FACT SHEET

INVESTING IN HEART DISEASE AND STROKE RESEARCH

OVERVIEW

Cardiovascular disease (CVD), including heart disease and stroke, continues to place the highest burden on our nation's health and economy, and it's projected to get worse.[1] Currently, 1 in 3 American adults (more than 92 million) suffer from CVD.[2] CVD was the primary cause of more than 30% of all U.S. deaths 2015.[2,3] Nearly 2300 in the US die from CVD each day—1 death every 38 seconds. Although CVD death rates fell more than 22% from 2005 to 2015, the decline has slowed to less than 1% a year since 2012.[4]

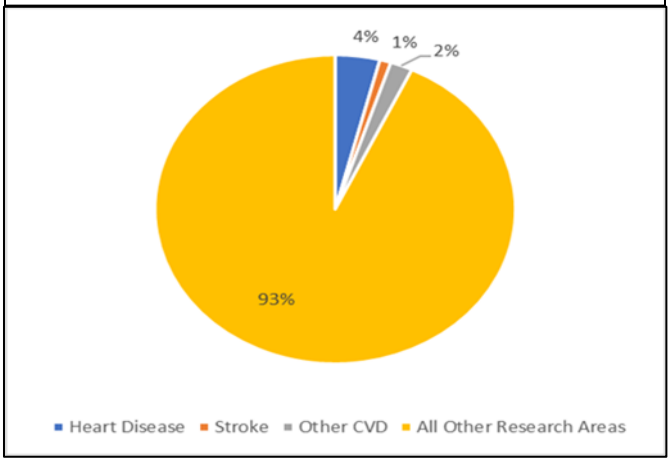
CVD BURDEN

In the U.S. heart disease and stroke are the first and fifth highest causes of death, respectively.[5] In 2015, the direct and indirect costs for CVD were an estimated $555 billion. Recent projections show 45% of the U.S. adult population will have some form of CVD by 2035, with total annual costs reaching more than $1 trillion. Between 2015 and 2035, total direct stroke-related costs are expected to increase from $66.3 billion to $142.9 billion. Stroke prevalence is expected to increase by nearly 41%. In FY 2015, the Center for Medicare and Medicaid Services spent more per capita on stroke (more than $32,000) and heart failure (nearly $29,000) than any other chronic condition.[6]

NIH FUNDING VS. CVD BURDEN

Despite a significant return on investment, the National Institutes of Health (NIH) invests a highly disproportionate 4% of its budget on heart disease research, a mere 1% on stroke research, and only 1% on other CVDs (see chart). This funding level is not commensurate with scientific opportunities, the number of people afflicted with CVD, or the physical and economic burden it inflicts on our nation.

Heart Disease, Stroke, and Other CVD Research Funding as a Percent of Total NIH Funding FY 2017



NIH HEART AND STROKE RESEARCH BENEFITS THE ECONOMY

- NIH funding supported more than 400,000 jobs and nearly $70 billion in economic activity nationwide in 2017.[7]
- For every $1 spent on CVD research, the return on investment is $30.[8]
- A study estimates the original National Institute of Neurological Disorders and Stroke-funded tPA trial resulted in a 10-year net benefit of $6.47 billion.[9]
- The NIH's *Women's Health Initiative* resulted in a total economic return of $140 for every $1 invested in the trial and led to 76,000 fewer cases of cardiovascular disease.[10]

NIH HEART AND STROKE RESEARCH → BETTER PATIENT OUTCOMES

Some of the major advances in heart disease and stroke treatments include the following:

- According to the SPRINT trial, adults over age 50 have a 25% reduced risk of heart attack, heart failure, and stroke, and a 27% less likelihood of all cause death by maintaining a systolic blood pressure of less than 120 mm Hg compared to the previous standard of 140 mm Hg.[11]

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- Using the SPRINT trial data, researchers have developed new AHA/ACC (American College of Cardiology) high blood pressure guidelines were developed recommending that blood pressure greater than 130/80 mmHg should be treated earlier with lifestyle changes and medication.[12]
- Following percutaneous coronary intervention, community-based cardiac rehabilitation can increase cardiac ejection fraction, exercise tolerance, and physical status in heart attack patients.[13]
- Applying stent systems can remove clots in large blood vessels in some ischemic stroke patients to prevent brain damage.[14]
- Utilizing a less invasive way to perform transcatheter aortic valve replacement, transscaval access, makes it more available to high risk patients, mainly women.[15]
- Using data from the DEFUSE 3 trial proves brain imaging can identify patients who will benefit from clot removal up to 16 hours after suffering a major stroke, preventing death or major disability.[16]

EMERGING AREAS OF CVD RESEARCH

Although much has been accomplished in treating risk factors, cardiovascular disease is not "cured." As the population ages, the demand will increase for more and better ways to allow Americans to live free from CVD. Some promising new research opportunities include:

- Using cigarette smoking to identify genes that regulate blood pressure.[17]
- Determining if in-home telerehabilitation is effective at improving motor recovery and patient education after stroke.[18]
- Examining whether SGLT2 inhibitors may lower death and heart failure rates for diabetic patients more so than other glucose-lowering drugs.[19]
- Combining low doses of the blood thinner rivaroxaban and aspirin to determine if it is more effective than aspirin alone in preventing cardiovascular deaths, heart attacks, strokes and major amputations for people with peripheral artery disease.[20]
- Analyzing whether anti-inflammatory drugs can reduce the likelihood of heart attack, stroke, or death in people with a history of heart disease.[21]
- Refining a fully-functioning artificial human heart muscle with tissue from human stem cells for use after a heart attack.[22]
- Exploiting the newly identified 22 new genes for stroke to develop potential targets for drug development.[23]
- Creating a smartphone application that will be able to provide instant, accurate blood pressure readings with the simple touch of a finger.[24]

THE ASSOCIATION ADVOCATES

The American Heart Association joins the medical research community in seeking robust, sustainable and predictable funding for the NIH. Moreover, we are working to increase funding for NIH heart and stroke research. This will capitalize on NIH's investment to improve Americans' health, spur economic growth and innovation, and preserve U.S. leadership in medical research.

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