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WHITE PAPER: Women and Cardiovascular Disease

Helen, 68, is an active, happy woman. As a wife, mother of three, and grandmother of five, Helen keeps busy with her family and her volunteer work. Helen has been seeing the same family doctor for more than 20 years. One day, Helen visited her doctor to discuss the heart palpitations she was experiencing and her fear of heart disease. Helen's mother had died of a heart attack at age 75. Helen's doctor dismissed her fears and attributed her symptoms to nerves about an upcoming move into a retirement community. He prescribed an anti-anxiety medication and sent her home.

Four days later, Helen went to the emergency room and told the nurse she thought she was having a heart attack. "I'm having chest pains. I'm having trouble breathing. I think it could be a heart attack." After a triage examination, the nurse sent her back to a busy waiting room. Two hours later, Helen was seen by a doctor and given an EKG that confirmed a heart attack. Luckily, Helen survived and began seeing a doctor specializing in women's health. Unfortunately, millions of women are not so lucky.

Cardiovascular Disease as a Gender Issue

Cardiovascular disease (CVD) has an enormous impact. It affects more than 30 million people by causing more than 17 million deaths¹ and an additional 20 million stroke and heart attack victims each year.² The disease is found everywhere in the world, with an increasing shift toward low and middle-income countries where 82 percent of CVD deaths now occur. By 2030, according to the World Health Organization, almost 23.6 million people will die from CVDs, mainly from heart disease and stroke. These are projected to remain the single leading causes of death worldwide.³ CVD is a disease that devastates the individual, the family and the economy of a country.

Increasingly, CVD is becoming a women's issue. Cardiovascular disease is the number one cause of death for women worldwide, causing 8.6 million (or one-third) of all deaths in women annually.⁴ In the United States, heart disease and stroke cause nearly twice as many deaths for woman than those caused by all cancers combined, including breast cancer. And, heart disease has a higher mortality rate for women than men, 11 percent versus 8.4 percent.⁵

¹ World Health Organization. *The Atlas of Heart Disease and Stroke*. 2004.
<www.who.int/cardiovascular_diseases/resources/atlas/en/index.html>.

² World Health Organization. *Cardiovascular Disease: Prevention and Control*. 2006.
<www.who.int/dietphysicalactivity/publications/facts/cvd/en>.

³ World Health Organization. <http://www.who.int/mediacentre/factsheets/fs317/en/index.html>. 2010.

⁴ Women's Heart Foundation, *Women and Heart Disease Fact Sheet*. 2006.
<www.womensheartfoundation.org/PDFs/FactSheet_WHD.pdf>.

⁵Ibid.

CVD is a disease that affects women all over the world. However, the disease continues to be categorized as a “man’s disease” and is under-detected and overlooked in women—which results in women less likely to be hospitalized, to be referred to a heart specialist or to be properly treated.⁶ The disease has no geographical boundaries and its effects impact women across the globe:

- In the United States, women who have heart attacks are twice as likely to die as men in the first two weeks of recovery.⁷ 42 percent of women who have heart attacks die within 1 year, compared to 24 percent of men.⁸
- In the United States, more women than men have died of CVD since 1984, yet only 13 percent of women believe heart disease and stroke are their most serious health risks.⁹
- Young women still feel more threatened by cancer than they do by CVD.¹⁰
- In Canada, a woman’s risk of dying within the first 30 days is 16 percent higher after a heart attack and 11 percent higher after a stroke than for a man.¹¹
- In most developing countries, CVD causes four times as many deaths in mothers than HIV/AIDS and childbirth-related deaths combined.¹²
- A 2007 study done by the American Heart Association found that countries in Latin American have remarkably higher proportions of abdominal obesity, high blood cholesterol and hypertension than the other 46 countries studied in other regions and that there is a significant need for lifestyle and behavioral modification if the CVD risk is to be reduced.¹³
- In developing countries, half of all deaths of women over 50 are due to heart disease and stroke.¹⁴
- In Brazil, the proportion of CVD deaths in women between 35 and 44 years is 75 percent higher than in US women.¹⁵
- Ischemic (reduced blood supply) heart disease is projected to increase by 120 percent in women in developing countries between 1990 and 2020 compared to age-related increases of 30 percent in the industrialized world.¹⁶

⁶ World Health Organization, *Women: A Special Case?* 2004.

<www.who.int/cardiovascular_diseases/en/cvd_atlas_12_women.pdf>.

⁷ Women’s Heart Foundation, *Women and Heart Disease Fact Sheet*. 2006.

