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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: affecting 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 80 percent of CVD deaths now occur. By 2010, according to the World Health Organization, CVD will be the leading cause of death in developing countries.³ It 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 deaths 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

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

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 Ibid.

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

⁵ Ibid.

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
- 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.⁸
- In the United States, 75 percent of men survive a first heart attack, while only 62 percent of women survive.⁹
- Approximately 50 percent of all female deaths in developing countries are due to heart disease and stroke.¹⁰
- In most developing countries, CVD causes four times as many deaths in mothers as HIV/AIDS and childbirth-related deaths combined.¹¹
- In Europe, CVD is the leading cause of death, estimated to cause a total of 4 million deaths annually, 55 percent of which are women.¹²
- In the United States, women under age 50 are twice as likely as men to have a fatal heart attack.¹³
- In the United States, within six years of a heart attack 35 percent of women and 18 percent of men will experience another heart attack, and 46 percent of women and 22 percent of men will become disabled.¹⁴
- In 2003, in the United Kingdom, 25 percent of premature female deaths occurred due to CVD.¹⁵

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. Only 13 percent of women believe that heart disease and stroke are their most serious health risks.¹⁶ Furthermore, a study conducted recently 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, but only 24 percent of participants in all heart-related studies are women.¹⁸ Studies conducted on men

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.

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

⁸ Macaluso and Charlie Fidelman. *Heart, Stroke Greater Danger for Women*. Canada.com. February 2, 2007. <www.canada.com>.

⁹ Cohen, Elizabeth. *Heart Disease Often Misdiagnosed in Women*. CNN.com. February 2, 2007.

<www.cnn.com>.

¹⁰ Ibid.

¹¹ World Heart Federation. *A Race against Time: Key Messages*. April 26, 2004.

<<http://www.worldheart.org/pdf/call.to.action.cvd.workforces.race.against.time.pdf>>. Page 1.

¹² American Heart Association, *International Cardiovascular Disease Statistics*.

<www.americanheart.org>. Page 1.

¹³ Ibid.

¹⁴ Global Cardio Care Inc. *About Heart Disease*. June 2004. <www.globalcardiocareinc.com/disease.htm>.

¹⁵ American Heart Association. *International Cardiovascular Disease Statistics*.

<www.americanheart.org>. Page 1.

¹⁶ American Heart Association. *Facts about Women and Cardiovascular Diseases*. 2006.

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

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

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

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.

As a result of these disparity issues, a groundbreaking report on heart disease research on women, *The 10 Q Report: Advancing Women's Heart Health Through Improved Research, Diagnosis and Treatment*, was released in 2006.¹⁹ Sponsored by WomenHeart: The National Coalition for Women with Heart Disease and the Society for Women's Health Research in cooperation with Representatives Ginny Brown-Waite (R-Fla) and Hilda Solis (D-Calif), co-chairs of the Congressional Caucus for Women's Issues, the report identifies the top 10 unanswered questions related to the development, diagnosis and treatment of heart disease in women. Answering these questions through targeted research could cut the number of women who die prematurely of heart disease by 50 percent over the next decade.²⁰

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.²¹
- *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.²²
- *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.²³
- *Rheumatic heart disease* occurs when several attacks of rheumatic fever damage the valves of the heart.²⁴
- *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.²⁵
- *Diastolic heart failure* occurs when the heart is pumping properly but fails to fill adequately with blood.²⁶

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.²⁷
- 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

¹⁹ The National Coalition for Women with Heart Disease. *WomenHeart and the Society for Women's Health Research Unveil the 10 Q Report, A Groundbreaking Research Agenda to Fight Heart Disease in Women*. February 14, 2006.

<www.womenheart.org/10_Q_Report_06.asp>

²⁰ Ibid.

²¹ Dictionary.com. *Coronary Heart Disease*.

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

²² Dictionary.com. *Stroke*. <<http://dictionary.reference.com/browse/stroke>>.

²³ Dictionary.com. *Hypertension*. <<http://dictionary.reference.com/browse/hypertension>>.

²⁴ Dictionary.com. *Rheumatic Heart Disease*.

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

²⁵ Dictionary.com. *Heart Failure*. <<http://dictionary.reference.com/browse/heart%20failure>>.

²⁶ American Heart Association. *New Heart Failure Guidelines Stress Early Diagnosis and Treatment*. August 16, 2005. <www.americanheart.org>

²⁷ Johns Hopkins Medicine. *Frequently Asked Questions about Broken Heart Syndrome*.

<www.hopkinsmedicine.org/asc/faqs.html>.

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 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.²⁸

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. 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
- 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, 10years later than men.³²

Modifiable Risk Factors:

²⁸ 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>.

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.

³² Ibid.

