

New study helps predict life expectancy in healthy people using complete blood count risk score

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For years, doctors have been divided on how effective annual testing and screenings are for apparently healthy individuals. New research, however, shows that a simple blood test may predict who is at highest risk to develop heart problems – and how long these people may have to live.

Researchers at the Intermountain Medical Center Heart Institute in Murray, Utah, collaborated with scientists at Harvard's Brigham and Women's Hospital in Boston on the new study using the complete blood count [risk score](#), an inexpensive tool that uses all of the information in the common blood test that includes information frequently underused.

Researchers will present this study at the 2013 American Heart Association Scientific Sessions in Dallas, on Nov. 19.

Physicians have used this CBC lab test for years, but they did not understand that all of its components provide information about life expectancy, according to lead researcher, Benjamin Horne, PhD, director of cardiovascular and genetic epidemiology at the Intermountain Medical Center Heart Institute in Murray, Utah.

"Physicians can now provide better care using the CBC risk score as a standard method to assess whether patients may have future health problems that lead to death," he said.

"Among apparently healthy individuals, this risk score can help physicians identify which patients have higher risk, as well as who they should focus further time and effort. The score also gives physicians excellent confidence in identifying low-risk individuals who don't need as much attention or costly testing," said Dr. Horne.

The new study used CBC lab testing information gathered as part of the JUPITER Trial, a [randomized clinical trial](#) of a cholesterol-lowering drug, Rosuvastatin, led by Harvard cardiologist Paul M. Ridker, MD.

The JUPITER study enrolled more than 17,000 individuals in 26 countries and followed them for up to five years. Participants in JUPITER had a clean slate free of cardiovascular disease normal low-density-lipoprotein cholesterol ("bad" cholesterol), but elevated C-reactive protein, a marker of inflammation associated with cardiovascular disease.

When the Harvard team of researchers evaluated the Intermountain-derived CBC risk score among JUPITER trial participants, they found it to be a powerful tool to predict death.

Individuals in JUPITER with a lower CBC risk score were very unlikely to die, while those with CBC risk scores in the middle of the range had more than 50 percent higher risk of death. People with the highest CBC risk scores were about twice as likely to die as those with low scores, researchers found.

Whether physicians use this risk score, however, is a different story.

Most risk scores created in medicine are useful, but aren't used because they add time and complexity to gather the data and compute a risk score. The CBC risk score and its parent risk score, the Intermountain Risk Score (a combination of the CBC lab test and the basic metabolic

profile [blood test](#) developed by scientists at Intermountain Healthcare) were created to provide useful health information to allow physicians to easily compute the risk score while continuing to care for patients.

"We now have a standardized way of assessing the risk of mortality for all individuals, not just ones with a history of heart diseases," said Dr. Horne. "One of the beauties of this score is it uses clinically familiar, standardized medical information already in electronic format. The financial cost is also almost zero because most patients already receive the CBC test. The clinical cost is also low, because of electronic medical records.

Physicians receive this critical information about future risk, which adds to their knowledge about the patient, while it takes very little of their time or effort to obtain the information."

To build on this research, Intermountain Medical Center Heart Institute scientists have started a prospective randomized clinical trial in which clinicians receive the score electronically for half of the patients. This study is testing whether the knowledge of a patient's risk score aids physicians in personalizing medical care so that patient outcomes are improved. The next step among individuals similar to those in JUPITER is to perform a similar type of study in a non-hospitalized primary care population.

Provided by Intermountain Medical Center

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