<http://www.womensheart.org/PDFs/FactSheet_WHD.pdf>.

⁸ Ibid.

⁹ American Heart Association. *Facts about Women and Cardiovascular Diseases*. 2006.

<www.americanheart.org/presenter.jhtml?identifier=2876>.

¹⁰ Romero DR, Mc Mahan S, Cathorall M. *Cardiovascular Disease (CVD) Risk: Should We Target College Women?* Californian Journal of Health Promotion. 2005; 3 (1):117-129.

<<http://www.worldheart.org/press/facts-figures/go-red-for-women/>>.

¹¹ Macaluso and Charlie Fidelman. *Heart, Stroke Greater Danger for Women*. Canada.com. February 2, 2007. <www.canada.com>.

¹² World Heart Federation. *A Race against Time: Key Messages*. April 26, 2004. Page 1.

¹³ World Heart Federation. *Latin America and Heart Disease*.

<<http://www.worldheart.org/publications/heart-beat-e-newsletter/heart-beat-aprilmay-2007/in-this-issue/latin-america-and-heart-disease/>>

¹⁴ World Heart Federation. *Fact-Sheet*, 2002.

¹⁵ Mosca L, Mochari H, Christian A, et al. National study of women’s awareness, preventive action, and barriers to cardiovascular health. *Circulation*. 2006;113(4):525-34.

<<http://www.worldheart.org/press/facts-figures/go-red-for-women/>>.

¹⁶ Disease Control Priorities in Developing Countries. Thomas Gaziano, K. Srinath Reddy, Fred Paccaud, Sue Horton, and Vivek Chaturvedi. 2006.

<<http://www.ncbi.nlm.nih.gov/bookshelf/br.fcgi?book=dcp2&part=A4715>>.

ProCor. *Commentary: Women and cardiovascular disease—A global perspective*. Barbara Roberts, MD, 2004. <http://www.procor.org/advocacy/advocacy_show.htm?doc_id=700207>.

One of the reasons that heart disease is deadlier for women is that heart disease has long been thought of as a man's disease. Doctors and women have both been at fault for underestimating the risks of heart disease in women. A study conducted in 2004 in the United States found that less than 20 percent of doctors are aware that CVD now kills more women than men.¹⁷ Finally, heart disease presents itself differently in women than men and often needs different types of treatment. Despite increased involvement, women remain underrepresented in trials of strategies to prevent heart disease. In 1970, only 18 percent of participants were women, increasing to 34 percent in 2006.¹⁸ Studies conducted on men neglect the heart disease issues particular to women. In order for women to receive the care and treatment they need and deserve, both the medical community and women need to be better educated.

Defining Cardiovascular Disease

Cardiovascular disease (CVD) is the term used to encompass several heart and blood vessel disorders that affect the human body. The term includes:

- *Coronary heart disease* or heart attacks occur when deposits of plaque, made of cholesterol and lipids, accumulate on the inner lining of the arterial walls, blocking blood supply to the heart.¹⁹
- *Cerebrovascular disease* or stroke occurs when a blood vessel leading to the brain either hemorrhages or becomes blocked, preventing the needed supply of oxygen to the brain.²⁰
- *Hypertension* is a condition where persistent high blood pressure occurs with a reading of 140/90 mm/Hg (measured in millimeters of mercury) or greater.²¹
- *Rheumatic heart disease* occurs when several attacks of rheumatic fever damage the valves of the heart.²²
- *Heart failure* occurs when the heart is unable to pump enough blood to the tissues throughout the body, causing shortness of breath, edema, distension of the ventricles and an enlarged liver.²³
- *Diastolic heart failure* occurs when the heart is pumping properly but fails to fill adequately with blood.²⁴

In addition to risk from the most common forms of CVD, there are types found mostly in women:

- *Stress cardiomyopathy* or broken heart syndrome occurs after an episode of sudden emotional trauma such as armed robbery or news of a death. The symptoms of this syndrome are similar to those of a heart attack such as severe chest pain and shortness of breath.²⁵
- *Microvascular disease* occurs when the muscles in the arteries thicken causing the walls to close in. This disease restricts the blood flow to the heart causing ischemia, which increases a woman's risk of heart failure and heart attacks. Women are less likely to be diagnosed with this disease because they often show clear arteries after experiencing chest pain or after having an abnormal stress test. In many of these women, their hearts are starved for oxygen, but tests continue to

¹⁷ Rabin, Roni. *MDs Told to do More for Women's Heart Health*. Newsday.com. February 2, 2005.

