Current Updates on The Impacts and solutions of Microplastics

Sep 26, 2024

By Mitchell Victoria

The negative impacts of microplastics have continued to become an even bigger problem as there are now traces of them inside urinary tracts. According to *Scimex (Breaking Science news of Australia and New Zealand)*, There has been sparks of concerns of microplastics found inside the urinary tracts of individuals that had reported microplastics inside their kidneys and gall bladders. This has resulted in cell damage and inflammation for cancer patients who have been drinking water that had traces of microplastics that made it into their systems.

Additional updates on the negative impacts of microplastics have also been concerning as *News Scientist* has written that microplastics have made it to every single organ in our body and have even made it into our bloodstream, breast milk, as well as testicles. The most concerning of them all is the brain. Microplastics have now been able to make some individuals lose some of their senses such as smell when they saturate our brain cells or nerves (*Medical News Today*). If you are an individual who is victimized by rising blood sugar levels while keeping a healthy and consistent diet, microplastics are now to blame for this too. *The Indian Express* has written that microplastics can make their way through many of our resources such as seafood, beer, plastic bottles, tea bags, and plastic filters if they get exposed to heat, as well as plastic containers when placed in a microwave or oven.

Microplastics have not only been found in some of the foods we eat, but the ecological food webs in our oceans are becoming saturated with microplastics. With microplastics damaging and destroying red blood cells, this can lead to insulin resistance which follows up with the diagnosis of type 2 diabetes. Cancers and other diseases are being accused by microplastics in our bodies, but there still needs to be more research to support that statement. Studies need to be done to learn more as to microplastics being the cause of current diseases and cancers in some hospital patients worldwide (Robinson, K. 2024). It's best to keep plastic out of the sun or in high heat to avoid the microscopic particles making its way into the foods or liquids that are kept inside. The main goal is to go plastic free, but there's more to be done before we can reach that reality.

However, there can still be hope as there are some studies that state that if we switch to stainless steel containers or encourage stores to not sell foods in plastic containers or packages, then we can reduce the amount of plastic in our daily lives. Most recently, *Nature biotechnology* have now found that there are bacteria, fungi, and plants that can be grown and engineered to eat the microplastics in our plastic containers and remove microplastics found in contaminated water and soil. This business has been boosting as of late for bioremediations and can additionally reduce chemicals and pollutants in our every resource too. A species of Microbes called *Ideonella sakaiensis* 201-F62 can produce a plastic-eating Enzyme that helps to remove microplastics from drinking water in plastic bottles and remove forever chemicals in our foods and soil. Earlier this year, A French Carbios in June introduced the first ever bio-recycled bottle made from polyethylene terephthalate (PET) plastic.

With the help of these microorganisms and current species of fungi, plants, bacteria, and microbes, many industries will be able to remove 50,000 tones of plastic by next year (Johnson, B. 2024). The sooner we can introduce these microbes to other wasteful nations like the United States and China, then we will be able to reduce the intake of microplastics while switching to non-plastic solutions such as metal water bottles, bamboo, and glass containers. Sara Tolpes (2024) had found that some scientists and army representatives are working on having microbes ingested by us to remove the microplastics inside the human body, but it can take years before we can officially produce enough for everyone to have access to this miracle species. Additional ideas for plastic are to use it as fuel or rations for the armies to use as the microbes turn into a powder after they consume microplastics. This powder can become a consumable resource that we can use in supplements, food, and are a good source of protein, carbohydrates, and fats. In addition to these benefits, they take up less land and water to produce than agricultural lands, which also makes them a more sustainable food source like insects. In the meantime, we must wait until the trials and errors are finished to confirm that these all are safe, efficient, as well as believable to the public. During this time, we can all start using aluminum bottles for our everyday products such as lotion, shampoo, conditioner, as well as hand soap. Let's not forget those hand-crafted wine bags and fun little dryer hand crafted balls. So come on down to your local refillery to make a difference in the world. The sooner we reduce our plastic intake, the sooner we can reach our brighter future.

References

Johnson, B. Plastic-eating bacteria boost growing business of bioremediation. *Nat Biotechnology* (2024). https://doi.org/10.1038/s41587-024-02401-1

Medi Lexicon International. (2024, September 23). *Microplastics found in the brain: Should we be concerned?* Medical News Today. https://www.medicalnewstoday.com/articles/discover-microplastics-brain-olfactory-bulbs-first-time#Microplastics-traveling-to-the-human-brain

Mithal, Dr. A. (2024, September 25). *Is your blood sugar rising despite diet correction? blame it on microplastics*. The Indian Express. https://indianexpress.com/article/health-wellness/blood-sugar-rising-microplastics-9587218/

Robinson, K. (2024, September 26). *Microplastics in the urinary tract spark water safety concerns*. Scimex. https://www.scimex.org/newsfeed/microplastics-in-urinary-tract-sparks-water-safety-concerns

Talpos, S. (2024, August 20). *Can plastic waste be transformed into food for humans?* Undark Magazine. https://undark.org/2024/08/21/plastic-waste-transformed-into-food-for-humans/

Wade, G. (2024, September 26). *How much should we worry about the health effects of microplastics?* New Scientist. https://www.newscientist.com/article/2449545-how-much-should-we-worry-about-the-health-effects-of-microplastics/