Heart Disease In Women

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Disclosures

- None

Objectives

- Define heart disease
- Discuss the epidemiology of heart disease in women
- Discuss risk factors for developing heart disease
- Discuss methods for preventing heart disease

What is Heart Disease?

- Heart Attack
- Stroke
- Coronary artery disease- build up of cholesterol plaque in the heart arteries
- Peripheral artery disease- build up of cholesterol plaque in the blood vessels of the body
- Aneurysm

Heart Disease in Women Facts

- Heart disease remains the overall leading cause of death of women in the United States
  - #1 ages 85+
  - #2 ages 45-84 (Cancer #1)

- In 2017 heart disease accounted for 21.8% of all deaths in women
  - Cancer accounted for 20.8%

- Heart disease killed 299,578 women in the United states in 2017
  - 1 in 5 women

CDC.gov/heartdisease/women

National Vital Statistics Reports, Vol. 68, No. 6, June 24, 2019

Misconceptions

- **Myth: Heart disease is for men, and cancer is the real threat for women**
- **Fact:** Heart disease accounted for 24.2% of deaths in US men (347,879 deaths on 2017)
- **Fact:** Heart disease accounted for 21.8% of deaths in US women (299,578 deaths in 2017)
- **Fact:** In 2019 268,600 women in the US were diagnosed with breast cancer
  - 41,760 deaths
  - 7 times more women die from heart disease vs breast cancer annually

AHA: goredforwomen.org

Misconceptions

- **Myth: Heart disease is for old people**
- **Fact:** Among females age 20 and older between 2013 and 2016, 44.7% had some form of cardiovascular disease.
- **Fact:** For younger women, the combination of birth control pills and smoking boosts heart disease risks by 20 percent

AHA: goredforwomen.org

AHA: 2019 Heart Disease & Stroke Statistical Update Fact Sheet Females & Cardiovascular Diseases

Misconceptions

- **Myth: I don’t have any symptoms**
- **Fact:** Sixty-four percent of women who die suddenly of coronary heart disease had no previous symptoms
- Symptoms vary greatly between men and women
- It is taught that the telltale sign of a heart attack is extreme chest pain/pressure
- Women are more likely to experience shortness of breath, nausea/vomiting and back or jaw pain.
- Other symptoms include: dizziness, feeling lightheaded or fainting, pain in the lower chest or upper abdomen and extreme fatigue.