<www.newsday.com/news/health/ny-hshart0202,0,2747779.story?coll%3Dny-homepage-big-pix>.

¹⁸ Melloni CM, Berger JS et al. Representation of women in randomized clinical trials of cardiovascular disease prevention. *Circ Cardiovasc Qual Outcomes*. 2010;3:135-142

¹⁹ Dictionary.com. *Coronary Heart Disease*.

<<http://dictionary.reference.com/browse/coronary%20heart%20disease>>.

²⁰ Dictionary.com. *Stroke*. <<http://dictionary.reference.com/browse/stroke>>.

²¹ Dictionary.com. *Hypertension*. <<http://dictionary.reference.com/browse/hypertension>>.

²² Dictionary.com. *Rheumatic Heart Disease*.

<<http://dictionary.reference.com/browse/rheumatic%20heart%20disease>>.

²³ Dictionary.com. *Heart Failure*. <<http://dictionary.reference.com/browse/heart%20failure>>.

²⁴ American Heart Association. *New Heart Failure Guidelines Stress Early Diagnosis and Treatment*. August 16, 2005. <www.americanheart.org>.

²⁵ Johns Hopkins Medicine. *Frequently Asked Questions about Broken Heart Syndrome*. <www.hopkinsmedicine.org/asc/faqs.html>.

show clear coronary arteries because the symptoms may be due to narrowing or hardening of vessels that are too small to show up on the test.²⁶

Preventing Cardiovascular Disease in Women

In recent decades, the dramatic increase in the prevalence of CVD in women is a direct result of negative changes in diet, a decrease in physical activity levels and an increase in tobacco use. Because of the severe impact CVD can have on a woman's health, prevention is preferred to treatment. Women should prevent and control high cholesterol by eating a diet low in saturated fat and cholesterol and high in fiber. For example, women can lower the risk of stroke and heart disease by adhering to a traditional Mediterranean diet, according to a study published in 2009 in *Circulation: Journal of the American Heart Association*. The diet is high in monounsaturated fat, plant proteins, whole grains and fish.²⁷ In addition, women should avoid smoking, as it increases the risk of high blood pressure, heart disease and stroke. Furthermore, women need to maintain a healthy weight and engage in regular physical activity.²⁸

A woman must contend with greater incidence than men of misdiagnosis, improper treatment and physical impairment from CVD.²⁹ Thus, it is important for a woman to realize and calculate her own risk factors associated with CVD, which then allows her to make the necessary lifestyle changes to lower her chance of developing CVD. The best way for women to prevent the disease is to know the risk, address modifiable risk factors and work with a doctor knowledgeable about CVD in women.

The following sections of this paper provide information about modifiable and non-modifiable risk factors, questions women should ask their doctors in order to assess their risks, and information about diagnosing and treating CVD in women.

Risk Factors Associated with Cardiovascular Disease

Risk factors are the various elements associated with the onset of CVD. More than 300 risk factors can be linked to CVD. Seventy-five percent of all CVDs are caused by risk factors, several of which can be prevented, treated or controlled.³⁰

Non-Modifiable Risk Factors:

These factors are unchangeable:

- Heredity/family history – There is an increased risk for CVD if an immediate family member has had CVD before the age of 55 (male) or 65 (female).³¹

²⁶ National Institute of Health. *WISE Study of Women and Heart Disease Yields Important Findings on Frequently Undiagnosed Coronary Syndrome*. January 31, 2006. <www.nih.gov/news/pr/jan2006/nhlbi-31.htm>.

²⁷ Medical News Today. *Risk of Stroke, Heart Disease in Women Lowered by Mediterranean Diet*. <www.medicalnewstoday.com/articles/139349.php>.

²⁸ Centers for Disease Control and Prevention. *Heart Disease Prevention: What you can do*. October 21, 2008. <www.cdc.gov/heartdisease/prevention.htm>.

²⁹ World Health Organization, *Women: A Special Case?* 2004. <www.who.int/cardiovascular_diseases/en/cvd_atlas_12_women.pdf>.

³⁰ World Health Organization, *Risk Factors*. 2004. <www.who.int/cardiovascular_diseases/en/cvd_atlas_03_risk_factors.pdf>. This website includes further information on modifiable, non-modifiable and "novel" risk factors associated with cardiovascular disease for men and women, as well as comparison charts between developed and developing countries.

³¹ Ibid.

