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HEALTH SCIENTISTS' GLOBAL PLASTICS TREATY OPEN LETTER

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THIS WEEK world leaders are meeting in Nairobi to negotiate the next iteration of the Global Plastics Treaty.

Earlier this year, the UN published a 'Zero Draft' of the Treaty in which cursory information was provided on the future shape of the agreement. This draft mentions the known science on human health impacts, but falls far short of what is actually needed to protect human and wildlife health.

An international team of health scientists has therefore drafted a "Health Scientists' Global Plastics Treaty", focusing on those elements of the treaty that must be addressed fully in its final form to make it strong enough to protect the health of future generations. Anything short of these elements will consign the treaty to failure.

Exposure to chemicals used in plastic like bisphenol A, perfluorinated compounds and phthalates is virtually ubiquitous. Indeed, research by the European Environment Agency determined that all European adults carry bisphenol A levels in their bodies at concentrations above those considered to be safe.

Many of the 16,000 chemicals used in the manufacture of plastic are hazardous and possess characteristics causing endocrine disruption, mutagenicity, and carcinogenicity. In the most comprehensive review to date of over 3,500 studies on how chemicals in plastic detected in the human body can affect human health, the Minderoo Foundation determined that less than 30 percent had been assessed for their human health impacts.

Moreover, mounting evidence demonstrates that plastic particles pollute the air, drinking water, and food, leading to an ever-increasing risk of inhalation and ingestion on a global scale. Plastic particles have been found in human blood, lungs, and the placenta, posing a serious public health threat.

That is why today we're joining the [Plastic Health Council](#) in calling for a Global Plastics Treaty that heeds the known science of the impact of plastic chemicals and plastic particles on human and wildlife health. This means delivering a Treaty that will reduce the production volume of plastics overall, eradicate all but verifiably essential single-use plastic items (and commits to funding sustainable chemistry research to innovate safe replacements), mandates proper testing of all chemicals in plastics, and unequivocally prohibits 'chemical recycling' of plastics.

The Global Plastics Treaty is a once-in-a-century opportunity to protect human health from pollution. World leaders cannot afford to leave their populations vulnerable to the toxic effects of plastic.

Signed by scientists including:

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BIBLIOGRAPHY

Baeza-Martínez, C., Bayo, J., García-Pachón, E., González-Pleiter, M., Hernández-Blasco, L., López-Castellanos, J., Masiá-Canuto, M., Olmos, S. (2022). First evidence of microplastics isolated in European citizens' lower airway. *Journal of Hazardous Materials*. 438, 129439. <https://doi.org/10.1016/j.jhazmat.2022.129439>

Baiocco, F., Catalano, P., Carnevali, O., D'Amore, E., Draghi, S., Giorgini, E., Matta, M., Notarstefano, V., Papa, F., Ragusa, A., Rinaldo, D., Rongioletti, M.C.A., Santacroce, C., Svelato, A. (2021). Plasticenta: First evidence of microplastics in human placenta. *Environment International*. 146, 106274. <https://doi.org/10.1016/J.ENVINT.2020.106274>

Bell, L. (2023). Chemical Recycling: A Dangerous Deception. *Beyond Plastics and International Pollutants Elimination Network (IPEN)*. <https://www.beyondplastics.org/publications/chemical-recycling>

Brandsma, S.H., Garcia-Vallejo, J.J., Lamoree, M.H., Leslie, H.A., van Velzen, M.J.M., Vethaak, A.D. (2022). Discovery and quantification of plastic particle pollution in human blood. *Environment International*. 163, 107199. <https://doi.org/10.1016/j.envint.2022.107199>

Gore, A., V.A. Chappell, S.E. Fenton, J.A. Flaws, A. Nadal, G.S. Prins, J. Toppari, and R.T. Zoeller (2015). EDC-2: The Endocrine Society's Second Scientific Statement on Endocrine-Disrupting Chemicals. *Endocrine Reviews* 36: e1-e150. <https://pubmed.ncbi.nlm.nih.gov/26544531/>

La Merrill, M. et al.(2020). Consensus on the key characteristics of endocrine- disrupting chemicals as a basis for hazard identification. *Nature Reviews: Endocrinology* <https://pubmed.ncbi.nlm.nih.gov/31719706/>

Legler, J., Vethaak, A.D. (2021). Microplastics and human health. *Science*. 371, 672-674. <https://doi.org/10.1126/science.abe5041>

Leslie, H.A., Vethaak, A.D. (2016). Plastic Debris is a Human Health Issue. *Environ.Sci.Technol*. 50(13), 6835-6826. <https://pubs.acs.org/doi/10.1021/acs.est.6b02569>

Meng, W., Su, G., Sun, H. (2023). Plastic packaging-associated chemicals and their hazards—An overview of reviews. *Chemosphere*, 138795. <https://doi.org/10.1016/j.chemosphere.2023.138795>

Minderoo Foundation Plastic Health Map. (2023). Available here: https://r.flo.minderoo.org/Systematic-Evidence-Map/?_gl=1*16ta632*_ga*MzgzMDc2NjA5LjE2OTc1MjUyNTA.*_ga_MFMM3WMMTC*MTY5NzUyNTI0OS4xLjEuMTY5NzUyNjA5Ny42MC4wLjA

Wang, Y and H Qian. (2021). Phthalates and human health. *Healthcare* 9(5), 603;
<https://doi.org/10.3390/healthcare9050603>.

World Health Organization. (2012). State of the science of endocrine disrupting chemicals 2012. <https://www.who.int/publications/i/item/9789241505031>

World Health Organization. (2022). Dietary and inhalation exposure to nano- and microplastic particles and potential implications for human health.
<https://www.who.int/publications/i/item/9789240054608>