

Researchers develop simple saliva test to diagnose asthma

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Credit: Loughborough University

A new test which can diagnose asthma from a patient's saliva has been developed by Loughborough University.

Around 5.4 million people currently receive treatment for [asthma](#) in the UK, of which 1.1 million are children.

To diagnose the condition doctors usually measure a person's airflow lung capacity, however lung function tests can be inaccurate and do not reflect underlying changes associated with asthma. Other tests, such as blood, urine or sputum analysis can be distressing, particularly for younger patients.

The new [test](#), developed in collaboration with Nottingham City Hospital, is completely painless and offers a one-stop diagnosis suitable for people of all ages.

To develop the test the research team, led by Professor Colin Creaser from Loughborough's Department of Chemistry and Dr Dominick Shaw from the Respiratory Research Unit at City Hospital, collected [saliva](#) from patients with asthma and healthy individuals. They then performed liquid chromatography-mass spectrometry (LC-MS) analysis on the samples to find so-called metabolic biomarkers.

By detecting the presence and amount of these 'metabolic biomarkers' the new test can diagnose asthma. It also has the potential to pinpoint the severity and progression of the disease.

"Unlike other sampling methods, such as expired breath analysis, saliva can be collected by passive drool from the very young to the very old without causing distress," explains Professor Creaser.

"We were therefore interested to know if techniques for metabolic profiling of saliva to identify physiological stress from exercise – developed by Loughborough – could be applied to asthma diagnosis.

"We were very excited to discover that they could."

Before the [new test](#) can move to a clinical setting the diagnostic metabolic biomarkers identified need to be validated in further

longitudinal studies.

If this is successful, the approach could be used in early asthma diagnosis as well as part of the ongoing monitoring of patients.

The research has been published in the journal *Analytical Methods*.

More information: Aditya Malkar et al. Untargeted metabolic profiling of saliva by liquid chromatography-mass spectrometry for the identification of potential diagnostic biomarkers of asthma, *Anal. Methods* (2016). [DOI: 10.1039/C6AY00938G](https://doi.org/10.1039/C6AY00938G)

Provided by Loughborough University

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