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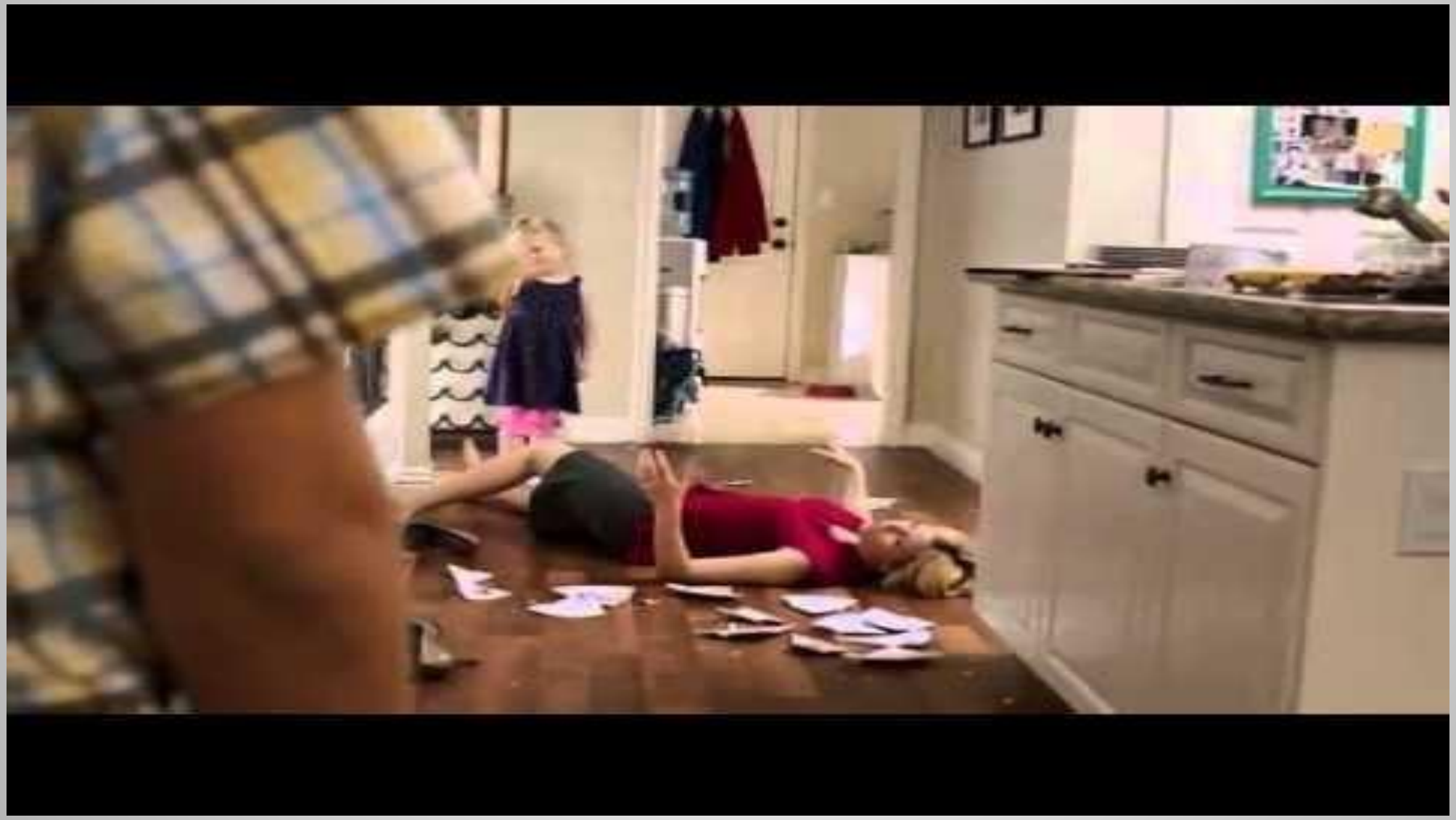
Women often seek medical treatment later than men



Risk Factors

- Family history of premature CHD (first-degree male relative under age 50 or a female under age 60)
- High Cholesterol
- Smoking
- High Blood pressure
- Diabetes
- Metabolic Syndrome
- Obesity
- Unhealthy eating habits
- Excessive alcohol consumption
- Inflammatory/rheumatic diseases
- Physical Inactivity

Risk Factors Unique to Women

- Early age of first period
  - 2014 meta-analysis in 150,000 women showed each one-year increase in age at menarche was associated with a 3 percent reduction in total mortality
- Early menopause
  - Hormone replacement is not protective (Women's Health Initiative and HERS trials)
- Hysterectomy +/- oophorectomy is not necessarily related with an increased risk of heart disease
- Premenstrual syndrome may be associated with an increased risk of developing hypertension
- Combined estrogen/progesterone contraceptives may be associated with an increased risk of heart attack and stroke
- Polycystic ovarian syndrome
- Complications during pregnancy
  - Hypertension
  - Diabetes
  - Studies have shown that women with a prior miscarriage have a higher risk of developing heart disease and have a increased risk of heart attack
  - Women with a history of preterm birth have a higher risk of heart disease

High Cholesterol

- Types of Cholesterol
  - Low density Lipoprotein (LDL)- “Bad” cholesterol. LDL cholesterol builds up in the walls of your arteries, making them narrow. This can lead to heart attacks and stroke
  - High density lipoprotein (HDL)- “Good” cholesterol. HDL picks up excess cholesterol from the blood and carries it back to the liver for breakdown
  - Triglycerides- most common form of fats in the blood.
    - High blood glucose levels lead to increases in triglyceride levels
    - Obesity, physical inactivity, diets high in carbohydrates, smoking, and excess alcohol consumption elevate triglyceride levels
  - High triglyceride levels combined with low HDL cholesterol or high LDL cholesterol speed up atherosclerosis

