

# MICROPLASTICS AND THEIR POSSIBLE OBJECTS OF FUTURE PROJECT WORK

## WHAT ARE MICROPLASTICS?

- They are small pieces of plastic that pollute the environment;
- Microplastics are not a specific kind of plastic. They are plastic fragments less than 5 mm in length, according to the US National Oceanic and Atmospheric Administration and the European Chemicals Agency;
- Microplastics enter the natural ecosystems from many sources, including: cosmetics, clothing and industrial processes;
- There are two classifications of microplastics: primary microplastics which originate from microfibers from clothing, microbeads and plastic pellets. Secondary microplastics originate from degradation of larger plastic products in the environment. So, these include water and soda bottles, fishing nets, plastic bags;
- Microplastics degrade over hundreds if not thousands of years. So, this increases the probability and possibility that microplastics are taken in, accumulated in the bodies and tissues of many organisms.

## The knowledge so far about microplastics

The entire cycle and movement of microplastics in the environment is not yet known. Research is currently underway to investigate this issue.

### A. However, it is important to know the following about microplastics. Microplastics are found in:

- Sewage treatment plants;
- Car and truck tyres;
- Cosmetics industry;
- Laundry from washing machines;
- Clothing, especially polyester and nylon-based;
- All sorts of manufacturing;
- Fishing industry;
- Packaging and shipping;
- Plastic bottles, like water bottles and baby bottles; and
- Face masks;

### B. Environmental presence

- oceans and seabed;
- ice cores;
- freshwater ecosystems;
- soil;
- human body; and
- air.

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## DANGER TO HUMANS

Microplastics are everywhere: air, water, soil, foods grown on soil and seafoods. That means humans cannot escape microplastics. Microplastics are endocrine-disrupting chemicals (EDCs). They generally interfere with hormone biosynthesis, metabolism and action. They are thus implicated in:

- i. Reproductive health;
- ii. Polycystic ovarian syndrome (PCOS);
- iii. Premature ovarian failure;
- iv. Endometriosis;
- v. Breast cancer;
- vi. Male reproductive function and development;
- vii. Prostate cancer;
- viii. Environmental oestrogens and obesity;
- ix. Diabetes; and
- x. So many other disturbances.

## Health Example:

There is a growing epidemic of obesity round the world; and this is no longer age-related, since you find obesity in children, teenagers, young adults, middle-age and the senior citizens in the society. Pharmaceutical companies dish out hundreds of medications meant to stop obesity. These actions do not stop obesity. Many gyms, dieticians and others send out written and online lectures on stopping obesity. These do not help. Even surgeons do various kinds of bypass surgery to stop obesity. Nothing happens. You may do all the exercises in the world to become slim but the moment you stop or reduce such exercise, obesity comes back even with worse level!

The reasons for this unsuccessful obesity management are the presence of microplastics in everything around us: air, water, soil, food, vegetables, as well as animal products. So, we eat, drink and breathe microplastics every day. These microplastics disrupt the metabolism in the body, disturbing the homeostasis that controls hunger and satiety. The result is that the obese person continues to eat without control.

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