



# **Microplastics Found In Human Blood For First Time**



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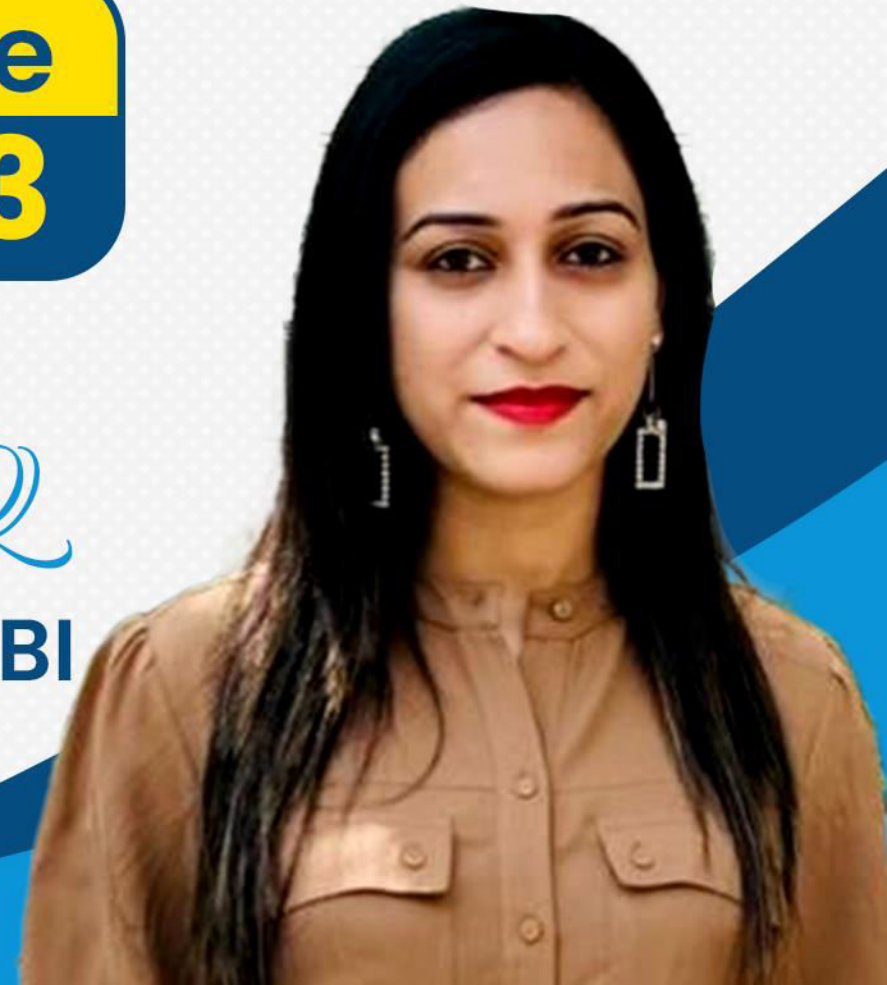
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- Microplastic pollution has been detected in human blood for the first time, with scientists finding the tiny particles in almost 80% of the people tested.
- The discovery shows the particles can travel around the body and may lodge in organs.



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# Microplastics Found In Human Blood For First Time, Researchers Concerned

Plastic is one of the leading pollutants on the planet. Huge amounts of plastic waste are dumped from mountains to oceans.

Environment | Edited by Amit Chaturvedi | Updated: March 25, 2022 2:33 pm IST

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- The scientists analysed blood samples from 22 anonymous donors, all healthy adults and found plastic particles in 17.
- Half the samples contained PET plastic, which is commonly used in drinks bottles, while a third contained polystyrene, used for packaging food and other products.
- A quarter of the blood samples contained polyethylene, from which plastic carrier bags are made.

- Polystyrene, widely used in food packaging, was found in 36 per cent and polyethylene, used in packaging films and bags, was found in 23 per cent of samples, according to the research.
- The levels are low - 1.6 micrograms (1.6 millionths of a gram) in every millilitre of blood - but are enough to raise an alarm.



- This research was funded by the **Dutch National Organisation for Health Research and Development and Common Seas**, a social enterprise working to reduce plastic pollution.







# Technique to detect particles

- The researchers adapted existing techniques to detect and analyze particles that were as small as 700 nanometers in size.
- Some of the blood samples contained two or three types of plastic. The team used steel syringe needles and glass tubes to avoid contamination, and tested for background levels of microplastics using blank samples.



- The results support the hypothesis that human exposure to plastic particles results in the absorption of particles into the bloodstream, but further study is needed to assess the impacts of exposure and whether it is a public health risk, the study said.
- The researcher also said that such particles can cause chronic inflammation.



# Concern

The impact on health is as yet unknown. But researchers are concerned as **microplastics cause damage to human cells** in the laboratory and air pollution particles are already known to enter the body and cause millions of early deaths a year.







NEWS RELEASE 5-AUG-2021

# Microplastics can deform cell membranes and affect their functioning

Universitat Rovira i Virgili research demonstrates the mechanism by which microplastics, when in contact with cell membranes, stretch and greatly reduce their mechanical stability

Peer-Reviewed Publication

UNIVERSITAT ROVIRA I VIRGILI

It is estimated that, since the 1950s, more than 70 million

- An another study found that microplastics can **latch on to the outer membranes of red blood cells** and may **limit their ability to transport oxygen**.
- The particles have also been found **in the placentas of pregnant women**, and in pregnant rats they pass rapidly through the lungs into the hearts, brains and other organs of the fetuses.



