Battling Heart Disease in Women
The Heart of Women’s Health

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Topics

• Epidemiology
• Mechanism of disease
• Screening for disease: classic and newer risk factors and tests
• Guidelines for prevention of heart disease: the importance of lifestyle
• Diagnostic tests

The Numbers

• Heart disease is the most common cause of death in women in the US
  • 6 times breast cancer deaths
• About 398,000 cardiovascular deaths in women annually
  • One death per minute
  • 1 out of every 3 women will die of cardiovascular disease

The Numbers

• 44 MILLION women have diagnosis of heart disease
• Since 1984, more cardiovascular deaths in women than in men
• 64% of people with sudden cardiac death had no prior symptoms
• Younger women are affected too!
The Numbers

**Ethnic differences:**
Hispanic women develop CV disease on average 10 years earlier than Caucasian women

African American women have higher risk of HTN and therefore stroke

Heart Disease

- Problems with the arteries
- Problems with the valves
- Problems with the rhythm
- Problems with the heart muscle function (usually caused by one of the above)

Symptoms

- Chest pain: pressure, tightness, burning
- Shortness of breath
- Jaw, neck, arm, back pain
- Nausea/vomiting
- Sweating
- Fatigue, weakness, lightheadedness
- Trouble sleeping, uneasiness
Symptoms

Why do women tend to delay care?

• Misinterpret symptoms
• Minimize symptoms
• Minimize perception of risk
• Competing obligations
• Don’t want to impose
• Embarrassment about symptoms

Women ARE Different

• More women than men die of sudden cardiac death
• After a heart attack, female mortality is higher
• Pathophysiology seems to be different
• Suboptimal treatment of women despite guidelines

What is a Heart Attack?

http://vimeo.com/10063636

• Key role of inflammation
• Unstable plaque
• Triggering event
  • Spike in blood pressure
  • Fatty meal
  • Mental stress
  • Physical stress → STRESS HORMONES
Other Types of Heart Attacks

• Coronary artery spasm
• Spontaneous coronary artery dissection (SCAD)
• Stress induced cardiomyopathy

Are You at Risk?

● Screening = detection of disease before it causes an event
● Diagnosis = confirmation of disease

Goal: prevent events

Classic cardiac risk factors:

• High blood pressure (even if treated)
• High cholesterol
• Diabetes
• Smoking
• Family history of early heart disease
• Age > 55
• Overweight
• Lack of exercise and poor exercise tolerance
• Chronic kidney disease
Are You at Risk?

**Newer cardiac risk factors:**

- Add to classic risk factors
- Can further refine risk

**Newer Screening Tools**

- Coronary artery calcium scoring
- Advanced cholesterol testing
  - Lp(a), particle size/particle number
- Measures of inflammation (hs-CRP)
  - (hs-CRP naturally higher in women)
- Carotid artery thickness by ultrasound

**Ultrasound of the Carotid Artery**
Patient Characteristics and Conditions Associated with Increased or Decreased Levels of hsCRP

<table>
<thead>
<tr>
<th>Increased Levels</th>
<th>Decreased Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevated blood pressure</td>
<td>Moderate alcohol consumption</td>
</tr>
<tr>
<td>Elevated body mass index</td>
<td>Increased activity/endurance exercise</td>
</tr>
<tr>
<td>Cigarette smoking</td>
<td>Weight loss</td>
</tr>
<tr>
<td>Metabolic syndrome/diabetes</td>
<td>Medications</td>
</tr>
<tr>
<td>Low HDL/high triglycerides</td>
<td>Statins</td>
</tr>
<tr>
<td>Estrogen/progestogen hormone use</td>
<td>Fibrates</td>
</tr>
<tr>
<td>Chronic infections (gingivitis, bronchitis)</td>
<td>Statins</td>
</tr>
<tr>
<td>Chronic inflammation (rheumatoid arthritis)</td>
<td>Niacin</td>
</tr>
</tbody>
</table>

hsCRP = high-sensitivity C-reactive protein; HDL = high-density lipoprotein cholesterol

Other Links to Heart Disease

- Obstructive Sleep Apnea
- Polycystic Ovarian Disease
- Autoimmune
- Other vascular disorders: Raynaud’s, migraine
- Gout

Other Links to Heart Disease

- History of pregnancy complications
  High BP, pre-eclampsia, gestastional diabetes

- Chemotherapy

- Radiation therapy
Who Should be Screened?