- Gender – There is a greater prevalence of stroke in females than males, although males are more susceptible to coronary heart disease. Increasing evidence points to significant risk factor differences between the genders.
- Race – In the United States, there is an increased level of stroke in several ethnic groups such as the Hispanic, Japanese, Chinese and Black populations.
- Age – Advancing age is the greatest risk factor for CVD. In women CVD usually presents itself at around 65 years of age, 10 years later than men.³²

Modifiable Risk Factors:

Because the following risk factors are controllable, preventable or treatable, women should focus on addressing these factors to avoid CVD:

- Blood pressure below 120/80 mmHg (measured in millimeters of mercury) can lower the risk of CVD.³³ Women with hypertension (high blood pressure) have a risk of developing CVD that is 3.55 times higher than that of women with normal blood pressure.³⁴
- Tobacco use increases the risk of CVD for women. Female smokers are at risk for a heart attack 19 years earlier than non-smokers. Secondhand smoke raises coronary disease by 30 percent. One year after quitting, the risk decreases by 50 percent and after 15 years of tobacco cessation, the risk is comparable to that of a nonsmoker.³⁵
- Physical inactivity increases the chance of a stroke and heart disease by 50 percent and is more prevalent in women and girls.³⁶
- Obesity increases the risk of CVD. There is a greater prevalence of obesity in women than men.³⁷
- Low vegetable and fruit intake accounts for 31 percent of coronary heart disease and 11 percent of stroke worldwide.³⁸
- Diabetes is a major risk factor for heart attack and stroke in women.³⁹
- Abnormal blood lipids; high total cholesterol, LDL-cholesterol and triglyceride levels; and low levels of HDL increase the risk of coronary heart disease and stroke.⁴⁰
- Consumption of trans fat doubles the risk of developing coronary artery disease in women by raising LDL (bad) cholesterol levels and lowering HDL (good) cholesterol levels. A 2009 study found that women who already have heart disease and consume the most trans fat have three times the risk of dying suddenly compared with women who eat the least trans fat.⁴¹
- Stress and anxiety at a high level are believed to increase the risk of CVD.⁴²

³² Ibid.

³³ Ibid.

³⁴ American Heart Association, *International Cardiovascular Disease Statistics*. <www.americanheart.org>. Page 4.

³⁵ Ibid. Page 6.

³⁶ World Heart Federation. *Women, Heart Disease and Stroke Fact Sheet*. <www.worldheart.org/pdr_factsheets.php#women>.

³⁷ Ibid.

³⁸ World Health Organization Bulletin. Reported by the American Heart Association. *International Cardiovascular Statistics. 2007 Update*. <www.americanheart.org>.

³⁹ World Health Organization Bulletin. Reported by the American Heart Association. *International Cardiovascular Statistics. 2007 Update*. <www.americanheart.org>.

⁴⁰ World Health Organization. *Women: A Special Case? 2004*. <www.who.int/cardiovascular_diseases/en/cvd_atlas_12_women.pdf>.

⁴¹ Chiuve SE, Rimm EB, et al. Intake of total trans, trans-18:1, and trans-18:2 fatty acids and risk of sudden cardiac death in women. *Am Heart J*. 2009; 158:761. <<http://www.hearthealthywomen.org/?view=article&id=699>>.

⁴² Nolan, Robert P. *Women, Stress and Cardiovascular Disease*. Medscape. <www.medscape.com/viewarticle/424905>.

- Low socioeconomic status increases the risk of CVD.⁴³
- Severe mental illness increases the risk death from CVD.⁴⁴
- Marital stress causes a more severe prognosis in women with CVD.⁴⁵
- A 2008 research study found that vitamin D deficiency increases the risk of heart disease, showing that those with low vitamin D levels were twice as likely to have a heart attack, stroke or other heart-related event, compared with those with higher vitamin D levels.⁴⁶

Risk Factors Primarily Affecting Women:

- Oral contraceptives when combined with smoking 15 cigarettes a day increases the risk of coronary heart disease three to five fold, and smoking more than 15 cigarettes increases the risk 20 fold.⁴⁷
- Hormone replacement therapy may increase the risk of CVD by 22 percent.⁴⁸
- Polycystic ovary syndrome (POS) increases a woman's risk for diabetes, high cholesterol, high blood pressure and heart disease.⁴⁹ Women with POS do not release an egg every month. POS affects a woman's menstrual cycle, insulin production, heart, blood vessels and appearance.
- CVD risk for women is particularly high after menopause.⁵⁰
- Minimization of CVD risks and symptoms causes women to delay seeking treatment.⁵¹

Questions Women Should Ask and Numbers Women Should Know

CVD is a condition best prevented before it becomes a serious health threat. To understand the risk of CVD, women should schedule a doctor's appointment and ask for a blood test to measure cholesterol and glucose levels as well as a blood pressure test. It is important to talk to a doctor at length about CVD to find out more about the risks and to ascertain the doctor's knowledge about CVD and women. The American Heart Association has a sample chart available at http://www.goredforwomen.org/know_your_numbers.aspx. Here are a few questions to ask a doctor:

What is my total cholesterol level? What are my HDL and LDL levels? What is my triglyceride level?

