



A preventive Approach to Heart Diseases in Women.

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- The scope of the problem
- Symptoms
- Risk factors
- Prevention.

Overview



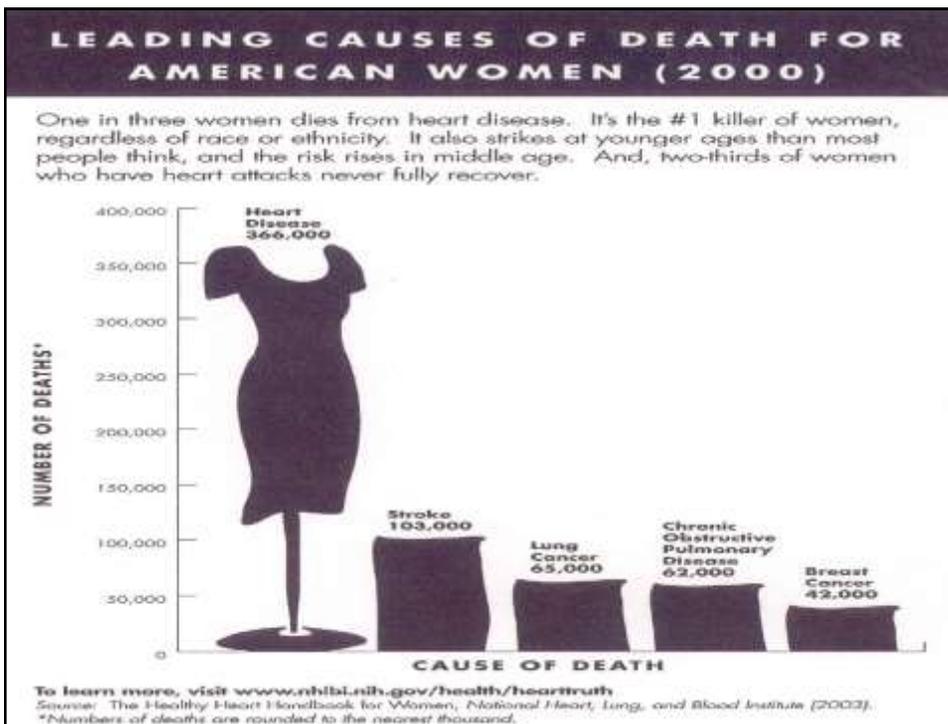
***One woman dies every minute
from cardiovascular disease in
the U.S.!***

The Scope of the Problem

- **Women are roughly 10 years older than men when they present, and have more co-morbidities**
 - **Young women also develop CAD and have a worse prognosis than men**
 - **Women are more likely to wait before presenting to medical attention.**
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- In the United States, 1 in 3 women dies from heart disease. In fact, coronary heart disease (CHD)—the most common type of heart disease—is the 1st killer of both men and women in the United States.

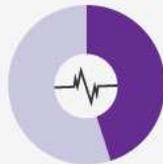
The Scope of the Problem



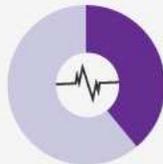
SKewed PRIORITIES

By AMERICAN HEART ASSOCIATION NEWS

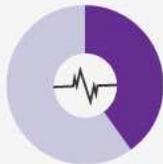
Cardiovascular disease, the leading killer of U.S. women, is not the top health concern for women and doctors, according to a nationwide survey.



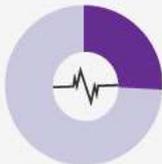
45% of women know cardiovascular disease is the No. 1 killer



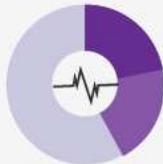
40% of routine care includes a heart risk check



39% of primary care doctors make cardiovascular disease a top priority



26% of women find cardiovascular disease embarrassing, assuming risk is solely linked to weight



22% of primary care doctors and **42%** of cardiologists feel well-prepared to assess cardiovascular disease risk

Source: *Journal of the American College of Cardiology*

Published June 22, 2017

- **Heart disease is the leading cause of death among women — and one of the most preventable**
- . Although heart disease is sometimes thought of as a “man’s disease,” around the same number of women and men die each year of heart disease in the United States.

