Health Hazards of Plastic Pollution Explained | Human & Environmental Impact

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Health Hazards of Plastic Pollution Latest News

- Negotiations among nearly 180 countries in Geneva failed to yield consensus on a binding international treaty to curb plastic pollution.
- While the United Nations Environment Programme (UNEP) has already adopted a resolution recognising the urgency of the issue, only a legally binding pact would compel nations to act.
- However, deep divisions persist: some countries argue that the treaty should focus narrowly on plastic waste management, while others insist it must also tackle plastic production itself.
- Another key dispute lies in whether developed countries should provide financial support to developing nations for implementing plastic curbs.
- The most contentious point, however, is the recognition of plastics' role in human health — a divide that has stalled meaningful progress on drafting the agreement.

Increased Use of Plastic

- Plastic has become the ultimate symbol of the industrialised, consumption-driven economy due to its versatility, durability, and low production cost.
- Derived largely from fossil fuels, plastic can be moulded into a vast array of products — from essential items such as aircraft and medical equipment to disposable packaging and cosmetic decorations.
- Its affordability compared to alternatives like glass or aluminium has accelerated its global spread.

Challenges from Plastic

- Ubiquitous nature of plastic has turned it into the **primary source of litter**, exposing weaknesses in waste management systems worldwide.
- A major challenge arises from **plastic's persistence in the environment**. Plastics are complex mixtures of polymers, monomers, and chemical additives, with more than 16,000 chemicals potentially present in various plastic products.
- Alarmingly, little is known about the health or environmental impacts of over 10,000 of these substances.
- Studies have found that over 4,000 hazardous chemicals exist in major plastic types such as PVC, PET, polyethylene, and polyurethanes.
- Being synthetic and non-biodegradable, these chemicals are nearly indestructible and can migrate into ecosystems — contaminating rivers, oceans, soil, and ultimately entering the human body.
- Thus, while public debates often focus on recycling or waste management, the deeper concern lies in the toxic chemical load plastics carry.
- Their resilience and indestructibility make them long-term threats to human health and environmental safety, posing challenges that go far beyond visible waste.

Evidence That Plastic Harms Health

- Plastics are made from petrochemical derivatives such as ethylene, propylene, and styrene.
- Common variants include polypropylene (PP), polyethylene (LDPE, LLDPE, HDPE), and polyethylene terephthalate (PET).
- To manufacture these, several other chemicals are used — including bisphenols, phthalates, PCBs, PBDEs, and PFAS.
- These substances are widely present in everyday items such as food containers, drink bottles, toys, polyester fabrics, cosmetics, paints, adhesives, medical bags, and electronic components.

Health Risks Identified by Studies

- Over the years, medical researchers have investigated the effects of exposure to these chemicals through daily-use products.
- These studies have linked plastic-related chemical exposure to:
    - Thyroid dysfunction
    - Hypertension
    - Kidney and testicular cancer
    - Gestational diabetes

- Most of these studies were conducted in developed countries, highlighting the need for wider global research.

Microplastics and Human Health

- Microplastics are plastic fragments **smaller than five millimetres**, originating either as breakdown products of larger plastic items or as additives in manufactured goods.
- They are widely present in the environment due to the pervasive use of plastics.
- With recent advances in detection technology, microplastics have been discovered in several critical parts of the human body, including: Blood; Breast milk; Placenta; Bone marrow.
- This shows that microplastics are not just environmental pollutants but can penetrate and circulate within human biological systems.

Impact on Human Health

- Although the exact health consequences of microplastics are still under investigation, early evidence suggests links to a wide range of disorders.
- Their persistence and potential to carry toxic chemicals raise concerns about long-term risks to human health, especially in sensitive stages such as pregnancy and early development.

India’s Approach to Plastic Management

- Production and use of **single-use plastics** are banned in nearly 20 States, as these items are the least reusable and most difficult to recycle.
- To address the waste management challenge, the government has also put in place administrative mechanisms requiring companies to collect back a share of the plastics they use.
- However, these measures have had **limited success** due to weak enforcement.
- Importantly, India does not yet recognise the **health risks posed by plastics and associated chemicals**, treating the issue largely as a **waste management problem**.
- In global negotiations on a plastics treaty, India — along with some other countries — has opposed including health impacts in the agreement, instead suggesting that such concerns should be addressed by the **World Health Organization (WHO)**.

Source: TH | CIEL