• Every woman should know her numbers!
• All women should be asked about classic risk factors
• “In the middle” women could consider additional screening
• We ALL need to focus on primary prevention

Primary prevention

• Modifying risk before something happens

Know those numbers

• Blood pressure 120/80
• LDL cholesterol <100
• HDL cholesterol > 50
• Triglycerides < 150
• Non HDL cholesterol <130
• BMI 18.5-24.9 (kg/m2)
• Waist < 35 inches
• Diabetes: hemoglobin A1C <7%

Our bodies are meant to exercise

• Check with your doctor . . .
• Then go for it! At least 30 minutes of moderate activity MOST days of the week
• Some is better than none
• More is better than less
• Chemical changes in the body with exercise are very positive
**Duke Treadmill Score Predicts Survival**

![Graph showing survival distribution function estimates for low, moderate, and high risk groups over 5 years.]

**What Motivates You?**

- Health/longevity
- Keeping up with family and friends
- Social connection
- There is no “right way”

**What about Hormones?**

- Naturally occurring hormones are protective
- Menopause: metabolic changes including decreased HDL
- Women’s Health Initiative (2002)
What about Hormones?

- Concerns: increased risk heart attack, stroke, blood clots, breast cancer
- For symptoms only (ages 50-59)
- Lowest dose possible
- Shortest time possible (<5 years)
- Do not use if cardiac event
- Patch preparations and plant-derived compounds may carry less risk

What Should I Eat?

Diet Evidence: Benefits of Fruits and Vegetables

Nurses’ Health Study and Health Professional’s Follow-up Study

Increased fruit and vegetable intake reduces CV risk

Focus on ENHANCEMENT (not deprivation)

Create good patterns

800 gram challenge!

Read food labels

- Avoid TRANS-fats
  - “partially hydrogenated” is bad
- Avoid/limit SATURATED fats
  - Animal fats: butter, red meat/processed meat, (whole fat dairy)
- Look for:
  - NO ADDED SUGAR
  - High fiber
  - Low sodium (<2 grams/day)

Omega 3 Fatty Acids—an important fish tale

- Eat “fatty” fish (5-6 oz per week)
  - Salmon, mackerel, herring, tuna, sardines
- Consider fish oil supplements (mercury free)
  - 500-4000 mg EPA and DHA
- ALA acids for vegetarians
  - Almonds, walnuts, canola oil, flaxseed, soybean oil
- Monounsaturated fats:
  - olive oil, nuts, avocados
Supplemental Information

- A varied diet rich in lean protein, good fats, and vegetables is the best defense
- Consider a multivitamin
- Vitamin D3
- Calcium: 700-1000 mg daily
- Vitamin E, high dose Vitamin C, beta carotene, and folate no clear benefit
  - Folate is important for women who are pregnant or may become pregnant

Visit your Dentist

Less Stress = Big Plus
Heart attacks are less frequent in the summer.

For some women . . .

- Statins and other cholesterol medications
- Blood pressure medicines
- Diabetes medicines
- Aspirin
  - High risk women: 75-325 mg daily
  - Low risk: weigh bleeding risk/ask your doctor
Tip the Scales in Your Favor

Diagnostic Tests

- Stress tests
- Cardiac catheterization (angiogram)
- Noninvasive angiogram

Noninvasive Coronary Angiogram
If you have heart disease

- Keep working on your risk factors!
  - Lifestyle change and medications
- Regular follow up with your doctor
- Cardiac rehabilitation programs -- great confidence builders

In Summary

- We can all be part of the solution, starting with taking care of ourselves
- Education and sharing knowledge
- Efforts to expand preventive care, access and research to include women, especially racial and ethnic minorities

Resources

- Your primary health care professional
- www.womensheart.org
- www.americanheart.org
- www.nhbli.nih.gov/health/hearttruth
- http://scadalliance.org
- #800gramchallenge
- Younger Next Year by Henry Lodge, MD and Chris Crowley
- Eat to Live by Joel Furhman, MD

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