AHA Special Report

Fifteen-Year Trends in Awareness of Heart Disease in Women Results of a 2012 American Heart Association National Survey

WRITING COMMITTEE

Lori Mosca, MD, MPH, PhD, Chair; Gmerice Hammond, MD; Heidi Mochari-Greenberger, PhD, MPH, RD; Amytis Towfighi, MD; Michelle A. Albert, MD, MPH; on behalf of the American Heart Association Cardiovascular Disease and Stroke in Women and Special Populations Committee of the Council on Clinical Cardiology, Council on Epidemiology and Prevention, Council on Cardiovascular Nursing, Council on High Blood Pressure Research, and Council on Nutrition, Physical Activity and Metabolism

Awareness is Lacking

- 2500 women > 25 y.o. surveyed
- Between 1997-2012, awareness among whole study population nearly doubled: 30% → 56%
- Still low in minorities:
 - Blacks: 36%
 - Hispanics: 34%

Awareness is lacking

Only 1 In 5 Women
Considers Heart Disease
Her Greatest Health Threat



- 34% of women are living with cardiovascular disease and much more are at risk.
- -1 of 30 die of breast cancer ,but one of 2.5 die of cardiovascular disease or stroke.
- -66,000 more women die of CVD than men represents 54% of women deaths per year compared by 46% for men.

**Cardiovascular diseases
in women.**

- Most of our ideas about heart disease in women used to come from studying it in men. But there are many reasons to think that it's different in women. A woman's symptoms are often different from a man's, and she's much more likely than a man to die within a year of having a heart attack.
- Research is only now beginning to uncover the biological, medical, and social bases of these and other differences. The hope is that new knowledge will lead to advances in tailoring prevention and treatment to women.

Sex differences evident



Women have smaller coronary arteries



FIGURE 3. Coronary thrombosis because of endothelial erosion. A large, round, dark thrombus adheres to the surface of an atherosclerotic plaque, which is obstructive to the artery.



FIGURE 4. Coronary thrombosis because of plaque disruption. A protruding thrombus penetrates into the lumen of the artery through a break in the fibrous cap of a plaque. Thrombus is also present within the lipid core.

Women suffer more plaque erosions (above) compared to plaque explosions in men (below), leading to more acute coronary syndromes (unstable angina) and in women, making diagnosis more difficult and leading to delays in treatment

Routine Screenings Should
Start In Your 20s



- **The goal of primary CVD prevention is to help women avoid developing heart diseases by promoting healthy habits. Changing behaviors such as salt intake and tobacco use and improving physical exercise and fitness are excellent steps toward CVD prevention.**
- **Secondary prevention includes the identification and treatment of women with established heart disease or those at very high risk and the rehabilitation of women who have already had a heart attack to prevent a second attack.**

prevention

**Recognizing Symptoms
Can Be Tricky**



- Because heart disease symptoms vary greatly between men and women, they're often misread. In dudes, the classic heart attack symptom is left-sided chest pain or pressure, sometimes radiating down the arm or into the jaw. Women, on the other hand, tend to have symptoms that are super subtle, such as fatigue, shortness of breath, indigestion, back pain, even jaw pain.

Top heart attack symptoms in women

One month before a heart attack	During a heart attack
Unusual fatigue (71%)	Shortness of breath (58%)
Sleep disturbance (48%)	Weakness (55%)
Shortness of breath (42%)	Unusual fatigue (43%)
Indigestion (39%)	Cold sweat (39%)
Anxiety (36%)	Dizziness (39%)
Heart racing (27%)	Nausea (36%)
Arms weak/heavy (25%)	Arms weak/heavy (35%)

Source: *Circulation* 2003, Vol. 108, p. 2621.

- Age over 55
- Dyslipidemia: high LDL and/or low HDL
- Family hx of premature CAD
 - First degree male < 55, female <65
- Diabetes
- Smoking
- Hypertension
- Peripheral arterial disease

