

# Revisiting the need to detect circulating tumor cells

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One of the most dangerous characteristics of cancer is its ability to metastasize, or spread through the body. For this reason, oncologists have a major need for better tests to detect cells that break away from primary tumors to travel to other parts of the body. Effective identification of these cells, referred to as circulating tumor cells (CTC's), could help guide treatment and improve quality of life for many cancer patients. A commentary in the March 17 issue of the *Journal of the American Medical Association* assesses the existing technology available to detect these cells and points to the need for still more progress in this area.

"The topic of circulating tumor cells has become more and more important as our knowledge of cancer and, in particular, [breast cancer](#) has evolved and as the technology to detect these cells has improved," says Massimo Cristofanilli, M.D., F.A.C.P., chair of the department of medical oncology at Fox Chase Cancer Center and lead author of the commentary. "But even though progress has been made, we need even better capabilities to detect these cells, which can tell us so much about the course of a patient's cancer."

Currently there is only one standardized and validated test approved by the U.S. [Food and Drug Administration](#) for the detection of CTC's, called the CellSearch™ system. CellSearch is a simple blood test that captures and assesses CTC's to determine the prognosis of patients with metastatic breast, colorectal, or [prostate cancer](#) at any time. This test, however, is only able to count CTC's and therefore additional

technologies are being explored to capture more cells, different populations of the cells, and the gene expression patterns of the cells.

"It's important for us to look at all of these technologies in a more critical way to see which technologies are best at distinguishing between cells that have simply been shed by the tumor and those that are, instead demonstrating more aggressive," says Cristofanilli.

Using technologies that complement one another may also help improve the process of detecting these cells and design more personalized therapies. "For example, with inflammatory breast cancer we know that one technology alone will not help in detecting these cells," says Cristofanilli. "This doesn't mean they aren't there, it just means we aren't able to see them. It's like using a camera—by using full color, rather than black and white, you're able to see more distinct details."

Provided by Fox Chase Cancer Center

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