# Plastic dump in Environment

- Huge amounts of plastic waste are dumped in the environment and microplastics now contaminate the entire planet, from the summit of Mount Everest to the deepest oceans.
- People were already known to consume the tiny particles via food and water as well as breathing them in, and they have been found in the faeces of babies and adults.





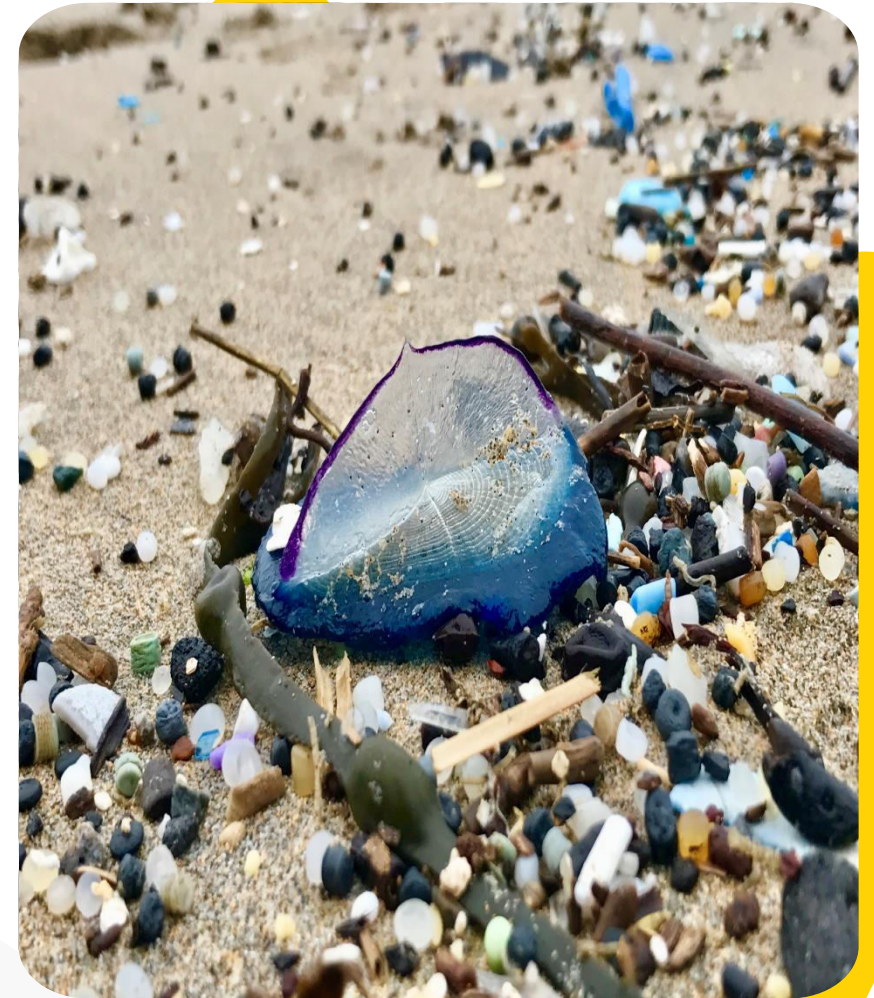
- Some materials can take centuries to break down, and growing concerns about their pollutive impacts have spurred bans on single-use plastic bags.
- But the pervasive presence of synthetic products in modern life – from water bottles to takeaway containers and clothing – underscore the challenges of regulating and limiting their use.







- Yet nurdles, unlike substances such as kerosene, diesel and petrol, are not deemed hazardous under the International Maritime Organization's (IMO's) dangerous goods code for safe handling and storage.
- This is despite the threat to the environment from plastic pellets being known about for three decades, as detailed in a 1993 report from the US government's Environmental Protection Agency on how the plastics industry could reduce spillages.





# X-Press Pearl disaster: Colombo's coral reefs, marine wildlife in danger

The X-press Pearl disaster has already caused damage to Sri Lanka's pristine beaches with millions of plastic pellets and debris. Now, a dangerous oil spill can devastate its off-shore coral reefs

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By [Tejprakash Bhardwaj](#)

Published: Tuesday 08 June 2021



- Now environmentalists are joining forces with the Sri Lankan government in an attempt to turn the X-Press Pearl disaster into a catalyst for change.
- The cleanup continues in Sri Lanka. Some of the 470 turtles, 46 dolphins and eight whales washing ashore have had nurdles in their bodies,





# Other Incidents of Nurdle Spills





# Plastic pellets spill pollutes Danish, Norwegian, Swedish coastlines



26th May 2020

*KIMO International reacts to the loss of plastic pellets from MV Trans Carrier in the German Bight*

Beaches and coastlines of KIMO International member municipalities in Norway, Sweden and Denmark have been polluted by the recent MV Trans Carrier plastic pellet spill in the German Bight. KIMO here highlights the failing of the current regulatory reporting regime and puts forward recommendations for preventing future accidents of this nature.

On 23rd February 2020, the MV Trans Carrier lost more than 10 tonnes of plastic pellets in the German

# South Africa's ecological 'nightmare' after plastic pellets spill

South Africa is struggling to clean up billions of tiny plastic pieces, known as nurdles, which have coated 2,000km of coastline.

🕒 Saturday 24 February 2018 11:12, UK







# Suggestions

- Classifying nurdles as hazardous – as is the case for explosives, flammable liquids and other environmentally harmful substances – would make them subject to strict conditions for shipping. “They must be stored below deck, in more robust packaging with clear labelling.”



**Question:**

**Waste removal system was established in which of the following cities for the first time?**

- (a) Athens
- (b) Lahore
- (c) Paris
- (d) London

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