# Scientists developing cancer breath test

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Scientists working on a breath test to detect cancer said they were now able to identify different types of the disease, in research published Wednesday.

Their preliminary results, printed in the British Journal of Cancer monthly, showed the researchers' sensors could distinguish whether a patient had lung, breast, bowel or prostate cancer, irrespective of age, gender or lifestyle.

Previous research, conducted at the Technion Israel Institute of Technology in the northern port city of Haifa, found that they could largely distinguish between the breath of healthy patients and cancer sufferers.

The sensor uses gold nanoparticles to detect levels of so-called volatile organic compounds -- measured in a few parts per billion -- that become more elevated in cancer patients.

The device could provide an early warning system that flags the disease before tumours become visible in X-rays.

Technion's Professor Abraham Kuten co-authored the study published Wednesday.

"This study shows that an 'electronic nose' can distinguish between healthy and malignant breath, and can also differentiate between the breath of patients with different cancer types," he said.

"If we can confirm these initial results in large-scale studies, this new technology could become a simple tool for early diagnosis of cancer along with imaging.

"It could also be an easy way to assess and monitor the effectiveness of cancer treatment and detect relapses earlier."

The study examined the breath of 177 volunteers, including healthy people and patients already diagnosed with different stages of the four types of cancer.

As a cancer grows, the surface of cells emits chemicals. The research found that sensors could be used to detect these chemicals in the breath.

The study is at a very early stage and further tests with larger samples -- and people with undiagnosed cancer -- will be needed to determine the strength of the link between breath and cancer detection.

"These results are interesting and show that there is the potential to develop a single breath test to detect these cancers," said Doctor Lesley Walker of the Cancer Research UK charity.

"Strengthening the methods for early diagnosis of cancer as well as improved treatments will have a significant impact on cutting death rates."

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