

Cardiovascular Disease Prevention

Cardiovascular disease (CVD) includes a number of conditions affecting the structures or function of the heart and includes such significant health issues as hypertension, congenital heart disease, heart failure, stroke, and related conditions. By 2030 it is projected that more than 40% of the US population is expected to suffer from CVD with the annual direct medical costs expected to rise to over \$800 billion. If indirect costs such as lost days at work are taken into account, the American Heart Association estimates that an additional \$275 billion will be added to the economic impact by 2030. Along with the economic impact of CVD, it's important to remember the enormous personal cost of CVD due to families losing loved ones prematurely, and the societal, cultural, and global impact from the loss of these individuals' gifts, talents, and contributions to their families, neighborhoods, communities, and world.

Within the CVD diagnosis spectrum heart disease is the leading cause of death in the United States for both men and woman. According to a 2015 Center for Disease Control report, 610,000 people die of heart disease in the United States every year—that's 1 in every 4 deaths. Not only does heart disease kill people, but also the direct and indirect costs of heart disease total more than \$444 billion annually.

Health, Lifestyle, and Society: Who Pays?

Heart disease forces us to ask not only about human biology and how the cardiovascular system works, but also about the lifestyle choices we make, the personal health freedoms we assume, the care and stewardship responsibilities we have for each another, and how best to respond to widespread poverty and its impact on health and wellness. These complex questions and societal issues are inter-connected, and require us to carefully examine our beliefs and moral convictions together with our scientific understanding.

Personal Choices:

While some hereditary risk factors cannot be controlled, most cases of heart disease are preventable by changes in lifestyle. The impact of lifestyle choices on heart disease highlights the need for the expression of virtues like wisdom, justice, hope, and self-control as we approach discussing the risk factors that involve personal choices.

- **Tobacco use:** The chemicals in tobacco smoke harm blood cells and damage the function of the heart and the structure and function of the blood vessels, increasing the risk of atherosclerosis. In atherosclerosis a waxy substance called plaque builds up in the arteries and, over time, hardens and narrows arteries, limiting the flow of oxygen-rich blood to organs and other parts of the body.

- **Drug and alcohol abuse:** There is a direct connection between drug and alcohol abuse and adverse cardiovascular effects such as irregular heartbeat, collapsed veins, coronary artery disease, and bacterial infections that destroy the valves of the heart. Cocaine and crack are powerful stimulants that act directly on the heart muscle, increasing heart rate and blood pressure, narrowing the arteries, and compromising blood flow.
- **Obesity and sedentary lifestyle:** Superfluous body tissue requires increased blood supply and makes the heart work harder, causing hypertension. Lack of exercise contributes to obesity, and obesity increases the risk of Type 2 diabetes that causes blood vessel damage and atherosclerosis. Intra-abdominal fat—a big belly—affects blood pressure and lipid levels thereby interfering with the body’s ability to use insulin effectively and process glucose which is the body’s primary fuel.
- **Poor diet:** A diet high in saturated and trans fats causes cholesterol to build up in arteries and increases risk for heart attack. Cholesterol is carried in the blood by two proteins: LDL—low-density or “lousy” lipoproteins—and HDL—high-density or “happy” lipoproteins. LDL deposits cholesterol in tissues, while HDL carries it to the liver where it can be metabolized. Elevated LDL and/or low HDL levels can contribute to cardiovascular disease, whereas a diet low in saturated fat and cholesterol can help to restore LDL and HDL to recommended levels.
- **Poor dental hygiene:** Without regular visits to a dentist or dental clinic, gums around the teeth become inflamed. When microbes from infected gum tissue enter the bloodstream, they trigger the formation of plaque that leads to atherosclerosis.
- **Stress:** Living a stressful life has the potential to cause people to adopt poor health-related habits like smoking, alcohol or drug abuse, and eating a poor diet—all risk factors for heart disease. Being stressed also can alter the way the body behaves and bring about changes to the blood and nervous system. Acute stress triggers reduced blood flow to the heart, promotes the heart to beat irregularly, and increases the likelihood of blood clotting—each factors that lead to heart disease.
- **Poverty:** Being poor increases the risk of heart disease, due to complex factors that may include residing in a congested, polluted, and even dangerous neighborhood, being deprived of quality education, lack of access to local providers of good healthcare, absence of grocery stores with healthy food alternatives, and inadequate sanitary conditions for daily life. Each of these insufficiencies due to poverty means a highly stressed environment from birth and throughout childhood, adolescence, and adulthood.