- Cholesterol is found in the bloodstream and in the body. It is a soft, waxy fat-like substance the body is unable to dissolve. It is carried through the body by two types of lipoproteins (LDL/low-density lipoprotein or HDL/high-density lipoprotein).⁵²

⁴³ MacKay, Judith and George A. Mensah. *Atlas of Heart Disease and Stroke*. 2004. World Health Organization. <www.who.int/cardiovascular_disease/>.

⁴⁴ Psychiatry Source. *Severely Mental Ill at Risk of CVD*. February 12, 2007. <www.psychiatrysource.com>.

⁴⁵ World Heart Federation. *Women Heart Disease and Stroke Fact Sheet*. <www.worldheart.org/pdr_factsheets.php#women>.

⁴⁶ WebMD. *Too Little Vitamin D Puts Hearts at Risk*. <www.webmd.com/heart-disease/news/20081201/too-little-vitamin-d-puts-heart-at-risk>.

⁴⁷ Ibid.

⁴⁸ MayoClinic.com. *Hormone Replacement Therapy: Benefits and Alternatives*. <www.mayoclinic.com/health/hormone-therapy/WO00046>. The findings of this study are controversial and not accepted by the medical field as a whole.

⁴⁹ MayoClinic.com. *Polycystic Ovary Syndrome*. <www.mayoclinic.com/health/polycystic-ovary-syndrome/DS00423/DSECTION=6>. Polycystic ovary syndrome (PCOS) is a medical condition in which women do not ovulate. In addition, the ovaries of PCOS sufferers usually contain a large number of small cysts. The cause of PCOS is unknown and it affects 5% to 10% of women of reproductive age.

MedicineNet.com. *Definition of Polycystic Ovary Syndrome*. <<http://www.medterms.com/script/main/art.asp?articlekey=4981>>.

⁵⁰ World Health Organization. *Cardiovascular diseases*. <www.who.int/en/>.

⁵¹ Fogoros, Richard N., M.D. *Women and Heart Failure*. January 2006. About.com <heartdisease.about.com/od/livingwithheartfailure/a/women_HF.htm>.

- HDL is considered “good” cholesterol because it protects against heart attacks by carrying cholesterol away from arteries and into the liver. LDL is considered “bad” cholesterol because in excess it can clog arteries by building up and forming plaque in the arteries.⁵³
- Triglyceride is a form of fat. People with high triglycerides often have high cholesterol.⁵⁴
- The ideal range for total cholesterol is less than 200 mg/dl. The ideal range for HDL cholesterol is 50 mg/dl or higher. The ideal range for LDL cholesterol goals vary and are based on personal risk factors: people at low risk for heart disease—less than 160 mg/dl; people at intermediate risk for heart disease—less than 130 mg/dl; people at high risk for heart disease, including those who have heart disease or diabetes—less than 100 mg/dl. The ideal range for triglycerides is less than 150 mg/dl.⁵⁵

What is my blood pressure? What is my systolic number? What is my diastolic number?

- Blood pressure is the measure of the force (in millimeters of mercury) in the heart when it beats (systolic number or top number of blood pressure reading) and when it is at rest (diastolic number or the bottom number of blood pressure reading).⁵⁶
- The ideal range is less than 120/80 mmHg.⁵⁷

What is my fasting glucose level?

- Fasting glucose level or pre-diabetes is determined during a glucose test that determines the glucose (sugar) amount in the blood, measured in milligrams per deciliter (mg/dl) and is one of the major risk factors for type-two diabetes.⁵⁸
- The ideal range is less than 100 mg/dl.⁵⁹

What is my Body Mass Index (BMI)?

- BMI is an indirect measure of body composition that assesses body weight relative to height.
 - BMI less than 18.5 = underweight
 - BMI between 18.5 and 24.9 = healthy
 - BMI between 25.0 and 29.9 = overweight
 - BMI greater than 30.0 = obese⁶⁰

What are my risk factors for heart attack or stroke?

- Risks are based on individual health factors (see pages 5 and 6).

