

Portable Scanner Analyzes Cancer Cells in an Hour

By Amy Dusto | Tue Mar 1, 2011 09:41 AM ET

Waiting for pathology results on suspicious cells can take days, and long, anxious ones at that. But tech-savvy doctors could soon use a device built at the [Massachusetts General Hospital](#) to get biopsy results in less than an hour, from right in the office.

The machine is a portable nuclear magnetic resonance (NMR) scanner which can identify molecules by measuring how a magnetic field affects their nuclei. First the physician collects patient cell samples, which are miniscule enough to be aspirated with a fine needle from multiple sites of a suspect tumor, increasing the accuracy of the results. Then the physician puts the cells into the scanner and connects it to a smartphone, of all things. The device looks for signs of nine proteins specific to [cancer](#) cells in order make its diagnosis. With a custom app, the doctor can read the results from the machine within the hour.



Normally, this process involves a doctor sending a sample out to a pathology lab, waiting for them to analyze it, and relaying the result back to a patient. The mini-NMR setup deletes the middle man and eases the process for doctor and patient.

Better still, in tests so far, the device has been more accurate than some standard results. In fact, one test on 20 patients was 100 percent correct. Another was correct for 48 out of 50 people. The [results of the study](#) were published on February 23rd in the journal *Science Translational Medicine*.

And while waiting for results ... [Angry Birds](#), anyone?

Photo: R. Weissleder et al.

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