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. Second hand 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
- Stress and anxiety at a high level are believed to increase the risk of CVD.⁴¹
- Low socioeconomic status increases the risk of CVD.⁴²
- Severe mental illness increases the risk death from CVD.⁴³
- Marital stress causes a more severe prognosis in women with CVD.⁴⁴

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.⁴⁵
- Hormone replacement therapy may increase the risk of CVD by 22 percent.⁴⁶

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 Ibid.

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

⁴¹ Nolan, Robert P. *Women, Stress and Cardiovascular Disease*. Medscape. <www.medscape.com/viewarticle/424905>.

⁴² MacKay, Judith and George A. Mensah. *Atlas of Heart Disease and Stroke*. 2004. World Health Organization. <www.who.int/cardiovascular_disease/>.

⁴³ Psychiatry Source. *Severely Mental Ill at Risk of CVD*. February 12, 2007. <www.psychiatrysource.com>.

⁴⁴ World Heart Federation. *Women Heart Disease and Stroke Fact Sheet*. <www.worldheart.org/pdr_factsheets.php#women>.

⁴⁵ Ibid.

⁴⁶ 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.

- Polycystic ovary syndrome (POS) increases a woman's risk for diabetes, high cholesterol, high blood pressure and heart disease.⁴⁷ Women with POS do not release an egg every month. POS affects a woman's menstrual cycle, insulin production, heart, blood vessels and appearance.
- Minimization of CVD risks and symptoms causes women to delay seeking treatment.⁴⁸

Questions 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 www.goredforwomen.org/know_your_numbers/index.html.> 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).⁴⁹
- 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.⁵⁰
- Triglyceride is a form of fat. People with high triglycerides often have high cholesterol.⁵¹
- 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.⁵²

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).⁵³
- The ideal range is less than 120/80 mmHg.⁵⁴

⁴⁷ 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>>.

⁴⁸ Fogoros, Richard N., M.D. *Women and Heart Failure*. January 2006. About.com http://heartdisease.about.com/od/livingwithheartfailure/a/women_HF.htm>.

⁴⁹ Medline Plus Medical Encyclopedia. *Cholesterol*. November 4, 2004. <http://www.nlm.nih.gov/medlineplus/ency/article/002472.htm>>.

⁵⁰ American Heart Association. *What's the Difference Between LDL and HDL Cholesterol?* <http://www.americanheart.org/presenter.jhtml?identifier=180> >.

⁵¹ Ibid.

⁵² American Heart Association: Go Red for Women. *Know Your Numbers*. 2006. www.goredforwomen.org/know_your_numbers/index.html>.

⁵³ Medline Plus Health Information from the National Library of Medicine. *Blood Pressure*. August 2004. www.nlm.nih.gov/medlineplus/ency/article/003398.htm>.

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.⁵⁵
- The ideal range is less than 100 mg/dl.⁵⁶

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 = obese⁵⁷

What are my risk factors for heart attack or stroke?

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

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 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
- 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
- anxiety⁶⁰

⁵⁴ American Heart Association: Go Red for Women. *Know Your Numbers*. 2006.

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

⁵⁵ Medline Plus Health Information from the National Library of Medicine. *Glucose Test*. February 2005. <www.nlm.nih.gov/medlineplus/ency/article/003482.htm>.

⁵⁶ American Heart Association: Go Red for Women. *Know Your Numbers*. 2006.

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

⁵⁷ 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.

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

<www.intelihealth.com/IH/ihtPrint/WSIHW000/8059/23513/376112.html>.

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

- Go 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
- 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.⁶¹ These symptoms are not readily associated 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.

A 2008 international study, published in the online journal, *Heart*, led by a team of researchers from the University of Michigan Cardiovascular Center, reported that women continue to differ from men on everything from symptoms to treatment in both heart attack and severe chest pain. The study based data from men and women in 14 countries who had heart attack or chest pain episodes between 1999 and 2006.⁶² One of the most striking findings was that women were twice as likely as men to have “normal” or “mild” results on an exam of their heart’s blood vessels, with no single blockage taking up more than 50 percent of any one blood vessel. This was despite the fact that other test results showed they were definitely having a heart attack.⁶³

In another first-of-its-kind study released in June 2008, research showed another predictor for risk of coronary heart disease in women through toenail nicotine levels. Researchers at the University of California, San Diego, School of Medicine, in collaboration with colleagues from Harvard University, showed that the higher the level of nicotine in the toenails, the higher the risk of coronary heart disease, no matter the number of cigarettes smoked or level of exposure to secondhand smoke.⁶⁴

In yet another study, migraine frequency was linked to women’s risk of CVD. The Women’s Health Study was presented in 2008 and showed that women who have weekly migraines are significantly more likely to have a stroke than those with fewer migraines or no migraines at all, but those with lower migraine frequency may face increased risk of heart attacks.⁶⁵

⁶¹ Ibid.

⁶² University of Michigan Health System. *Women and Heart Attack: Study Finds Failure to Recognize Symptoms, Failure to Treat Appropriately*. May 6, 2008. <www2.med.umich.edu/prmc/media/newsroom/allReleases.cfm?ID=217>

⁶³ Ibid.