⁵² Medline Plus Medical Encyclopedia. *Cholesterol*. November 4, 2004.

<<http://www.nlm.nih.gov/medlineplus/ency/article/002472.htm>>.

⁵³ American Heart Association. *What's the Difference Between LDL and HDL Cholesterol?*

<<http://www.americanheart.org/presenter.jhtml?identifier=180>>.

⁵⁴ Ibid.

⁵⁵ American Heart Association: Go Red for Women. *Know Your Numbers*. 2006.

<www.goredforwomen.org/know_your_numbers/index.html>.

⁵⁶ Medline Plus Health Information from the National Library of Medicine. *Blood Pressure*. August 2004.

<www.nlm.nih.gov/medlineplus/ency/article/003398.htm>.

⁵⁷ American Heart Association: Go Red for Women. *Know Your Numbers*. 2006.

<www.goredforwomen.org/know_your_numbers/index.html>.

⁵⁸ Medline Plus Health Information from the National Library of Medicine. *Glucose Test*. February 2005.

<www.nlm.nih.gov/medlineplus/ency/article/003482.htm>.

⁵⁹ American Heart Association: Go Red for Women. *Know Your Numbers*. 2006.

<www.goredforwomen.org/know_your_numbers/index.html>.

⁶⁰ Center for Disease Control and Prevention. *BMI-Body Mass Index: About BMI for Adults*. May 2006.

<www.cdc.gov/nccdphp/dnpa/bmi/adult_BMI/about_adult_BMI.htm>. A body BMI table is available on the site.

How would I know if I am having a heart attack or stroke?

The most common symptoms for heart attack or coronary disease are chest pain/discomfort, lightheadedness, and shortness of breath. Symptoms for a stroke are usually numbness/weakness of face, arms or legs, sudden confusion or trouble speaking or understanding others, sudden trouble seeing and/or walking, and severe headaches with no known cause.

In addition to the most common symptoms, a woman may feel a variety of milder symptoms when experiencing CVD that are not usually found in men, including:

- Fasting glucose level or pre-diabetes is determined after a glucose test that verifies the glucose (sugar) amount in the blood, measured in milligrams per deciliter (mg/dl) and is one of the major risk factors for type-two diabetes.⁶¹
- The ideal range is less than 100 mg/dl.⁶²
- General flu-like symptoms
- Tenderness/ burning/pressing sensation in the jaw, back, shoulders or arms, often with no chest pain
- Indigestion, nausea or extreme fatigue—with no chest pain
- Insomnia
- Anxiety⁶³

What should I do if I think I'm having a heart attack or stroke?

- Have someone take you to the nearest emergency medical center.

What are the differences of CVD between men and women?

- Risk factors
- Greater prevalence of certain CVD disorders in women
- Milder and different symptoms in women
- Diagnosing and treating CVD
- Survival rates and prevalence of permanent disability among women

Diagnosing and Treating Women

Diagnosing heart disease is different for women than men. Unfortunately, most of the original studies on CVD were conducted on men, which allowed researchers to develop “typical” symptoms of CVD, such as chest pain, shortness of breath and lightheadedness—all of which are usually found in men. But, as discussed earlier, women experience an added set of symptoms such as indigestion, insomnia, fatigue, shortness of breath and anxious feelings.⁶⁴ These symptoms are not readily associated with heart disease. In fact new research in 2008 found that coronary heart disease symptoms in women are often attributed to stress or anxiety.⁶⁵ Symptoms such as shortness of breath and chest tightness are considered to be cardiac in men, but often viewed as psychological in women.⁶⁶ This often results in a delay in assessment of women with heart disease. Furthermore, because women typically develop heart disease later in life they may have other health conditions that have the same or similar symptoms as CVD, making an accurate diagnosis even more difficult.

⁶¹ Medline Plus Health Information from the National Library of Medicine. *Glucose Test*. February 2005. <www.nlm.nih.gov/medlineplus/ency/article/003482.htm>.

⁶² American Heart Association: Go Red for Women. *Know Your Numbers*. 2006. <www.goredforwomen.org/know_your_numbers/index.html>.

⁶³ Harvard Medical School. *Women and Heart Disease Symptoms*. May 2006. <www.intelihealth.com/IH/ihPrint/WSIHW000/8059/23513/376112.html>.

⁶⁴ Ibid.

⁶⁵ PsychCentral. *Women's Heart Disease Misdiagnosed as Anxiety*. October 13, 2008.

<www.psychcentral.com/news/2008/10/13/womens-heart-disease-misdiagnosed-as-anxiety/3118.html>.

