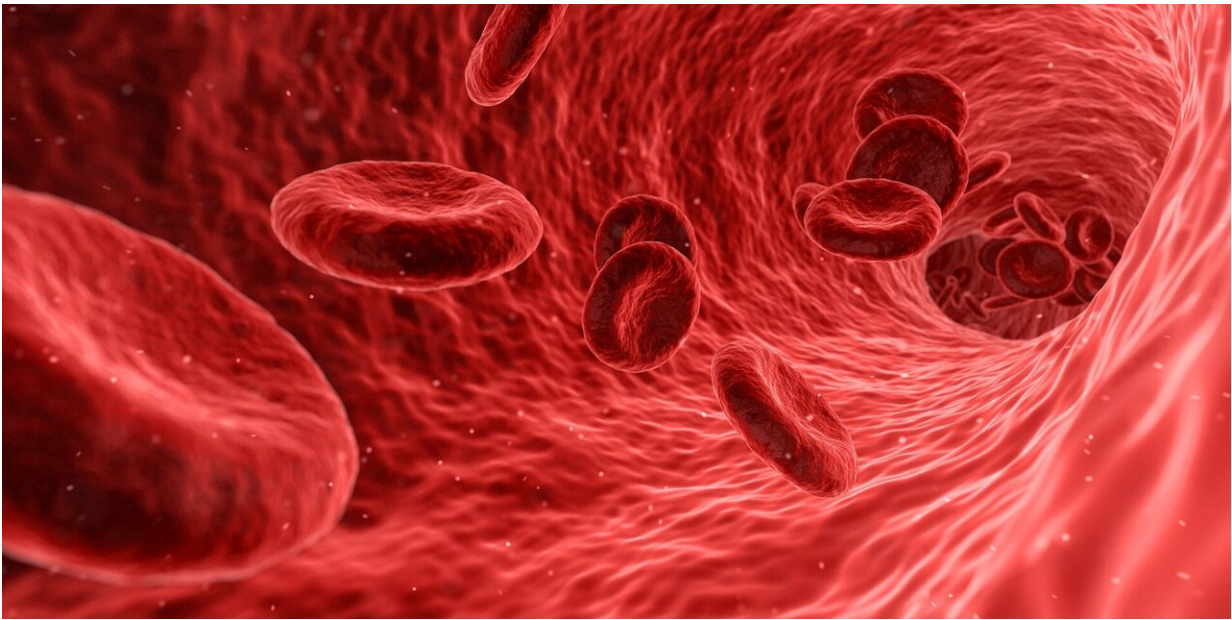


Accurate lymphoma prognosis from a simple blood test

October 4 2019, by Kristin Samuelson



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After a patient is diagnosed with lymphoma—an often-treatable type of cancer that attacks the lymph nodes, spleen, thymus, bone marrow and more—the natural next steps are determining the patient's survival outlook and deciding the best course of treatment.

But current methods of doing so remain inaccurate or invasive, often involving a tissue biopsy. A revolutionary new [blood](#) test created by

scientists from Northwestern Medicine and the University of Chicago accurately identified if a patient with lymphoma will relapse after receiving treatment and predicted their survival time, according to a recent study.

This noninvasive blood-based test is able to determine, on a molecular level, what kind of tumor the patient has, which informs how long the patient might live or how well they'll respond to treatment. It likely will be a convenient approach for predicting clinical outcomes of lymphoma, which will provide the possibility for precise care of these patients, the study authors said.

It is the latest discovery in the new blood-testing technology that Northwestern scientists and collaborators used most recently to detect patients' liver cancer or diabetic complications in patients with diabetes and it is now being tested in other major cancers.

The incidence rate of lymphoma has almost doubled in the U.S. since the 1970s. The most recent statistics indicate that in 2016 alone, there were more than 81,000 new cases of lymphoma diagnosed in the U.S. While it is a very treatable cancer, determinations of a patient's survival outlook and course of treatment can vary widely.

"Lymphoma represents an increasingly important health issue in the United States, so developing novel approaches for precise care of these patients will improve patients' clinical outcomes and life quality," said co-senior author Wei Zhang, associate professor of cancer epidemiology and prevention at Northwestern University Feinberg School of Medicine.

The study was recently published in the journal *Blood Advances*.

The prototype of this novel technology was developed by a co-senior author of this study, Chuan He, the John T. Wilson Distinguished

Service Professor at the University of Chicago. Zhang, He and Brian Chiu, a cancer epidemiologist at the University of Chicago and also a co-senior author of the current study, worked together to create this [blood test](#) for [lymphoma](#) prognosis. With just three to five milliliters of blood, the noninvasive, clinically convenient test analyzes a patient's DNA by using highly sensitive blood biomarkers.

Prior to this study, the scientists detected earlier and more accurately whether diabetic patients had life-threatening vascular complications such as heart disease, atherosclerosis and kidney failure.

In previously published research using this technology, Zhang analyzed more than 3,000 people's blood samples to accurately identify liver cancer in patients without mistakenly flagging those merely at risk.

Zhang, a member of the Robert H. Lurie Comprehensive Cancer Center of Northwestern University, is currently testing this blood-analysis technology on other major cancers, including multiple myeloma and colon cancer. He is comprehensively comparing the technology with tissue biopsy in every [cancer](#) he and his collaborators study.

The goal is to test the technology on patients in a clinical trial, Zhang said, and eventually bring it into a real clinical setting.

"Ideally in the future, a patient could get their blood tested with this technology and check for a suite of different cancers," Zhang said.

More information: Brian C.-H. Chiu et al. Prognostic implications of 5-hydroxymethylcytosines from circulating cell-free DNA in diffuse large B-cell lymphoma, *Blood Advances* (2019). [DOI: 10.1182/bloodadvances.2019000175](https://doi.org/10.1182/bloodadvances.2019000175)

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