



Research Paper

Adverse Health Effects of Plastics

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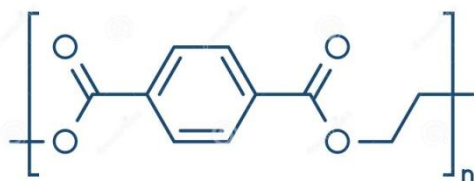
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Abstract: Plastics are synthetic or natural organic materials that can be molded, extruded or rolled into various shapes or spun into fibers. we can also be used to make adhesives, sealants, coatings, and paints among many other products. we are either amorphous or semi-crystalline solids or highly viscous liquids that consist mainly of polymers that are made up of a large number of repeating structural units (monomers) chemically bonded to each other. The oldest plastics were derived from plants and animals. . the chemical structure of most plastics renders them resistant to many natural processes of degradation and as a result they are slow to Degrade.



Plastic pollution is the accumulation of plastic objects and particles (e.g. plastic

bottles, bags and microbeads) in the Earth's environment that adversely affects wildlife, wildlife habitat, and humans.

Society has become completely dependent on plastic, yet we rarely stop and wonder how this material might be affecting our health. Toxic additives are often added to plastic in order to improve its properties. Many of these additives do not bind to the chemical chain of plastic which means they can be released in the environment when exposed to various atmospheric conditions. These additives can be absorbed by the skin, evaporate into the air or absorbed via the food or drinks we consume. It is important to know exactly what additives are used and take steps to avoid them to reduce the harmful effects of plastic on human health as all of them are highly toxic in nature. Look around you. Right now. How much plastic can you see? Food containers, plastic bottles, pens, even your phone cover, the list is endless. Despite its ubiquity, the effects of plastic pollution on human health remain mostly unknown to the majority of people. Have you ever thought about the negative effects of the plastic pollution that we're increasing day-by-day on your health? Here we discuss 7 types of plastic and they

directly and indirectly effect our life we use “plastic” as a blanket word to describe the myriad of shapes and forms that this material comes in. In reality, there are 7 types of plastic that vary in their chemical composition, purpose, recyclability, and hazardous nature. It’s important to stay informed of these variants as it helps us on our journey as conscious consumers.

1. PET/Polyethylene Terephthalate, 2. HDPE/High-Density Polyethylene, 3. PVC/Polyvinyl Chloride, 4. LDPE/Low-Density Polyethylene, 5. PP/Polypropylene, 6. PS/Polystyrene, 7. Others

Keywords: plastic, hazardous nature, microplastics, toxic chemicals, pollution.

Introduction:

Harmful Effects of Plastic

Plastics are a part of our daily lives. Unfortunately, that doesn’t mean they’re safe or responsible. A closer understanding of the harmful effects of plastic will empower us to improve their toxic footprint.

A sea change in building technology arrived in the 1950s with the “Age of Plastic.” Industrial development of fossil fuels into a wide array of plastics changed formulations in everything from insulation to mechanicals to paint, and plastic is still a ubiquitous component of every building assembly. Unfortunately, the impacts of plastic production in its many forms are heavy in every phase of its life cycle. While there is a common general understanding that plastics have negative ecological associations, a closer understanding of what types of plastics create what types of impacts will empower us to improve the toxic footprint of our buildings.

Plastics are not inherently bad, and they have many redeeming ecological features; in fact, many of the techniques we utilize in our designs involve targeted use of plastic products. Their durability and low

maintenance reduce material replacement, their light weight reduces shipping energy, their formulation into glue products allows for the creation of engineered lumber and sheet products from recycled wood, and their formulation into superior insulation and sealant products improves the energy performance of our structures.

The feedstock of plastic is primarily petroleum- or natural-gas-derived, although bio-plastics are making inroads in the overall market share of plastic products. Obvious issues emerge regarding the finite amount of available petroleum resources, as well as the pollution associated with oil extraction and refinement; the massive Gulf Coast oil spill of 2010 is only one of the more notorious of the many ecologically devastating accidents that are not frequently considered in addition to the standard pollution impacts of extraction and refinement, which are extensive.

The most common plastic additives are:- BPA’s – widely used in food and beverage containers. The EU is already taking steps to limit and regulate the use of BPA’s, recognizing its hazards to human health. Plasticisers – often used to make PVC more flexible, they are found in almost all plastic objects we use on a daily basis, from kid’s toys to car seats.

Flame Retardants – widely used in electronic equipment to provide fire safety benefits. Some of these substances have been banned by the United Nations as they have been considered hazardous for both the environment and people.

