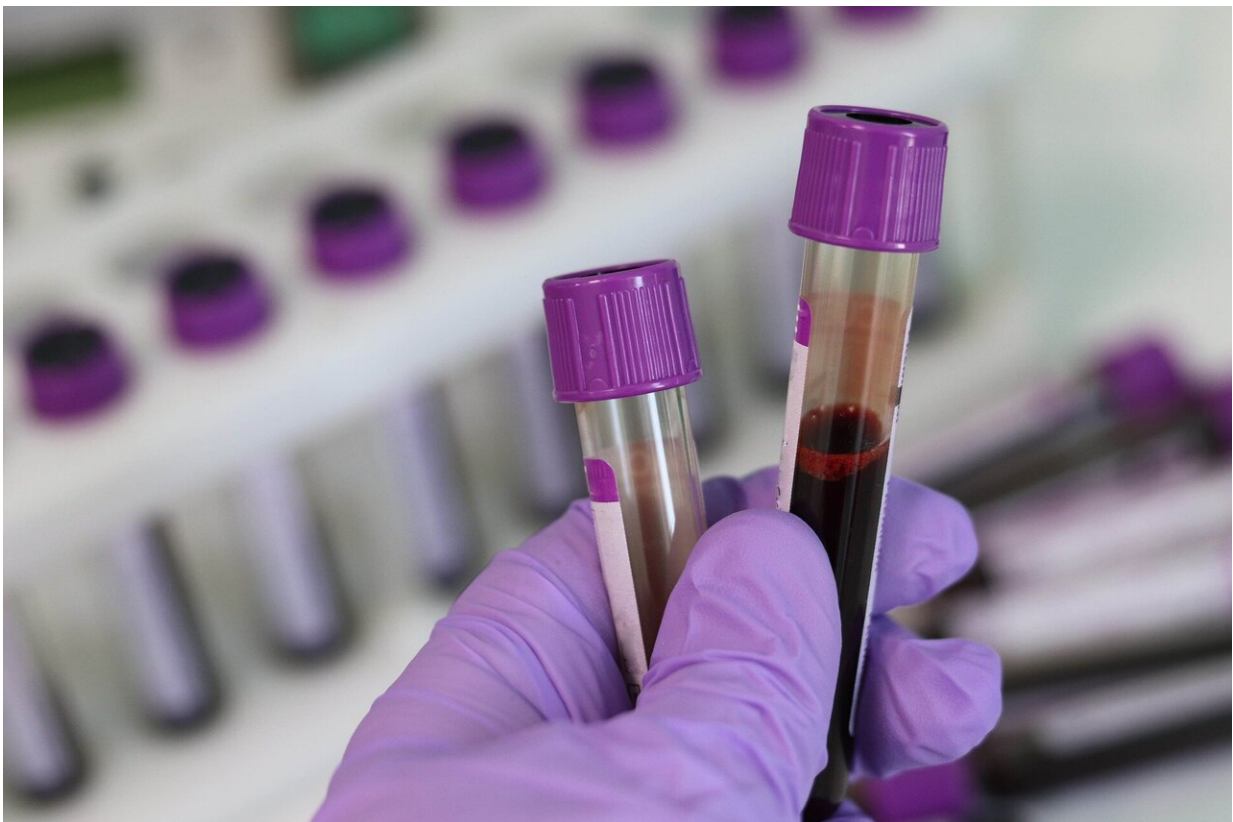


# Tracking troponin I over time to manage blood pressure and predict risk of heart disease

March 13 2024, by Anna Jones

---



Credit: CC0 Public Domain

Cardiac troponins are a group of markers used to predict the risk of heart disease. However, it is not well understood how controlling blood

pressure affects levels of troponin I and whether the change in troponin I levels predicted the future risk of cardiovascular disease.

Physician–scientists at the University of Alabama at Birmingham Marnix E. Heersink School of Medicine leveraged data from the Systolic Blood Pressure Intervention Trial, a large nationwide clinical trial, to shed new light on the role of cardiac troponin I in managing [blood pressure](#) and predicting [cardiovascular disease risk](#) in their recent manuscript [published](#) in *JACC: Advances*.

Hypertension affects nearly half the United States population. Individuals with hypertension are at a higher risk of developing cardiovascular disease if blood pressure is not controlled.

Identifying hypertensive individuals with a high risk of developing cardiovascular disease may promote intensification and modification of antihypertensive therapy to reduce their risk. In the study, the research team analyzed troponin I measurements from more than 8,000 participants.

"Instead of using the troponin I levels at a single point in time, the team assessed the change in the troponin I levels between the start of the trial and after one year," said Naman Shetty, M.D., a research fellow in the UAB Division of Cardiovascular Disease and first author of the study. "Intriguingly, the study revealed that intensive blood pressure control was more likely to lead to a reduction in troponin I levels."

This finding continued to be consistent after accounting for various factors, including changes in [systolic blood pressure](#), [diastolic blood pressure](#) and renal function.

"We also examined whether the change in troponin I levels predicted the risk of developing cardiovascular disease," Shetty said. "An increase in

troponin I levels after one year was associated with a higher risk of these events, highlighting the potential of troponin I as a prognostic marker for cardiovascular disease."

Pankaj Arora, M.D., the senior author of the manuscript and an associate professor in the UAB Division of Cardiovascular Disease, says the study's insights are important considering previous findings regarding cardiac troponin T, another biomarker of cardiac injury.

Unlike troponin I, troponin T levels can increase in conditions other than those damaging the heart, such as diseases affecting the muscles of the body. The prior analysis showed that intensive treatment of hypertension, surprisingly, led to an increase in troponin T levels, which was nullified when accounting for changes in [kidney function](#).

"These findings underscore the specificity and robustness of troponin I as a cardiac-specific biomarker unaffected by kidney function alterations, making it a more reliable marker for myocardial injury and cardiovascular disease risk stratification," Arora said. "The decrease in troponin I levels with intensive blood pressure control and its predictive value for incident cardiovascular disease events highlight the potential of troponin I as a vital tool in managing elevated blood pressure and reducing cardiovascular disease risk."

Arora says this research opens new avenues for using [troponin I](#) as a surrogate marker to monitor responses to preventive lifestyle measures, antihypertensive treatments, and personalized care in individuals with elevated blood pressure and increased cardiovascular disease risk.

**More information:** Naman S. Shetty et al, Change in Troponin I Levels With Intensive Blood Pressure Control, *JACC: Advances* (2023).

[DOI: 10.1016/j.jacadv.2023.100775](https://doi.org/10.1016/j.jacadv.2023.100775)

Provided by University of Alabama at Birmingham

Citation: Tracking troponin I over time to manage blood pressure and predict risk of heart disease (2024, March 13) retrieved 27 April 2024 from

<https://medicalxpress.com/news/2024-03-tracking-troponin-blood-pressure-heart.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.