

## **What is Cystatin C and is your doctor checking it?**

I want to talk about a new cutting edge biomarker that can be measured in the blood and may be a predictor of cardiovascular events including heart attacks, strokes, and cardiovascular deaths. The name of the marker is called Cystatin C. I first heard about this protein in college biology but really never paid much attention to it at the time. Recently, this protein is becoming a hot topic in cardiovascular disease prevention. It is a small protein that is produced at a steady rate by virtually all the cells in your body. This little protein is measured in the blood and is currently used as a biomarker of kidney function and may become the gold standard test when looking for early kidney disease. New research has indicated that Cystatin C serum marker test results may be a better indicator of a person's potential for new onset or worsening cardiovascular disease. This is important because even moderate renal dysfunction increases the risk of one having a heart attack, stroke or other cardiovascular event including death.

Let's break it down and try and simplify what goes on at the level of the kidney in the human body. Many cells secrete proteins, and many proteins are filtered through the kidneys. Most doctors currently measure the Glomerular Filtration Rate, or GFR, to tell how well the kidneys are functioning. The GFR can be inaccurate and is affected by muscle mass and protein intake. If you have even slight kidney malfunction and the GFR declines, Cystatin C levels will rise. Measuring the level may be a good way to determine "preclinical kidney disease" and allow intervention before overt kidney failure is present.

When I give talks to other physicians about this, they always say – "We look at serum creatinine levels and this blood test is standard on every kidney blood panel". Testing creatinine levels for impaired kidney function has been sufficient and is currently the gold standard for measuring kidney dysfunction, but it has limitations. Blood levels can be affected by several factors, including diet, prescription drug use, ethnicity, gender, amount or lack of physical activity and a person's muscle mass. Sometimes single measurements of creatinine level are insufficient to see the scope of kidney disease for those patients who have fluctuations in kidney function. Emerging data also suggests that increased cardiovascular mortality in patients with elevated Cystatin C levels may be independent of kidney function.

Currently, there is an abundance of new research in progress to better elucidate the role of Cytastin C in cardiovascular disease prevention and this exciting new topic may add to better ways to prevent death from the number 1 killer of men and women in the United States.