



Beyond Basic Blood Tests: A Window Into Your Health

(NIH-News In Health) Blood courses through your body with every heartbeat. It carries life-giving oxygen to every organ. Blood also helps remove the waste products your body makes. Because it flows to and from every part of the body, blood can provide an important window into what's happening under the skin.

"So many biochemical compounds get absorbed from the tissues of the body into the blood. This makes the blood a really good place to look for hints of disease," says Dr. Lori Minasian, who helps oversee cancer prevention research at NIH.

Blood tests can help your health care provider diagnose diseases. They can also help them choose the best treatments for many health conditions. Commonly used blood tests look for compounds that signal an increased risk of heart disease. Other tests help diagnose diabetes, vitamin deficiencies, and many types of infections.

Blood tests have been helpful for preventing some common, dangerous health events, like heart attack and stroke. NIH-funded researchers are working to expand the number of health conditions that can be detected with a simple blood test. These include cancer, dementia, and other deadly diseases.



Tracking Cancer

Like normal cells in the body, cancer cells also come into regular contact with blood. This means that substances from tumors, like pieces of genes or even whole cancer cells, can get into the bloodstream.

Researchers have developed tests to look for such substances in the blood. These are called liquid biopsies. These tests are already used for some types of cancer to monitor whether a tumor comes back after treatment, Minasian says. Scientists are also looking at whether these tests can identify which tumors may need

more aggressive treatment to prevent them from returning.

Blood tests might one day be used for cancer screening, too. Screening tests aim to catch cancer early—before symptoms develop. Cancers found early are often easier to treat. This can save lives.

Some cancer screening tests are already available through your doctor. These include mammograms for breast cancer and colonoscopy for colorectal cancer. But neither are as simple to do as a blood test.

Many types of cancer still don't have screening tests available. More than half of cancer deaths are from cancers that don't have screening tests yet. These include deadly cancers like ovarian cancer and pancreatic cancer.

"The idea that, with a single blood test, you could screen for many deadly cancer types, has huge potential," says Minasian.

The usefulness of blood tests for cancer screening is still in the early research stages. Right now, there's limited evidence for any benefits. Despite this, blood tests for cancer screening are marketed directly to consumers. People should be very careful about using these tests right now, Minasian cautions.

"There is not enough data to understand the full risks and benefits of using these blood tests for cancer screening," she says. "The results could

lead to anxiety or may provide a sense of false reassurance."

If you're concerned about your cancer risk, talk with a health care provider. They can help you stay up to date with proven screening tests.

Detecting Alzheimer's Disease

Like your body, your brain is full of blood vessels. So substances from injured brain cells can also enter your blood.

For decades, researchers have been trying to



develop blood tests to help diagnose and better treat mental health conditions, explains Dr. John Hsiao, a psychiatrist at NIH. But, this has proven difficult.

Blood tests to determine whether someone is at risk for dementias are showing promise, Hsiao says. The proteins that damage brain cells in these conditions are now well understood. This means they can be measured.

The most common cause of dementia in older adults is Alzheimer's disease. Measuring Alzheimer's disease proteins currently requires a brain scan or collecting spinal fluid. These tests can be costly and aren't available in every community.

"But these abnormal proteins that build up in the brain also show up in the blood," says Dr. Reisa Sperling, a neurologist at Harvard Medical School. Blood tests for Alzheimer's have the potential to be "cheap and easy," Hsiao adds.

Recent studies have shown that blood tests can detect early signs of Alzheimer's disease in the brain. So researchers are looking at whether they can use them to find and treat people with the disease early. They hope this could help prevent or slow the loss of brain cells.

"Studies so far suggest that our best chance at being able to delay the memory loss and other symptoms of Alzheimer's disease would be to treat very early," Sperling says. But she does not recommend people without symptoms get blood tests done outside of studies just yet.

Some blood tests that claim to detect Alzheimer's disease are being advertised to the public. But they are not yet FDA approved. Sperling warns that some of these tests may not be as accurate as those being used by researchers.

If you're concerned about your risk for dementia, Sperling recommends joining a clinical study. "There are great research trials for people to go into, and they will use the best blood tests available," she says. Learn more at Alzheimer's Disease Research Centers or Alzheimer's Clinical Trials Consortium(link is external).