How Should the Cost of CVD be met?

Many of the risk factors described above involve personal choice rather than being created by unavoidable circumstances. Although living in poverty is not usually by choice, it may be altered through sacrifice, persistence, and a diligent work ethic. Individuals at high risk of CVD pay more than others for the medical costs of CVD and pay higher premiums for health and life insurance. Individuals who purchase alcohol and tobacco also contribute to increased medical costs by paying additional taxes on these products. However, an individual with CVD is likely to face significant costs not fully covered by health insurance, including doctor's visits, surgery, tests, medications, and hospital stays. When pre-existing conditions are not covered by health insurance, or when a person does not have insurance, the burden of the medical costs shifts to general taxation, and all taxpayers end up bearing the economic costs. Beyond dollar amounts, there is a further burden placed on friends and relatives to care for those who are sick with CVD. Currently almost all taxpayers pay for CVD to some extent. As a result, a significant question that we must ask and then enter into discussion about is, "How are we to think about CVD and its costs—economic, social, and ethical—in light of the fact that a significant amount of CVD is preventable through making important lifestyle choices and reducing risk factors?"

Is Legislation Needed?

There is on-going debate about how to meet the growing costs of CVD. One solution proposed is through additional legislation. Should there be additional taxes on food, alcohol, and tobacco that increase the risk of CVD? Should the emphasis be on increasing the use of preventive drugs? Or should legislation fund more local and educational programs highlighting risk factors and the consequences of lifestyle choices? Or should the focus be on the affected individual paying the costs of CVD? Should the government refrain from being involved in the individual choices that people make about what to eat and how to exercise, leaving these to individual freedom of choice? How would these options and this legislation help create more justice, or increase inequality?

Reflection Questions:

Please answer the following questions. You may need to do additional research to adequately respond to the science and theology section of each question.

1. Would you support charging higher insurance premiums or taxes to people who don't practice a healthy lifestyle?

Me: How will this affect me? If I just think about how this affects me, would I support it?

Community: How will this affect my community? We are called by God to not only think of ourselves, but also think of our neighbors. If I think about how this affects my community, would I support higher insurance premiums and taxes?

Science and Theology: What does science have to say about unhealthy lifestyles? What's the current understanding about the "biology" of unhealthy lifestyles? If I think about what science says about unhealthy lifestyles and what is biologically more healthy for people, would I support higher insurance premiums and taxes? What does Scripture say about how we should care for our bodies? What does Scripture say about how we should care for one another?

2. Should public funding be used for prevention programs if money could be saved in the future?

Me: How will this affect me? If I just think about how this affects me, would I support it?

Community: How will this affect my community? We are called by God to not only think of ourselves, but also think about our neighbors. If I think about how this affects my community, would I support public funding for prevention programs?

Science and theology: What does science say about prevention programs? What's the current understanding about the "biology" of prevention programs? If I think about what science says about prevention programs and if it works for people, would I support them? What does Scripture say about changing human behavior? How does this influence my thoughts about prevention programs?

3. The public subsidizes health care in a way that disproportionately benefits the less healthy. Do you believe financial interest trumps personal freedom in this matter? Why or why not?

Me: How will this affect me? If I just think about how this affects me, would I support taxation that puts financial interest over personal freedom about lifestyle choice?

Community: How will this affect my community? We are called by God to not only think of ourselves, but also think about our neighbors. If I think about how this affects my community, would I support unhealthy lifestyle taxes?

Science and Theology: What does science say about unhealthy lifestyle "taxes"? Do they work? If I think about what science says about lifestyle "taxes," would I support them? What does Scripture say about personal freedom? What does Scripture say about how we make spending decisions? How should this influence our thoughts on subsidized health care?