⁶⁴ University of California, San Diego Health Sciences. *Women, Smoking and Heart Disease: Toenails Tell the Tale*. June 11, 2008. <<http://ucsdnews.ucsd.edu/newsrel/health/06-08WomenSmokingHeartDisease.asp>>

⁶⁵ American Academy of Neurology. *Migraine Frequency Linked with Women’s Risk of Cardiovascular Disease*. April 2008. <<http://www.aan.com/press/index.cfm?fuseaction=release.view&release=601>>

Doctors use a number of tests to diagnose CVD including a chest x-ray of the heart and blood vessels,⁶⁶ an echocardiogram,⁶⁷ a stress test,⁶⁸ holter monitoring,⁶⁹ or nuclear scans to reveal the supply of blood to the heart.⁷⁰ 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.⁷¹ 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.⁷²

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.⁷³ In Canada, only 32 percent of women see heart specialists after a heart attack compared to 38 percent of men.⁷⁴ 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.⁷⁵

Once a woman is diagnosed with CVD, women have a number of treatment options they can discuss with their 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 Center's Glossary of Cardiac Terms at: www.jeffersonhospital.org/rx_files/heart/glossary_cardiac6852.pdf.)⁷⁶ Even after a diagnosis of CVD has been made, adequate treatment is not always readily available for several reasons, including:

- 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 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.⁷⁷

⁶⁶American Heart Association. *Chest X-Ray*.

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

⁶⁷MedicineNet.com. *Definition of Echocardiography*.

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

⁶⁸ Ibid.

⁶⁹ Ibid.

⁷⁰ Ibid.

⁷¹ Harvard Medical School. *Women and Heart Disease Symptoms*, May 9, 2006.

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

⁷² Fogoros, Richard N., M.D. *Women and Heart Failure*. January 2006. About.com

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

⁷³ 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>.

⁷⁴ Macaluso and Charlie Fielman. *Heart, Stroke Greater Danger for Women*. Canada.com. February 2, 2007. <www.canada.com>.

⁷⁵ Women's Heart Foundation. *Women and Heart Disease Fact Sheet*. 2006.

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

⁷⁶ Jefferson's Heart Center. *Glossary of Cardiac Care*. June 2004.

<www.jeffersonhospital.org/rx_files/heart/glossary_cardiac6852.pdf>.

⁷⁷ Grady, Denise. *In Heart Disease, the Focus Shifts to Women*. *The New York Times*. April 18, 2006.

- 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 makes surgery riskier and recovery more difficult.⁷⁸

Because disparities continue in addressing women's heart health, a number of women's heart centers are opening to diagnose and treat women who slide under the radar screen. The Women's Heart Health Clinic at Stanford Hospital as part of the Stanford University Medical Center opened in 2007 and reaches out to women whose conditions are getting missed. The Mayo Clinic in Minnesota also has a Women's Heart Clinic addressing disparities in diagnosis and treatment of women's heart health.⁷⁹

In addition, there has been a push over the past decade to conduct more research on CVD in women, such as the National Institutes of Health-sponsored study called the Women's Ischemia Syndrome Evaluation (WISE), which found that although a woman's arteries appear clear on routine tests like an angiogram, it doesn't mean she has normal coronary arteries.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 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 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. A number of local Soroptimist clubs are already addressing the issue in their communities, including:

Soroptimist International of Albuquerque, New Mexico, organized a health fair at a local community center to address CVD and other health ailments affecting women. The fair consisted of various seminars and booths set up by organizations such as the American Heart Association and the Diabetes Association.

⁷⁸ Ibid.

⁷⁹ Stanford University Medical Center. *Clinic Addresses Women's Disparities in Women's Heart Health*. Spring 2008. <<http://communitymednews.stanford.edu/2008spring/womensheart.html>>

⁸⁰ Ibid.

Soroptimist International of Calaveras County, California, 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 for nearly 300 women.

In collaboration with the local hospital, Soroptimist International of Fidalgo Island, Washington, presented a three-hour forum on heart health for women. During the forum, local doctors and cardiac rehabilitation personnel educated the women on diet, exercise, stress reduction and prevention. At the end of the event, informational packets on heart health were provided to the participants.

Soroptimist International of Groveland, California, established a committee to educate women and girls in the rural community about heart health. The committee provided the community with heart healthy recipes and monthly news releases through the local newspaper, as well as a newsletter supporting heart healthy lifestyles. The club also set up an informational booth at the local fair and walked in a parade promoting heart health and women.

Soroptimist International of Long Beach, California, targets the underserved female populations of Long Beach. Recently, the club provided health screenings for blood pressure, cholesterol and glucose to approximately 150 Cambodian and Laotian women. The club offered counseling sessions on smoke cessation, dietary and exercise habits, as well as screening for osteoporosis. The club also distributed “Heart Attack—Fight Back” flyers with information on how to prevent heart disease.