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The Impact of Plastic on Health

Plastic bottles, containers and packaging are an integral part of everyday life, but plastic and its associated chemicals can negatively impact human health through various pathways, including direct exposure to microplastics as well as indirect effects from plastic production, use and waste management. Microplastics, tiny plastic particles of less than 5mm, are found in the air, water, and food, and can enter the human body through ingestion, inhalation and skin contact. They can potentially cause inflammation, respiratory distress, and birth defects, as well as increased risks of certain cancers. Furthermore, long-term exposure to plastic-related chemicals has also been linked to endocrine-disrupting chemicals that interfere with the body's hormonal systems, impacting reproduction, development and metabolism.

A recent study published by the British medical journal *The Lancet* highlighted the impact of plastic on human health. It found that “plastics are a grave, growing, and under-recognised danger to human and planetary health. Plastics cause disease and death from infancy to old age and are responsible for health-related economic losses exceeding US\$1.5 trillion annually. These impacts fall disproportionately upon low-income and at-risk populations”.

[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(25\)01447-3/abstract](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(25)01447-3/abstract)

The review highlights that the driver of the crisis is a huge acceleration of plastic production, which has increased by more than 200 times since 1950 and is set to almost triple again to more than a billion tonnes a year by 2060. While plastic has many important uses, the most rapid increase has been in the production of single-use plastics, such as drinks bottles and fast-food containers. Consequently, plastic pollution has increased to the extent that there are 8 billion tonnes now polluting the whole planet, from the peak of Mount Everest to the deepest sea. In spite of its ubiquity, less than 10% of plastic is recycled.

<https://tinyurl.com/2r68txkr>

“Globally, 40 per cent of plastics production goes into the production of single-use plastic packaging, which is the single largest source of plastic waste and is a threat to wildlife and human health. Without meaningful action, global plastic waste is projected to nearly triple by 2060, reaching an estimated 1.2 billion tonnes”.

<https://tinyurl.com/5dw2bpj9>

The adverse effects of plastic are particularly acute for children in the womb, with increased risks of prematurity, stillbirth, birth defects of the reproductive organs, neurodevelopmental impairment, impaired lung growth, childhood cancer, and fertility problems later in life. Plastic particles have also been found in breast milk.

<https://www.genevaenvironmentnetwork.org/resources/updates/plastics-and-health/>

<https://tinyurl.com/yr2v3bap>

The Geneva Environment Network found that “health impacts are also observed all along the plastic value chain. Examples include pollution at extraction sites, workers’ exposure to chemicals, air pollution from waste incineration, and water and soil contamination. Vulnerable groups, including children, women, workers in the informal waste sector, and marginalized communities are particularly exposed, thus

raising concerns of human rights and environmental injustice". Furthermore, as 99 per cent of plastics are created from chemicals of fossil origin, oil-associated toxicological short- and long-term health hazards, from respiratory symptoms to adverse neurological effects, including stress and generalized anxiety disorder, are part of the plastic value-chain. Individually, each stage of the plastic lifecycle poses significant risks to human health.

<https://www.ciel.org/plasticandhealth/>

Furthermore, the production and disposal of plastics contribute to climate change, which in turn exacerbates existing health problems and creates new ones, such as heat-related illnesses and respiratory issues.

Despite overwhelming scientific consensus, debates around plastic pollution are becoming increasingly politicized, with some actors trivializing the issue. In February, President Donald Trump signed an executive order directing the US government to "stop purchasing paper straws and ensure they are no longer provided within federal buildings".

A collective of environmental researchers point out that "at every stage of the plastic lifecycle and across those stages, solutions should be guided by respect for the human rights to health and to a healthy environment. Despite remaining uncertainties, existing information about the severe health impacts of the plastic lifecycle justifies the application of a strong precautionary approach to the lifecycle of plastic and the overall reduction of plastic production and uses".

<https://tinyurl.com/yckbd6kc>

To address plastic's harms globally, UN member states unanimously resolved in 2022 to develop a comprehensive, legally binding instrument on plastic pollution, the Global Plastics Treaty, covering the full lifecycle of plastic. This treaty to end plastic pollution remains under negotiation by more than 175 countries in 2025 and has the potential to shape safer and more sustainable global systems that protect people as well as the planet. Unfortunately, the latest reports are of a collapse in the negotiations.

<https://tinyurl.com/uhynfwww>

Lois Law
Project Co-ordinator
lois@cplo.org.za

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