High Cholesterol

- Ways to lower cholesterol
  - Eating a diet low in saturated fats
  - Eating a diet low in trans-fats
  - Maintaining a health weight
  - Controlling diabetes: high blood sugars lead to higher levels of LDL, triglycerides, and lower levels of HDL
  - Quitting smoking
  - Exercising: exercise raises HDL
  - The female sex hormone estrogen tends to raise HDL cholesterol, and as a rule, women have higher HDL (good) cholesterol levels than men. Estrogen production is highest during the childbearing years.

Smoking

- Smoking leads to damage of the walls of blood vessels making them more prone to accumulate LDL
- Smoking increases the risk of heart disease and stroke by 2 to 4 times
- Women who smoke have a 25 percent higher risk of developing heart disease as compared to men who smoke
- By stopping smoking, your risk for heart disease and stroke can be cut in half just one year later and continues to decline until it’s as low as a nonsmoker’s risk.
- The combination of birth control pills and smoking increases the risk of heart disease by 20 percent.

Smoking

- Smoking contributes to the development of other cardiovascular risk factors
  - Hypertension
  - High cholesterol

High Blood Pressure

- The risk of high blood pressure increases with age
- After the age of 65 women are more likely to develop high blood pressure than men
- Risk factors for developing hypertension
  - Being over weight
  - Physical inactivity
  - Race: African Americans have a higher rate of high blood pressure
  - Smoking
  - Consuming too much salt
  - Alcohol: for women, having more than 1 drink a day can affect blood pressure
  - Family history
  - Stress
  - Diabetes

Current Blood Pressure Goals

BLOOD PRESSURE CATEGORY	SYSTOLIC mm Hg (upper number)		DIASTOLIC mm Hg (lower number)
NORMAL	LESS THAN 120	and	LESS THAN 80
ELEVATED	120 – 129	and	LESS THAN 80
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 1	130 – 139	or	80 – 89
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 2	140 OR HIGHER	or	90 OR HIGHER
HYPERTENSIVE CRISIS (consult your doctor immediately)	HIGHER THAN 180	and/or	HIGHER THAN 120

Hypertensive Disorders of Pregnancy

- Women with hypertension during pregnancy have:
  - 3.7-fold increase in the risk of chronic hypertension
  - 4.2-fold increase in the risk of heart failure
  - 81% increase in the risk of stroke
  - Double the risk of atrial arrhythmias

- Potential explanations: long-term vascular damage sustained during the preeclamptic episode, and preexisting abnormalities in arterial health predisposing women to hypertensive disorders of pregnancy.

- Women with HDP have significantly increased risk of CVD and mortality.

- Risk scores including obstetric history are necessary to better estimate a woman's cardiovascular risk and survival.

Obesity

- Body mass index (BMI): measure of body fat based on height and weight
- Obesity is defined as a body mass index of >30
- Over weight is defined as a body mass index of >25
- Obesity has been associated with diabetes, insulin resistance, hypertension, metabolic syndrome, and high cholesterol all of which are risk factors for heart disease
- Waist circumference is also a risk factor for development of heart disease
  - Waist circumference > 35 inches in women and 40 inches in men increases cardiovascular risk

Obesity

- Obesity is associated with inflammation
  - Increases in inflammation lead the development of atherosclerosis
  - Increases in inflammation can lead to plaque rupture in blood vessels (Heart Attack)
- Obesity increases the risk of developing:
  - Sleep apnea which can lead to the development of hypertension
  - Diabetes and elevated triglyceride levels
- Obesity increases the risk of developing atrial fibrillation

Diabetes

- Diabetes is considered a coronary artery disease risk equivalent
- Adults with diabetes are 2 to 4 times more likely to die from heart disease than adults without diabetes
- At least 68% of people age 65 or older with diabetes die from some form of heart disease
  - 16% die of stroke
- Individuals with diabetes often have other risk factors for development of heart disease
  - High blood pressure- there is a link between hypertension and insulin resistance
  - Elevated cholesterol levels: Diabetes leads to elevated triglyceride levels, high LDL levels, and low HDL levels
  - Obesity

