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[Breathe deep for a new diagnosis.](#)

BLOOD tests, which can take weeks to diagnose life-threatening conditions, could soon be replaced by a machine developed in Scotland that works in seconds and needs only a sample of breath.

A company based in Glasgow has harnessed state-of-the-art laser and gas technology to develop the device they hope will be commonplace in GPs' surgeries within five years. It works by gauging tiny but significant measurements in breath samples to pinpoint potential illnesses. These units could consign blood and urine tests - and the long and anxious wait for results - to history.

Cascade Technologies, the Strathclyde University spin-out company which pioneered the technology, is also working on a similar system that could analyse breath samples to diagnose other conditions, including schizophrenia.

The company's first innovation was the world's first real-time gas detection technology. It is revolutionising the security business as it is capable of identifying immediately the presence of drugs, explosives and hazardous compounds.

Richard Cooper, a co-founder and operations director of Cascade, says the same gas-detection technology can be used to analyse breath samples to detect illnesses. Rapid results could eventually save the NHS tens of thousands of pounds.

Cooper says he also hopes the strides forward in technology will revolutionise patient care at GP surgeries: "Our technology operates in real time so results are available within moments. Blood and urine tests can take days or weeks to produce results, but we believe we have produced a valuable point-of-care instrument."

He says the equipment is sensitive enough to detect the early onset of cancer or food poisoning. The laser that powers the technology currently costs in excess of £7,000, with only a few hundred being made.

Cascade Technologies's long-term plan is to push the cost down by increasing production of the lasers. Cooper says: "While we are more about producing enabling technology, our aim in the long-term would be to have a low-cost version of our equipment in the corner of every GP surgery."

"Our vision is that it could revolutionise the whole testing process and make blood and urine tests something of the past. Once we can get the technology at the right price, no-one should ever have to wait weeks for the results of tests again."

Cooper compares the cost of the technology of that of DVD players which, when they were launched, were originally too expensive for most people but are now far cheaper.

The company also believes its innovation could help the NHS tackle the problem of bed-blocking, which costs millions every year, because the system would provide almost instant diagnoses and save patients from prolonged stays in hospital. Cooper says: "It is all about efficiency and trying to get the NHS to work more effectively."

Dr Ian McKee, a GP at Wester Hailes Medical Centre in Edinburgh and Scotsman columnist,

welcomed the new technology as a step forward in the diagnose of life-threatening conditions: "If this technology is shown to work, this is great news. Blood tests, which we use at the moment, are labour intensive and can be frightening for some patients. Blood tests also lead to patients worrying for long periods of time while they wait for the results so this new technology would be revolutionary."

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