⁶⁶ Ibid.

Doctors use a number of tests to diagnose CVD including a chest x-ray of the heart and blood vessels,⁶⁷ an echocardiogram,⁶⁸ a stress test,⁶⁹ holter monitoring,⁷⁰ or nuclear scans to reveal the supply of blood to the heart.⁷¹ However, some traditional tests, such as the stress test, that help to diagnose CVD and work well in men, are not as effective with women.⁷² There is now fairly convincing evidence that women tend to minimize their CVD symptoms, leading doctors to believe the women are not in serious danger. This of course increases the health threat to women.⁷³

For a multitude of reasons, heart disease in women is often overlooked or misdiagnosed. The consequence is that women do not receive needed treatment. In the United States, even though more women than men die of heart disease each year, women receive only 33 percent of all angioplasties, stents and bypass surgeries; 28 percent of implantable defibrillators; and 36 percent of open-heart surgeries.⁷⁴ In Canada, only 32 percent of women see heart specialists after a heart attack compared to 38 percent of men.⁷⁵ Furthermore, research has shown that women who call 911 with cardiac complaints are about 50 percent more likely than men to experience delays getting to the hospital.⁷⁶ Finally, the Women's Heart Foundation reports that after heart attacks, women are less likely to receive simple therapies to improve survival rates such as aspirin, beta blockers or ACE inhibitors. Even after adjusting for age, this lack of treatment contributes to high rates of complications for women.⁷⁷

Once a woman is diagnosed with CVD, she has a number of treatment options to discuss with her doctors. Treatment options may include medications, angioplasty, cardiac catheterization, coronary bypass graft surgery, defibrillator, pacemakers, or the insertion of a stent. Women should do research and work with their doctor to find the treatment that is best for them. (For more information on possible treatment options, see the [Jefferson Heart and Vascular Center's Glossary of Cardiac Terms](#).)⁷⁸ Even after a diagnosis of CVD has been made, adequate treatment is not always readily available for several reasons. For example:

- Because a woman's blood vessels are smaller, women might not be faring as well as men after receiving bypass and balloon surgery because the vessels clog easier and are harder to work with than blood vessels found in men. This size difference then causes many doctors to perform

⁶⁷ American Heart Association. *Chest X-Ray*.

<<http://www.americanheart.org/presenter.jhtml?identifier=3005143>>.

⁶⁸ MedicineNet.com. *Definition of Echocardiography*.

<<http://www.medterms.com/script/main/art.asp?articlekey=3182>>.

⁶⁹ Ibid.

⁷⁰ Ibid.

⁷¹ Ibid.

⁷² Harvard Medical School. *Women and Heart Disease Symptoms*, May 9, 2006.

<www.intelihealth.com/IH/ihtIH/WSIHW000/8059/23585/376112.html?d=dmContent>.

⁷³ Fogoros, Richard N., M.D. *Women and Heart Failure*. January 2006. About.com

<heartdisease.about.com/od/livingwithheartfailure/a/women_HF.htm>.

⁷⁴ National Coalition for Women with Heart Disease study reported in Cohen, Elizabeth. *Heart Disease Often Misdiagnosed in Women*. CNN.com. February 2, 2007. <www.cnn.com>.

⁷⁵ Macaluso and Charlie Fielman. *Heart, Stroke Greater Danger for Women*. Canada.com. February 2, 2007. <www.canada.com>.

⁷⁶ WebMD. *Gender Gap in Heart Health Extends to 911*. <www.webmd.com/heart-seasae/news/20090113/gender-gap-in-heart-care-extends-to-911>.

⁷⁷ Women's Heart Foundation. *Women and Heart Disease Fact Sheet*. 2006.

<www.womensheartfoundation.org/PDFs/FactSheet_WHD.pdf>.

⁷⁸ Jefferson's Heart and Vascular Center. *Glossary of Cardiac Care*. June 2004.

coronary bypass graft surgery in women from a leg vein rather than inside the chest wall, even though using a chest artery is more effective for a patient's long-term survival.⁷⁹

- Because women are frequently older than men when they experience heart disease, they are more likely to have other health problems that limit treatment options and make surgery riskier and recovery more difficult.⁸⁰

Conclusions

For years, heart disease has been a “man’s disease.” Studies were conducted on men and treatments were developed based on a man’s experience. Statistics now reveal that heart disease is a woman’s issue and women do not fit into the standardized diagnoses and treatments. CVD is not the same disease in women as it is in men. Now medical professionals are realizing that women have different risk factors; the disease presents itself differently in women; it is frequently diagnosed incorrectly in women; the treatment options are different; and that the risk of permanent disability, second occurrence of CVD and death from CVD are greater in women.