Metabolic Syndrome

Constellation of:

- High blood pressure
- Low HLD levels
- High triglyceride levels
- High blood sugar levels
- Large waist circumference

- Metabolic syndrome increases the risk of heart disease
- Precursor to the development of diabetes

Exercise

- Heart-healthy benefits of exercising for just 30 minutes a day
  - Keeps your weight under control
  - Improves cholesterol levels- decreases LDL, increases HDL
  - Prevents and manages high blood pressure
  - Helps manage stress
  - Reduces risk of stroke by 20 percent in moderately active people

AHA:goredforwomen.org

AHA Exercise Recommendations

- Get at least 150 minutes per week of moderate-intensity aerobic activity or 75 minutes per week of vigorous aerobic activity, or a combination of both, preferably spread throughout the week.
- Add moderate-to-high intensity muscle strengthening activity (such as resistance or weights) on at least 2 days per week.
- Spend less time sitting. Even light-intensity activity can offset some of the risks of being sedentary.
- Gain even more benefits by being active at least 300 minutes (5 hours) per week.
- Increase amount and intensity gradually over time.

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Moderate Intensity Exercise

- Aerobic (or “cardio”) when done at moderate intensity, your heart will beat faster and you’ll breathe harder than normal, but you’ll still be able to talk. Think of it as a medium or moderate amount of effort.
- **Examples of moderate-intensity aerobic activities:**
  - brisk walking (at least 2.5 miles per hour)
  - water aerobics
  - dancing (ballroom or social)
  - gardening
  - tennis (doubles)
  - biking slower than 10 miles per hour

Vigorous Intensity Exercise

- Vigorous intensity activities will push your body a little further. They will require a higher amount of effort. You'll probably get warm and begin to sweat. You won't be able to talk much without getting out of breath.
- **Examples of vigorous-intensity aerobic activities:**
  - hiking uphill or with a heavy backpack
  - running
  - swimming laps
  - aerobic dancing
  - heavy yardwork like continuous digging or hoeing
  - tennis (singles)
  - cycling 10 miles per hour or faster
  - jumping rope

Target Heart Rate

- Your maximum heart rate is about 220 minus your age.
- Target heart rate during moderate intensity activities is about 50-70% of maximum heart rate, while during vigorous physical activity it's about 70-85% of maximum.

Age	Target HR Zone 50-85%	Average Maximum Heart Rate, 100%
20 years	100-170 beats per minute (bpm)	200 bpm
30 years	95-162 bpm	190 bpm
35 years	93-157 bpm	185 bpm
40 years	90-153 bpm	180 bpm
45 years	88-149 bpm	175 bpm
50 years	85-145 bpm	170 bpm
55 years	83-140 bpm	165 bpm
60 years	80-136 bpm	160 bpm
65 years	78-132 bpm	155 bpm
70 years	75-128 bpm	150 bpm

Dietary Goals

An adult consuming 2,000 calories daily should aim for:

- **Fruits and vegetables:** At least 4.5 cups a day
- **Fish (preferably oily fish, like salmon):** At least two 3.5-ounce servings a week
- **Fiber-rich whole grains:** At least three 1-ounce servings a day
- **Nuts, legumes and seeds:** At least 4 servings a week, opting for unsalted varieties whenever possible

Other dietary measures:

- **Sodium:** Less than 1,500 mg a day
- **Sugar-sweetened beverages:** Aim to consume no more than 450 calories a week
- **Processed meats:** No more than two servings a week
- **Saturated fat:** Should comprise no more than 7 percent of your total calorie intake

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Summary

- Heart disease remains the number one cause of death in US women
- Women have unique risk factors for developing heart disease
- The symptoms of a heart attack in women are different than men
- The keys to reducing heart disease:
  - Controlling high cholesterol
  - Controlling high blood pressure
  - Controlling diabetes
  - Weight management
  - Stopping smoking
  - Regular exercise
  - Eating a healthy diet