

## Smartphone app could help diagnose cancer

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Doctors currently diagnosis suspicious lumps by using a needle to extract a sample for analysis. The sample - which is stained to highlight specific proteins - typically yields results in a few days, and may be inconclusive at times.

But that could all change with the advent of a miniaturized nuclear magnetic resonance (NMR) scanner developed by Dr. Ralph Weissleder of the Massachusetts General Hospital in Boston.

The scanner identifies molecules by analyzing how nuclei are affected by magnetic fields. It also attaches magnetic nanoparticles to proteins, thereby permitting suspicious entities - such as tumor cells - to be easily identified.

According to *PhysOrg*, the device has already been tested on multiple cells collected by fine needle aspiration.

The samples were labeled with magnetic nanoparticles and subsequently injected into a micro-NMR machine.

The results were read simply by connecting the device to a smartphone with a special app, allowing doctors to reach a diagnosis - as they revealed nine protein markers for cancer cells.

So, how long did the tests and analyses take?

Well, both lasted less than one hour for each patient and delivered an accurate diagnosis in 48 of the 50 patients, while another offered 100% accuracy in 20 patients.

(Via *PhysOrg*)

