Scientists develop a breath test that could detect stomach cancers

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A new type of breath test that detects nanoparticles could help diagnose stomach cancers, according to a study published in the *British Journal of Cancer*.

Scientists from Israel and China took breath samples from 130 patients with a range of different stomach complaints as well as those with stomach cancers.

They found that nanomaterial sensors had over a 90 per cent success rate at differentiating between stomach cancers and more benign conditions. The nanomaterial sensors were also more than 90 per cent accurate at detecting the difference between early and late stage gastric cancers.

The sensors detect biomarkers – a chemical profile that is associated

with specific stomach complaints or types of cancer – in the air people exhaled.

The researchers hope the breath test could be used as an alternative to endoscopies, an accurate but more invasive procedure that is used to diagnose gastric cancers.

Professor Hossam Haick, lead researcher from the Technion - Israel Institute of Technology, said: "The promising findings from this early study suggest that using a breath test to diagnose stomach cancers, as well as more benign complaints, could be a future alternative to endoscopies – which can be costly and time consuming, as well as unpleasant to the patient.

"Nevertheless, these results are at an early stage and support the concept of a breath test to detect stomach cancers but further validations are needed. Indeed, we're already building on the success of this study with a larger-scale clinical trial.

"Around 7,000 people develop stomach cancer in the UK each year and most of these are in their advanced stages when they are diagnosed. But if found to be accurate enough the nanomaterial breath test presents a new possibility for screening a population for stomach cancer, which would hopefully lead to earlier diagnosis of the disease."

Kate Law, director of clinical research at Cancer Research UK, said: "The results of this latest study are promising – although large scale trials will now be needed to confirm these findings.

"Only 1 in 5 people are able to have surgery as part of their treatment as most stomach cancers are diagnosed at stages that are too advanced for surgery. Any test that could help diagnose stomach cancers earlier would make a difference to patients' long-term survival."

More information: Xu, Z. et al. A Nanomaterial-based breath Test for Distinguishing Gastric Cancer from Benign Gastric Conditions (2013) *British Journal of Cancer*. DOI: 10.1038/bjc.2013.44