Yet, most women are unaware of how great a threat CVD is to their overall health because the issue is not receiving adequate attention from the medical profession or the general public. Therefore, it is critical that women take control of their health by knowing their risk factors and communicating these factors with their doctor.

How Soroptimist Works to Raise Awareness about Women’s Heart Health

Soroptimist is an international volunteer service organization for business and professional women who work to improve the lives of women and girls, in local communities and throughout the world. The Soroptimist organization provides a model program kit of sample projects for clubs to undertake in local communities to raise awareness about women’s heart health and to help women receive the screening tests they need. The model program kit includes educational and informational materials on CVD, a list of possible projects for clubs to perform, as well as directions on how to implement a successful project. The document is available on the Soroptimist website and can be accessed here: <http://www.soroptimist.org/members/program/ProgramDocs/ModelProgramKits/WomenandHeartHealth.pdf>.

A number of local Soroptimist clubs are already addressing the issue in their communities, including:

SI/Baker County, Oregon (Northwestern Region); <sibakercounty@soroptimist.net>

The club decided to focus on heart health in 2009. They contacted their local hospital, requesting information about CDV in women. With this information, the club made flyers explaining the risks and prevention of strokes and heart attacks in women. Club members also set up a booth at a local health fair with the help of three nurses from their local hospital. They handed out flyers, offered free blood pressure screenings, and answered questions. After the health fair, the club handed out more flyers at the hospital and at special events in their community.

SI/Calaveras County, California (Sierra Pacific Region); <sicalaverascounty@soroptimist.net>

In 2005, the club partnered with a local hospital to provide lipid blood profile screenings at the hospital and outlying clinics at a reduced cost. The club covered the costs associated with the screenings. Also, the club offered free blood testing for heart disease to the women in the community during April and May. During the two months, 291 women took part in the free blood screenings.

SI/Desert Tucson, Arizona (Golden West Region); <sideserttucson@soroptimist.net>

⁷⁹ Grady, Denise. *In Heart Disease, the Focus Shifts to Women*. *The New York Times*. April 18, 2006.

⁸⁰ Ibid.

Each month, club members create a program for girls in underserved communities in Tucson. In honor of National Heart Month and Valentine's Day, the club chose February 2009 to focus on heart health. In partnership with the American Heart Association (AHA), the club combined crafts with education. Club members taught girls how to make heart-shaped lapels with safety pins and beads, while teaching them about how a healthy heart works and the dangers of smoking. The AHA provided the club with stethoscopes. The girls partnered up, listened to their hearts, jumped in place, and then listened for the change in their heartbeats. This provided the girls with a hands-on experiment to understand healthy heart rates.

SI/Idyllwild, Inc., California (Golden West Region); <siidyllwild@soroptimist.net>

Club members invited a health professional to one of their meetings to discuss women and heart health. As a result, the club members decided to be more proactive about their own physical health. The club divided into two teams and designated how many points each physical activity would be worth. Each club member was given a chart to record her daily exercises, both individual and group, using the honor system. The two team captains maintained point totals and encouraged their team members to participate. The winning team will be rewarded by the losing team at the end of each club year. This ongoing challenge caused members to be more conscientious of their heart health and the importance of exercise.

SI/Long Beach, California (Camino Real Region); <silongbeach@soroptimist.net>

This club provided health screenings for blood pressure, cholesterol and glucose levels to women in the underserved communities of Long Beach. In April, approximately 150 Cambodian and Laotian women were screened for factors responsible for heart disease. The club offered counseling sessions on smoking cessation, dietary and exercise habits and screening for osteoporosis. The club also distributed "Heart Attack—Fight Back" flyers with information on how to prevent heart disease. Also, during the Cinco De Mayo and Children's Day celebrations in the spring, the same programs were offered to Long Beach's Hispanic-American communities. The club also educated the African-American community on the risk factors and prevention methods of CVD.

SI/Santa Barbara, California (Camino Real Region); <sisantabarbara@soroptimist.net>

In 2009, two club members were on the planning committee for the American Heart Association Santa Barbara Heart Walk. They elicited the rest of the club's support. While walking, each club member wore a Soroptimist shirt to raise awareness not only of heart disease in women, but of Soroptimist and its mission. In addition to offering their organizational and physical support for the cause, club members participated financially by donating \$650 to the American Heart Association.