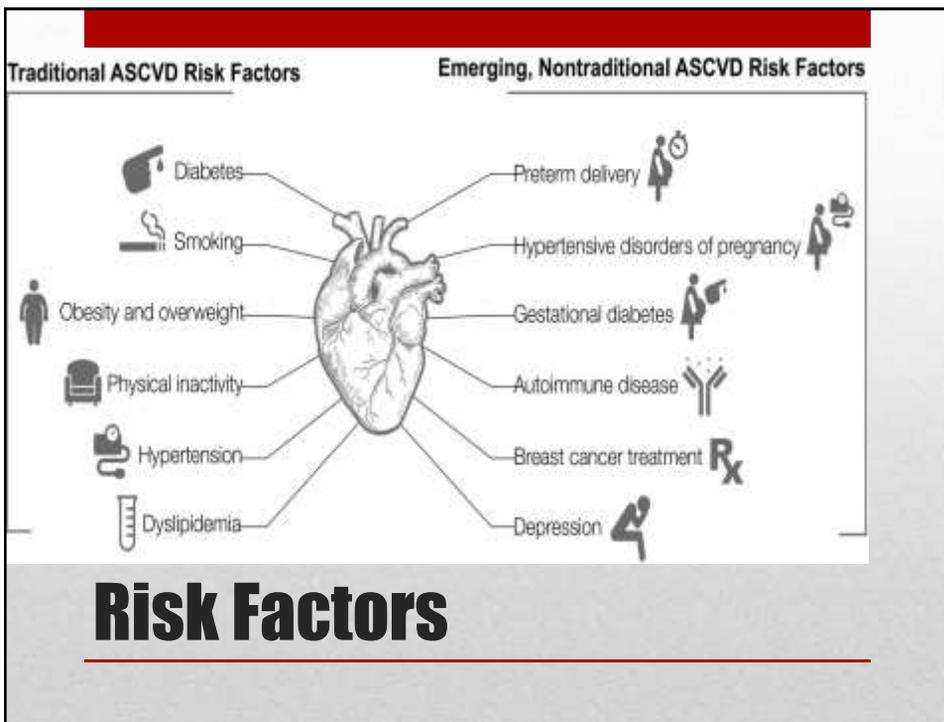
Risk Factors

Menopause
Obesity
High triglycerides
Metabolic syndrome
Sedentary lifestyle
Collagen vascular
disease/autoimmune disease

Risk Factors

- Pregnancy-related
 - Pre-eclampsia, eclampsia
 - Gestational diabetes
 - Stillbirth
 - Miscarriages, esp. multiple
- History of cancer treatments .Depression and stress
- History of trauma or abuse

Risk Factors



Risk Factors

- Low HDL is more predictive than high LDL
- Lp (a) can be more predictive in younger women
- TG can be more predictive in older women, especially if >400 mg/dL

Which risk factors are more predictive in women?

- Diabetes: almost double the risk of fatal CAD
- Smoking:
 - associated with 50% of all coronary events in women
 - Risk elevated even with minimal use

Which risk factors are more predictive in women?

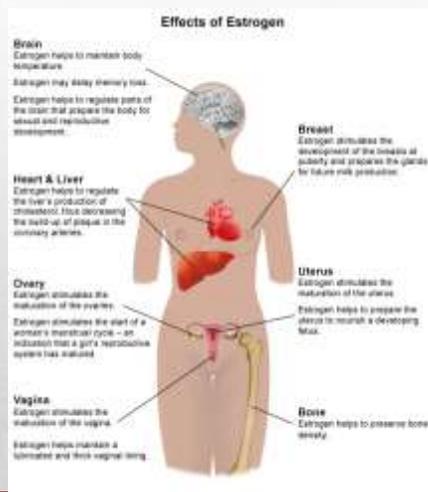
- **Pregnancy-related**
 - **contraceptives and hormonal treatment**
 - **Pre-eclampsia – 3.8x more likely to develop DM, 11.6x more likely to develop HTN**
 - **Gestational DM: up to 70% develop DM within 5 years**

- **Menopause**

Reproductive

Estrogen

- Critical to reproductive function in men & women
- Most produced by ovaries
- Some arises from fat, liver, breasts, adrenals
- Complex physiologic effects



The Good

- Relief of menopausal symptoms
- Reduction in osteoporosis (bone thinning) and fractures
- Cardio-protective effects??
- Improvement in lipid profile

The Bad

- Breast cancer risk
- Uterine cancer risk
- Complex formulation



The Good and Bad of Estrogen Replacement

16,608 Post-menopausal women aged 50-79 with an intact uterus

Estrogen + Progesterone

→

Placebo

→

Study stopped after mean follow-up of 5.6 years

Hormonal replacement associated with:

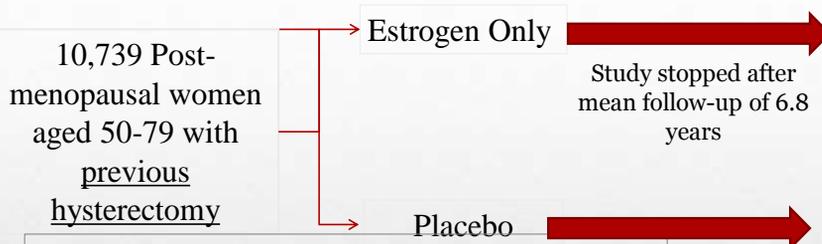
- Increased heart disease (29% ↑)
- Increased stroke (41% ↑)
- Increased blood clots
- Increased breast cancer (26% ↑)
- Reduced colon cancer
- Reduced hip fracture

Conclusion: HRT should not be used to prevent disease in healthy post-menopausal women

