretches the chest and opens up the lungs, facilitating better airflow. **Regular practice can help in reducing the strain on the respiratory muscles and enhancing lung capacity.** Sirsasana, or the headstand, is an advanced yoga pose that offers numerous health benefits. By reversing the body's gravity, it promotes better circulation of blood and oxygen to the brain and lungs. **This asana can help in detoxifying the body and strengthening the respiratory system.** Pranayama is the ancient art of breath control, an integral part of yoga. Here are a few pranayama techniques that can significantly help combat pollution. The breathing technique in Kapalabhati involves forceful exhalations through the nose while keeping the inhalations passive. Kapalabhati helps in clearing the respiratory passages and enhancing lung capacity. **Regular practice can assist in removing toxins from the body and improving oxygen intake.** Anulom Vilom is also known as alternate nostril breathing, Anulom Vilom is a calming pranayama technique. **It aids in balancing the flow of energy, reduces stress, and enhances lung efficiency. By practising this technique, you can strengthen your respiratory system and build resistance against pollution-related ailments.** Bhastrika is a rapid and powerful breathing technique that involves forceful inhalations and exhalations. **It boosts oxygen circulation in the body and helps release carbon dioxide.**

Summarising climate actions, the address of

global warming and climate change requires collective and global efforts. Yoga also plays a vital role in maintaining safe respiratory health with an increased immune system for our sustainable existence. The convergence of these crises demands urgent, coordinated action globally to protect humanity, biodiversity and the planet. By integrating these efforts into policy and practice, humanity can mitigate the adverse effects of climate change,

support vulnerable communities, and create a sustainable future for generations to come. **Every climate action, no matter how small, contributes to the larger goal.**

Compilation and revamping

Dr. B. Mishra,
Patron
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