Researchers are also trying to develop blood tests to detect other causes of dementia and brain conditions like Parkinson's disease. "These tests have the potential to really change how we diagnose and understand these conditions," Hsiao says.

Stay Up To Date

It may be a while before a blood draw at your local clinic can find diseases like cancer or dementia. But keeping up with current blood tests can help you get early treatment for other potentially lifethreatening problems. See the Ask Your Doctor box for more.

Ask Your Doctor

What Blood Tests Do I Need?

Depending on your age and other factors, your health care provider may order tests that measure:

- Blood glucose (sugar): To help diagnose diabetes or see whether you're at risk for diabetes.
- Blood lipids (fats): To assess your risk for heart disease and related conditions. These tests measure levels of lipids called cholesterol and triglycerides.
- **Blood cell counts:** To help diagnose many diseases, including infections, cancer, and bleeding disorders. These tests measure the types of cells that carry oxygen and fight diseases.
- Organ function: To make sure organs like your liver, kidneys, and heart are working properly.
- Specific blood-borne diseases: To look for diseases like HIV and hepatitis C, which may not cause symptoms until after they've started to damage the body.
- Vitamin deficiencies: To measure levels of vitamins in the body. These aren't usually recommended for healthy people. But if you have symptoms of some health conditions, your doctor may order tests to look for low levels of some vitamins.

NOTICE of ANNUAL MEETING of MEMBERS



The Annual Meeting of the Members of the Heartland Alliance of America will be held at 12444 Powerscourt Drive, Suite 500A, St. Louis, Missouri 63131 on Monday, July 29, 2024 at 10:00 a.m. CST for election of Directors and for the transaction of such other business as may properly come before the meeting or any adjournment thereof.

The above notice is given pursuant to the By-Laws of the Association.

PROXY

Heartland Alliance of America July 29, 2024 Annual Meeting of Members THIS PROXY IS SOLICITED ON BEHALF OF THE HEARTLAND ALLIANCE OF AMERICA

The undersigned Member of the Heartland Alliance of America does hereby constitute and appoint the President of the Heartland Alliance of America, the true and lawful attorney(s) of the undersigned with full power of substitution, to appear and act as the proxy or proxies of the undersigned at the Annual Meeting of the Members of the Heartland Alliance of America and at any and all adjournments thereof, and to vote for and in the name, place and stead of the undersigned, as fully as the undersigned might or could do if personally present, as set forth below:

- 1. () FOR, or to () WITHOLD AUTHORITY to vote for the following nominees for the Board of Directors for the terms of office as set forth below:
 - a. Charles Jackson
- 2. In their discretion, the proxies are authorized to vote upon such other business as may properly come before the Meeting.

DATED:	_ , 2024	
		Signature
		Name (please print)

Please date and sign and return promptly to 12444 Powerscourt Drive, Suite 500A, St. Louis, MO 63131 whether or not you expect to attend this meeting. The Proxy is revocable and will not affect your right to vote in person in the event that you attend the meeting.

St. Louis, Missouri Date: June 29, 2024

(over)

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2024

Call for Nominations to the Board of Directors

The Heartland Alliance of America ("Heartland") will be nominating one director to its Board of Directors at its annual meeting 2024. Heartland's Board of Directors has appointed a Nominations propose Heartland Board nominate successor directors. members may also nominations for the Directors. Heartland members may nominate individuals to the Board of Directors through a written petition. The petition must identify the individual being nominated and must be signed by at least 49 current active Heartland members. All nominations for Directors, including nominations by petition, must be submitted to Heartland no later than July 22, 2024. A sample petition is printed below for your review.

SAMPLE Petition for Nomination to the Heartland Board of Directors Individual being Nominated:				
				Heartland Member Name:

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Membership Services Office
Heartland Alliance of America
12444 Powerscourt Drive
Suite 500A
St. Louis, MO 63131

1-800-992-8044 or (636) 530-7200

Articles in this newsletter are meant to be informative, enlightening, and helpful to you. While all information contained herein is meant to be completely factual, it is always subject to change. Articles are not intended to provide medical advice, diagnosis or treatment.

Consult your doctor before starting any exercise program.