Women's Health Initiative

15

- Overall mortality was identical in the two groups
- Event rates in both groups was low and absolute rates in the estrogen + progesterone group was low - overall risk of treatment is low
- Estrogen vs. progesterone influence on outcomes is unknown



Estrogen replacement associated with:

- 9% reduction in heart disease
- 39% increase stroke
- 33% increase blood clots
- No change in cancer
- 39% reduction hip fracture

Women's Health Initiative: Estrogen Only Study

Age Group	Risk of Coronary Heart Disease	Risk of Stroke
50-59	37% reduction	11% reduction
60-69	6% reduction	62% increase
70-69	13% increase	21% increase
Overall	9% reduction	39% increase

Source: JAMA 2007;297:1477

Women's Health Initiative: Estrogen Only Study

Conclusion: In younger post-menopausal women post hysterectomy, estrogen alone may be beneficial



- Estrogen therapy is reasonable for the relief of perimenopausal symptoms if started early and tapered after a few years
- Estrogen administered transdermally may be less likely to increase risk of clots
- Estrogen should not be given to reduce CVD risk

Estrogen Replacement: The reality

- Increasing Age
- Gender
- Heredity
- Previous Cardiovascular Event
 - Heart Attack
 - Stroke
 - TIA
 - History of Pre-Eclampsia or Eclampsia

Uncontrollable Risk Factors

- Modifiable risk factors
 - Smoking
 - High blood cholesterol
 - High blood pressure
 - Physical inactivity
 - Obesity and overweight
 - Diabetes

Modifiable Risk Factors

- The Multiplier Effect
 - 1 risk factor doubles risk.
 - 2 risk factors quadruple risk.
 - 3 or more risk factors can increase risk more than tenfold
- **Just 4 things – eating right, being physically active, not smoking, and keeping a healthy weight can lower the risk of heart disease by as much as 82 percent.**

Risk Factors/Prevention



- Overweight children as young as four are exhibiting hypertension, diabetes and hyperlipidemia.
- Habits are generally created in childhood. Children learn both good and bad habits from their parents

Prevention Begins in Childhood

Heart Disease Is
Preventable **80 Percent** Of
The Time



- **The Physical Activity Guidelines for Americans recommend that adults get at least 150 minutes/week of moderate-intensity aerobic activity, such as walking, or 75 minutes/week of vigorous-intensity aerobic activity, such as jogging, or a combination of both. Muscle strength training activities are also recommended on ≥ 2 days per week.**

Physical Inactivity

- According to data from a 2011 National Health Interview Survey (NHIS) in adults, inactivity was higher among women than men (33.2% versus 29.9%, age-adjusted) and increased with age from 26.1% to 33.4%, 40.0%, and 52.4% among adults 18 to 44, 45 to 64, 65 to 74, and ≥ 75 years of age, respectively.

Physical Inactivity



Recommended screening tests

Recommended Screenings	How Often?
Blood pressure	Each regular healthcare visit or at least once every 2 years if blood pressure is less than 120/80 mm Hg
Cholesterol ("fasting lipoprotein profile" to measure total, HDL and LDL cholesterol)	Every 4-6 years for normal-risk people; more often if any there is elevated risk for heart disease and stroke
Weight / Body Mass Index (BMI)	During regular healthcare visit
Waist circumference	As needed to help evaluate cardiovascular risk if BMI is greater than or equal to 25 kg/m ² .
Blood glucose test	At least every 3 years*
Discuss smoking, physical activity, diet	Each regular healthcare visit

REGULAR CHECKUPS FOR YOUR STAFF



means

- Reduced** sickness/absences
- More** productive staff
- Increased** output/production
- Greater** profitability

9 Out Of 10 Women
Have At Least One
Risk Factor



Prevention goals to reduce heart disease risk in women

Risk factor	Goal
<i>Body measurements</i>	
Body mass index (BMI)	18.5–24.9
Waist (abdominal) circumference	<35 inches (89cm)
<i>Lipids, lipoproteins</i>	

Total cholesterol	<200 mg/dL
HDL	>50 mg/dL
LDL	<100 mg/dL
Triglycerides	<150 mg/dL
<i>Blood pressure</i>	<120/80 mm Hg



- **Awareness is lacking!**

**Working with the
community**



Go Red For Women





1. Exercise regularly
2. Early to bed and early to rise
3. Facilitate the natural body cycles
4. Watch your body weight
5. Organize your life well
6. Be humble to all
7. Spend true quality time with your family
8. Rediscover the hidden and lost “You”
9. Stay away from smoking and alcoholism
10. Learn how to handle stress effectively

10 steps to wellness :

Thanks