

Report: New system for more accurate cancer staging to aid precision medicine

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Adding a blood test called liquid biopsy to a standard tissue biopsy could significantly improve the accuracy of diagnosis and treatment for patients with cancer, according to researchers at Wake Forest Baptist Medical Center.

Their recommendation is published in the current online issue of the journal *Annals of Oncology*.

Cancer management relies on the ability of physicians to accurately "stage" the disease - to determine the size and extent of the primary tumor and whether the [cancer](#) cells have spread to the lymph nodes or other organs. Conventional staging of malignant tumors uses the TNM Staging System, which relies on a tissue sample taken from the tumor either through surgery or [needle biopsy](#).

"Although cancer diagnosis and treatment have improved greatly over the past decade, too often the initial results are inaccurate and short-lived and the cancer reoccurs because of limitations of the current staging system and the dynamic and systemic nature of cancer," said the review's lead author Wei Zhang, Ph.D., an endowed Hanes and Willis Family Professor in cancer at Wake Forest School of Medicine, a part of Wake Forest Baptist.

Over the last several years, insight into the systemic nature of cancer has emerged from the study of circulating tumor DNAs (ctDNA) that can be detected by powerful sequencing technology through a process known as

[liquid biopsy](#).

This expanded capacity to detect cancer-specific mutations, particularly using a noninvasive blood draw that enables resampling over time during cancer treatment, enabled oncologists in the precision oncology program at Wake Forest Baptist to evaluate the value of liquid biopsy in guiding cancer care. Approximately 400 patients at Wake Forest Baptist have been tested by this liquid biopsy. Based on analysis of these results, the team concluded the system of cancer staging should be revised.

"We propose developing a modified staging approach that adds a [liquid biopsy](#) to the conventional TNM system," Zhang said.

"The ctDNA circulating in the blood provides a reservoir of DNA information about cancer status that we simply don't have using TNM alone. This could dramatically improve cancer early detection, diagnosis, prognosis and treatment, providing real benefits to cancer patients."

Although the technology is still evolving and many additional steps are needed before widespread adoption and implementation can occur, Zhang and his team hope to raise awareness of the potential of a new, more effective approach to staging and subsequently more precise cancer [treatment](#).

Provided by Wake Forest University Baptist Medical Center

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