

Breath test could possibly diagnose colorectal cancer

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A new study published in *BJS* has demonstrated for the first time that a simple breath analysis could be used for colorectal cancer screening. The study is part of the "Improving Outcomes in Gastrointestinal Cancer" supplement.

[Cancer tissue](#) has different metabolism compared to normal healthy cells and produces some substances which can be detected in the breath of these patients. Analysis of the [volatile organic compounds](#) (VOCs) linked to cancer is a new frontier in cancer screening.

Led by Donato F. Altomare, MD, of the Department of Emergency and [Organ Transplantation](#) at the University Aldo Moro of Bari, researchers collected exhaled breath from 37 patients with colorectal cancer and 41 healthy controls which was processed offline to evaluate the VOC profile. VOCs of interest had been identified and selected, and VOC patterns able to discriminate patients from controls set up.

A probabilistic neural network (PNN) was used to identify the pattern of VOCs that better discriminated between the two groups.

Results showed that patients with colorectal cancer have a different selective VOC pattern compared with healthy controls, based on analysis of 15 of 58 specific compounds in exhaled breath samples.

The PNN in this study was able to discriminate patients with colorectal cancer with an accuracy of over 75%, with the model correctly assigning

19 patients.

"The technique of breath sampling is very easy and non-invasive, although the method is still in the early phase of development," Altomare notes. "Our study's findings provide further support for the value of breath testing as a screening tool."

More information: Altomare et al. Exhaled Volatile Organic Compounds Identify Patients with Colorectal Cancer. *BJS*. [DOI: 10.1002/bjs.8942](https://doi.org/10.1002/bjs.8942) [doi.wiley.com/10.1002/bjs.8942](https://doi.org/10.1002/bjs.8942)

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