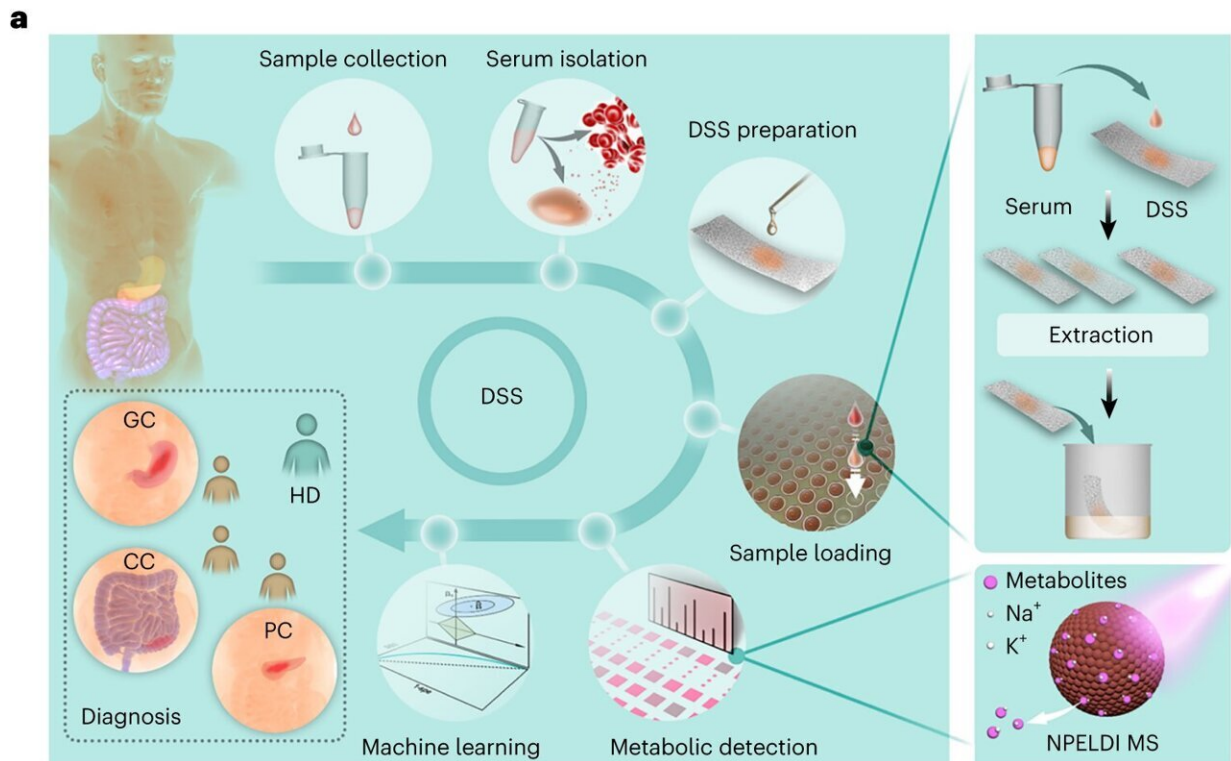


# A sustainable diagnosis tool for multiple cancers

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Validation via cancers diagnosis. Credit: *Nature Sustainability* (2024). DOI: 10.1038/s41893-024-01323-9

An accurate, affordable, environmentally and user-friendly diagnostic tool for multiple cancers—including pancreatic, gastric, and colorectal cancers—is reported in [a paper in \*Nature Sustainability\*](#). The tool can diagnose cancers within minutes and could help to address the need for accessible diagnostic tools, especially in remote areas.

Over a billion people across the world experience a high rate of missed disease diagnosis—the World Health Organization estimates that fewer than 30% of [low-income countries](#) have access to generally available diagnosis facilities.

It is estimated that 70% of cancer-related deaths worldwide occur in lower- and [middle-income countries](#), demonstrating the need for accurate and affordable tests. Additionally, tests may be used in ecologically sensitive or energy-limited regions, and solutions are needed to ensure sustainable options are available.

Kun Qian and colleagues developed a cancer diagnostic method based on metabolite detection. Using dried serum spots, instead of traditional liquid blood storage, this tool provides an environmentally friendly and metabolite-stable solution for biological sample collection and storage.

They combined this with nanoparticle-enhanced mass spectrometry, which enhanced detection sensitivity and speed. Qian and colleagues indicate that this approach allows for the diagnosis of pancreatic, gastric, and [colorectal cancers](#) within minutes, offering affordability, environmental friendliness, serum-equivalent precision and a user-friendly protocol.

By collaborating with population-based cancer screening programs, the authors suggest that implementation of this tool in less-developed

regions could reduce missed diagnoses of colorectal cancer, [gastric cancer](#), and [pancreatic cancer](#) by 20.35%–55.10%.

This technology could offer increased accessibility and accuracy and may maximize health gains within available resources, the authors conclude.

**More information:** Ruimin Wang et al, A sustainable approach to universal metabolic cancer diagnosis, *Nature Sustainability* (2024). [DOI: 10.1038/s41893-024-01323-9](https://doi.org/10.1038/s41893-024-01323-9)

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