# Researchers warn of environmental crisis from single-use lateral flow Covid-19 tests



Researchers from Heriot-Watt University and the University of Edinburgh have raised concerns over the environmental impact of the widespread use of single-use lateral flow Covid-19 tests, describing it as an emerging ‘environmental crisis’. Their study, published recently, highlights the urgent need for action to reduce the plastic waste generated by these diagnostic tools.

The study involved an analysis of 21 different lateral flow test kits, revealing significant variation in plastic consumption per test, with weights ranging from six grams to nearly 40 grams. This wide disparity indicates considerable potential for manufacturers to cut down on materials without affecting the tests’ accuracy or effectiveness.

Professor Maïwenn Kersaudy-Kerhoas, co-lead of the global research institute in health and care technologies at Heriot-Watt University, emphasised the lack of environmental considerations in current product standards. Speaking to Packaging Scotland, she said, “We have found few target product profiles that mention the environmental impact of tests, and none provide quantitative measures. We want these profiles to include a limit of four grams of plastic usage in the lateral flow test cassettes, for example. Our study showed that was the average weight of plastic in test cassettes, so it’s achievable. We hope this will be adopted as policy and an industry standard.”

Professor Alice Street, an expert in anthropology and health at the University of Edinburgh, added, “Improving access to essential medical testing should not come at the expense of environmental sustainability. Our findings show that reducing plastic waste in test kits is both feasible and necessary.”

The researchers highlight that over two billion lateral flow tests are manufactured annually worldwide. While these tests play a vital role in expanding access to healthcare, particularly for rapid Covid-19 detection, the resultant plastic waste imposes a heavy burden on waste management systems globally.

In many parts of the world lacking adequate waste disposal infrastructure, used test cassettes frequently end up in landfills, waterways, or are openly burned, which releases harmful pollutants. Even in developed countries, recycling such materials remains uncommon, exacerbating the environmental problem.

Professor Kersaudy-Kerhoas further stressed the need to balance convenience with environmental health, stating, “The convenience of lateral flow tests is undeniable, but we must acknowledge the long-term environmental consequences of single-use diagnostics. If we do not act now, we risk creating an environmental crisis that undermines the health benefits these tests provide.”

The research team is urging governments and health organisations to tighten environmental standards within diagnostic manufacturing, advocating for policies that reduce reliance on virgin petrochemical plastics and promote sustainable alternatives. They aim for these recommendations to guide future production practices and help mitigate the growing plastic waste issue linked to lateral flow testing.

Source: [Noah Wire Services](https://www.noahwire.com)

## References

* <https://www.hw.ac.uk/news/2025/scientists-urge-plastic-limit-for-lateral-flow-tests> - This article reports the study by researchers at Heriot-Watt University and the University of Edinburgh highlighting the environmental crisis caused by single-use lateral flow tests and their proposal to limit plastic usage to an average of four grams per test cassette to reduce waste.
* <https://www.cambridge-design.com/blog/how-to-reduce-the-carbon-footprint-and-plastic-waste-of-lfts/> - This source discusses the environmental impact of lateral flow tests, specifically analyzing the plastic waste and carbon footprint per test, aligning with the study's findings on variation in plastic consumption and the challenges of redesigning tests for sustainability.
* <https://www.delve.com/insights/covid-19-at-home-tests-a-game-changer-but-at-what-cost> - This insight piece evaluates the sustainability of at-home COVID tests, corroborating concerns over the environmental impact of widespread single-use testing devices similar to the lateral flow test waste issues described.
* <https://journals.plos.org/climate/article?id=10.1371%2Fjournal.pclm.0000561> - This study examines the life-cycle environmental impacts of COVID-19 diagnostic tests, including lateral flow technologies, supporting the discussion about the global environmental burden of these single-use tests.
* <https://pmc.ncbi.nlm.nih.gov/articles/PMC11978406/> - This research article analyzes the mass and material distribution in lateral flow assay kits, providing data relevant to the wide variation in plastic weight per test and potential for design improvements to mitigate environmental impact.