



VA research on **CARDIOVASCULAR DISEASE**

Cardiovascular disease refers to conditions that affect the heart or blood vessels. It describes conditions ranging from peripheral artery disease and high blood pressure to heart attacks and strokes.

ABOUT CARDIOVASCULAR DISEASE

• Cardiovascular disease is the number-one killer of Americans, and is the leading cause of hospitalization in the VA health care system. It is also a major cause of disability.

• Cardiovascular disease is particularly important to Veterans because it is associated with a number of other diseases that often affect them. These include diabetes, spinal cord injuries, and posttraumatic stress disorder.

• Although there are many different forms of cardiovascular disease, one of the most common forms is a narrowing or a blocking of the blood vessels that supply blood to the heart. This is called coronary artery disease (CAD), and is the main reason people have heart attacks.

VA RESEARCH ON CARDIOVASCULAR DISEASE: OVERVIEW

• A VA study [conducted](#) in the 1960s generated the first definitive evidence that treating moderate high blood pressure helps prevent and delay the complications hypertension can bring. These

complications can include heart disease, kidney disease, stroke, and CAD.

• VA researchers are developing new treatments for cardiovascular disease and helping to improve existing treatments. They are looking at the genetic and lifestyle causes of the disease and are conducting studies ranging from lab experiments to large clinical trials involving thousands of patients.

• VA is also making Veterans and their families aware of the risk factors for cardiovascular disease. Besides high blood pressure, these include smoking, high cholesterol, obesity, lack of physical activity, and uncontrolled diabetes.

• The department offers a number of evidence-based programs to help Veterans manage these conditions. VA researchers review these programs, evaluate their effectiveness, and make suggestions for improvements.

SELECTED MILESTONES AND MAJOR EVENTS

1960 – [Successfully implanted](#) the first cardiac pacemaker, a device developed by a VA team

1970 – [Published](#) the results of a landmark VA cooperative study on hypertension, showing that treating moderate high blood pressure prevented or delayed catastrophic health complications

1996 – Developed [clinical practice guidelines](#) on cholesterol screening for the American College of Physicians

2007 – [Learned](#) that balloon angioplasty and stenting do little to improve outcomes for patients with stable coronary artery disease who also receive optimal drug therapy and undergo lifestyle changes

2015 – [Participated](#) in the [Systolic Blood Pressure Intervention Trial](#) (SPRINT), which found that significantly lowered systolic blood pressure reduces the rate of heart and kidney diseases, stroke, and age-related declines in people over 65

RECENT STUDIES: SELECTED HIGHLIGHTS

• **Patients who were assigned to reach a systolic blood pressure goal below 120**, far lower than current guidelines of 140 (or 150 for people over 60), had their risks of heart attacks, heart failure, and strokes reduced by a third, and their risk of death reduced by a quarter, according

(Continued on back)



to a study led in part by a researcher from the Memphis VA Medical Center. ([New England Journal of Medicine](#), Nov. 28, 2015)

• Older men treated within the VA health care system for acute myocardial infarctions (heart attacks) are less likely to die within 30 days after the event than Medicare beneficiaries treated at other hospitals, although they are more likely to require readmission during the same time period. Mortality rates and readmission rates were higher at VA hospitals, however, for pneumonia. ([Journal of the American Medical Association](#), Feb. 9, 2016)

• Veterans with posttraumatic stress disorder (PTSD) are more likely to have reduced blood flow to the heart, or ischemia. After statistical adjustments for factors known to influence heart disease, PTSD was associated with more than double the risk for ischemia—and the more severe the PTSD symptoms were, the greater the risk. ([Biological Psychiatry](#), Dec. 1, 2013)

• Women Veterans who underwent cardiac catheterization tended to be younger and more obese than men, and were more likely to have PTSD or depression. They were also significantly less likely to have obstructive coronary disease, and consequently were less likely to have been prescribed heart medications. However, their long-term health outcomes were about the same as those of their male counterparts, according to researchers with VA and the University of California, San Francisco. ([Circulation: Cardiovascular Quality and Outcomes](#), March 2015)

• Intensive glucose control in patients whose type 2 diabetes had previously been poorly controlled had no significant effect on the rates of major cardiovascular events such as coronary artery disease and stroke, compared with those who were treated with standard glucose-control measures. This 2009 finding by the VA Diabetes Trial was followed up on in 2015 with a finding that patients who had been in the study’s intensive-control group had a lower incidence of cardiovascular events after the trial was

over, but their survival rates were no better than those who were not in that group. ([New England Journal of Medicine](#), June 4, 2015; earlier study in [New England Journal of Medicine](#), Jan. 8, 2009)

• Serious hypoglycemia may be associated with the progression of atherosclerosis, according to VA Diabetes Trial researchers. Atherosclerosis is a common form of arteriosclerosis in which fatty substances form a deposit of plaque on the inner lining of arterial walls. This can restrict blood flow, and the plaques can burst, triggering a blood clot. ([Diabetes Care](#), Mar. 2016)

For more information on VA studies on cardiovascular disease and other key topics relating to Veterans’ health, please visit www.research.va.gov/topics

Cardiovascular disease is the number-one killer of Americans, and is the leading cause of hospitalization in the VA health care system. It is also a major cause of disability.

Updated September 2016 • For a digital version of this fact sheet with active links to sources, visit www.research.va.gov/topics