Below we’ll find a list of the following main ways in which plastic enters our body and leads to a negative effect on human health:-

1. We eat plastic contaminated seafood

Scientists have found microplastics in 114 marine species, and almost one-third of these end up on our plates. Some of the chemicals added to plastic to increase its performance are considered endocrine

disruptors – chemicals that affect normal hormone function – while some retardants may interfere with brain development in children. Studying the impacts of microplastics on human health is very challenging. Today we know very little about what levels of contamination might negatively affect us. The United Nations Food and Agriculture Organization stated – following recent research – that people are likely to consume only negligible amounts of microplastics from fish. Nonetheless, scientists remain concerned about the human health impacts of marine plastics. More research needs to be carried out before we are truly able to understand the implications of consuming contaminated fish. But it's quite clear that this cannot possibly be a good addition to our diets. With every passing day, as we consume more contaminated seafood, plastic pollution affects human health, even if these effects have not manifested just yet.

2. We consume plastic for packaging

BPAs are present in many plastic objects that come in direct contact with food, including plastic packaging, kitchenware, and the inner coatings of beverages. BPA is metabolized in the liver to form Bisphenol A and it exits our body through our urine. Just to give you an idea of the extent to which we are exposed to this plastic additive, BPA has been found in the urine of 95% of Canadians. The main problem is that – as previously mentioned – BPA is an endocrine disruptor. The human endocrine system regulates a number of essential body functions including:-

- 1.metabolism
- 2.heart rate
- 3.digestion
- 4.fertility

Consumer movements worldwide today are demanding BPA-free packaging to reduce the harmful effects of plastic on human health and general well-being.

3. We drink microplastics via bottled water

The World Health Organisation (WHO) published shocking research in 2018 which exposed the presence of microplastics in 90% of bottled water that had been tested – only 17 were free of plastics out of 259. Today while there is not enough evidence on the impact of microplastics on human health, most scientists agree that it is an emerging area of concern and that if thousands of species worldwide are dying because of it, it can't be that good for us either.

4. We absorb plastic through using clothes

The Global Apparel Fiber Consumption published research which highlights that – out of 100,000 kg of fibers consumed worldwide in one year – 70% are synthetic. Synthetic fibers such as polyester, acrylic, rayon, and nylon are derived from petroleum – yes, the same oil that we feed our cars – and are a type of plastic. Microplastics are constantly released in the air from our clothing, and we breathe them in every single day.

Many synthetic fabrics are treated with thousands of harmful toxic chemicals during production, polyester ranked in the first place as the worst fabric for the skin. Our skin is the largest and most permeable organ in our bodies and can absorb up to 60% of the substances we put in direct contact with it. Furthermore, synthetic fabrics don't allow your skin to breathe, trapping odors, and acting as a perfect environment for bacteria to grow. These microfibers also contribute to ocean plastic pollution in a subtle but pervasive way: every time we wash our synthetic clothing in a washing machine, microplastics leach into the environment through our household water waste. It is possible that a single load of laundry could release up to thousands of microfibrils from our clothes into the water supply.

Conclusion and recommendations :

We breathe plastic .This is an issue many people in the Global North struggle to

relate to, but it poses a huge health hazard to people living in the Global South. Where there is poor waste management, people often have no choice but to burn their trash in the open air. This is a very common practice that allows chemicals from plastic to easily enter the body as we breathe normally. A report published in March 2018 shows that 5 billion people globally live without waste collection or controlled waste disposal. Roughly 9 million people die each year as a result. In Europe, the issue persists but is hidden inside huge buildings known as incinerators. Incinerators in Europe are supposed to operate with maximum security, converting the heat produced by burning trash, into energy. Beautiful right? Unfortunately, it has been proven that incinerators release dioxin – one of the most toxic chemicals known to man – in huge amounts into the air. When it is not directly released into our atmosphere it is grouped in toxic ashes. Many additives in plastic are considered extremely harmful for people and the environment, and while we do not have enough information yet on the true magnitude of how plastic pollution affects human health, it is clear that it increasing pollution levels do not bode well for us. While we aren't choking on plastic bags like marine birds or turtles, the amount of toxic additives present in our everyday plastic, combined with our constant exposure to this material, is cause for concern. It is important to learn and be aware of the harmful effects of plastic on human health in order to effectively counter them. It's becoming increasingly important for society to reduce its reliance on single-use plastics and seek alternative materials. Intrigued by this article? Find out more about how Plastic Pollution Affects Marine Life. Curb your own plastic consumption and mitigate your impact on the planet by going Plastic Neutral with us today. Small steps enable big changes, take yours today.

Toxicity of plastic is a problem in nature on a universal scale, from the individual level to the level of populations. The study reveals that the negative consequences of plastic on human health and environment as a result of exposure to toxic chemicals used in the production of plastics. Peoples of all over the world unconsciously used those plastics without knowing its toxicity. The toxic effect of plastics on human health an environment is very much evident by the most of the reviews. The government, law implementing agencies and health authorities of the country should take more steps and pay attention to sustainable production, use, and disposal of plastics. Phthalates of high concern should be banned and im-plemented, primary in consumer products or product in contact with children. Bisphenols should be forbidden from use in materi-als that come into contact with food and beverages and children and in the long term in other consumer products like thermal cash receipt. Every company must take their responsibility in terms of the reduction of unnecessary plastic consumption. A full of infor-mation about all existing chemicals in consumer products must be required so that peoples becomes aware to use of those products

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