

Heart Attacks

(Fast Track for the busy executive)

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SOMD

Savannah River

Objectives

- 1. Magnitude of the problem
- 2. Why apparently healthy people drop dead
(even when they just saw their doctor)
- 3. Vulnerable Plaque
- 4. Risk factors
- 5. What you can do to prevent this tragedy
from happening to you and others

America's Wars Total

U.S. Military Service During

War.....41,891,368

Battle

Deaths.....651,022

Other Deaths (In

Theater).....308,797

Other Deaths in Service (Non-

Theater).....230,279

Non-mortal

Woundings.....1,431,290

Living War

Veterans.....17,484,000

Living Veterans (War &

Peacetime).....23,532,000

Source: Department of Defense (DoD), except living veterans, which are VA estimates as of September 30, 2007.



Pipeline Industry and Fires and Explosions in All Industries - Injuries, Illnesses, and Fatalities Fact Sheet

The **Injuries, Illnesses, and Fatalities (IIF)** program provides data on illnesses and injuries on the job and data on worker fatalities.

- [Current Injury, Illness, and Fatality Data](#)
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CURRENT INJURY, ILLNESS, AND FATALITY DATA:

Select a subject area

- OSHA recordable case rates ([TXT](#)) ([PDF](#) 95K) - latest incidence rates, by industry, for nonfatal work-related injuries and illnesses.
- [Fatal injuries - 2006 data now available](#)
 - **NEW** [Industry incidence rates and counts](#)
 - **NEW** [Case and demographic characteristics](#)
- [Survey of Workplace Violence Prevention, 2005](#)

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ECONOMIC NEWS RELEASES AND SCHEDULE:

Current

- Census of Fatal Occupational Injuries ([HTML](#)) ([PDF](#) 118K)
- Nonfatal occupational injuries and illnesses from the Survey of Occupational Injuries and Illnesses
 - **NEW** [Industry counts and frequency rates \(HTML\)](#) ([PDF](#) 62K)

Latest Numbers

Nonfatal injuries and illnesses, private industry

Total recordable cases:

📈 4,085,400 in 2006

Cases involving days away from work:

📈 1,183,500 in 2006

Fatal work-related injuries

Total fatalities (all sectors):

📈 5,703(p) in 2006

Total fatalities (private industry):

📈 5,202(p) in 2006

Highway incidents (private industry):

📈 1,167(p) in 2006

Falls (private industry):

📈 771(p) in 2006

Homicides (private industry):

📈 441(p) in 2006

 » p- preliminary
 » Click on the 📈 icon for 10 years of historical data.

People Are Asking...

1. [What information does BLS have about injuries, illnesses, and fatalities in the pipeline industry and about injuries, illnesses, and fatalities due to fires and explosions in all industries?](#)
2. [What information does BLS have about coal mining injuries,](#)



[A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#) [N](#) [O](#) [P](#) [Q](#) [R](#) [S](#) [T](#) [U](#) [V](#) [W](#) [X](#) [Y](#) [Z](#)

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Deaths/Mortality

(Data are for U.S. for year indicated)

- Number of deaths: 2,397,615
- Death rate: 816.5 deaths per 100,000 population
- Life expectancy: 77.8 years
- Infant Mortality rate: 6.8 deaths per 1,000 live births

Number of deaths for leading causes of death:

- Heart disease: 652,486
- Cancer: 555,666
- Stroke (cerebrovascular diseases): 150,074
- Chronic lower respiratory diseases: 121,987
- Accidents (unintentional injuries): 112,012
- Diabetes: 73,138
- Alzheimer's disease: 65,965
- Influenza/Pneumonia: 59,664

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Cardiovascular Disease: Still #1

Epidemiology

- Leading cause of death
- >12,000,000 Americans have CAD
- - 1,000,000 heart attacks per year
 - >500,000 deaths/yr. in the U.S. from CAD
 - 50% die before reaching the hospital
 - >250,000 pts. with prehospital cardiac arrest
- John B. Tomarchio, M.D., M.P.H., M.B.A.

SCARE TACTIC

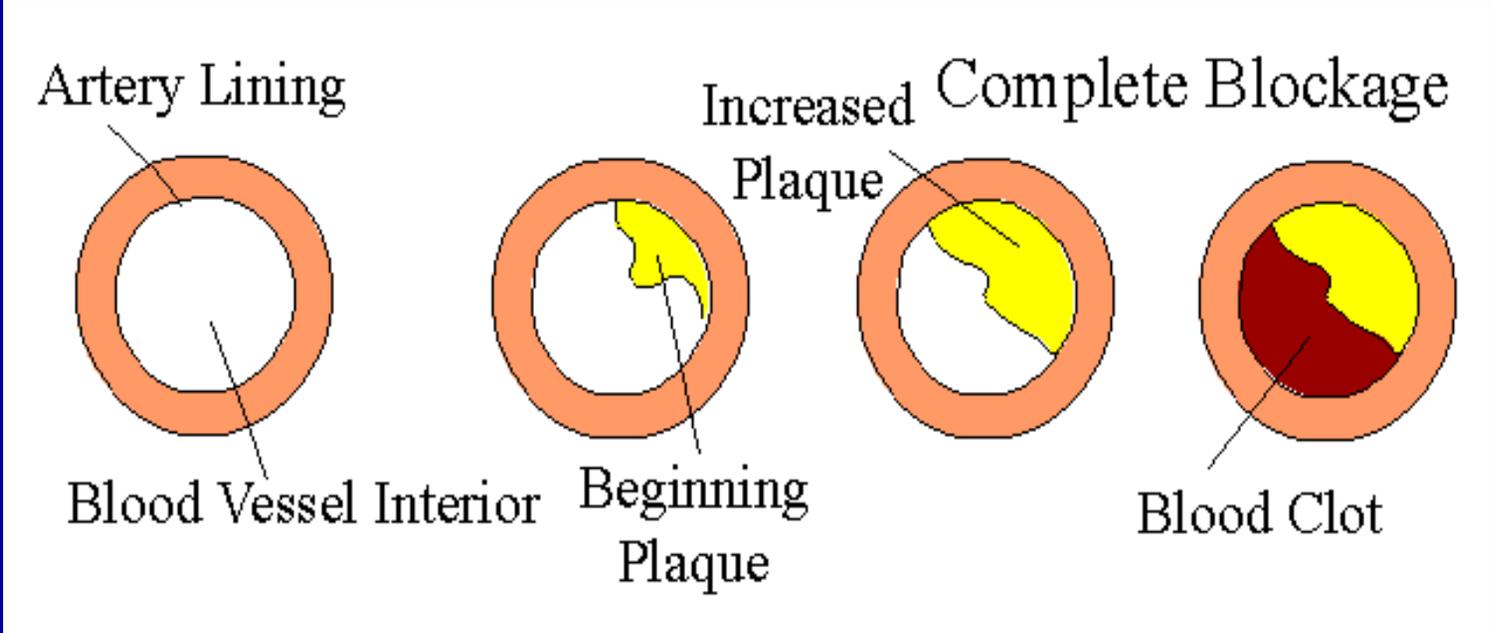
(But unfortunately true)

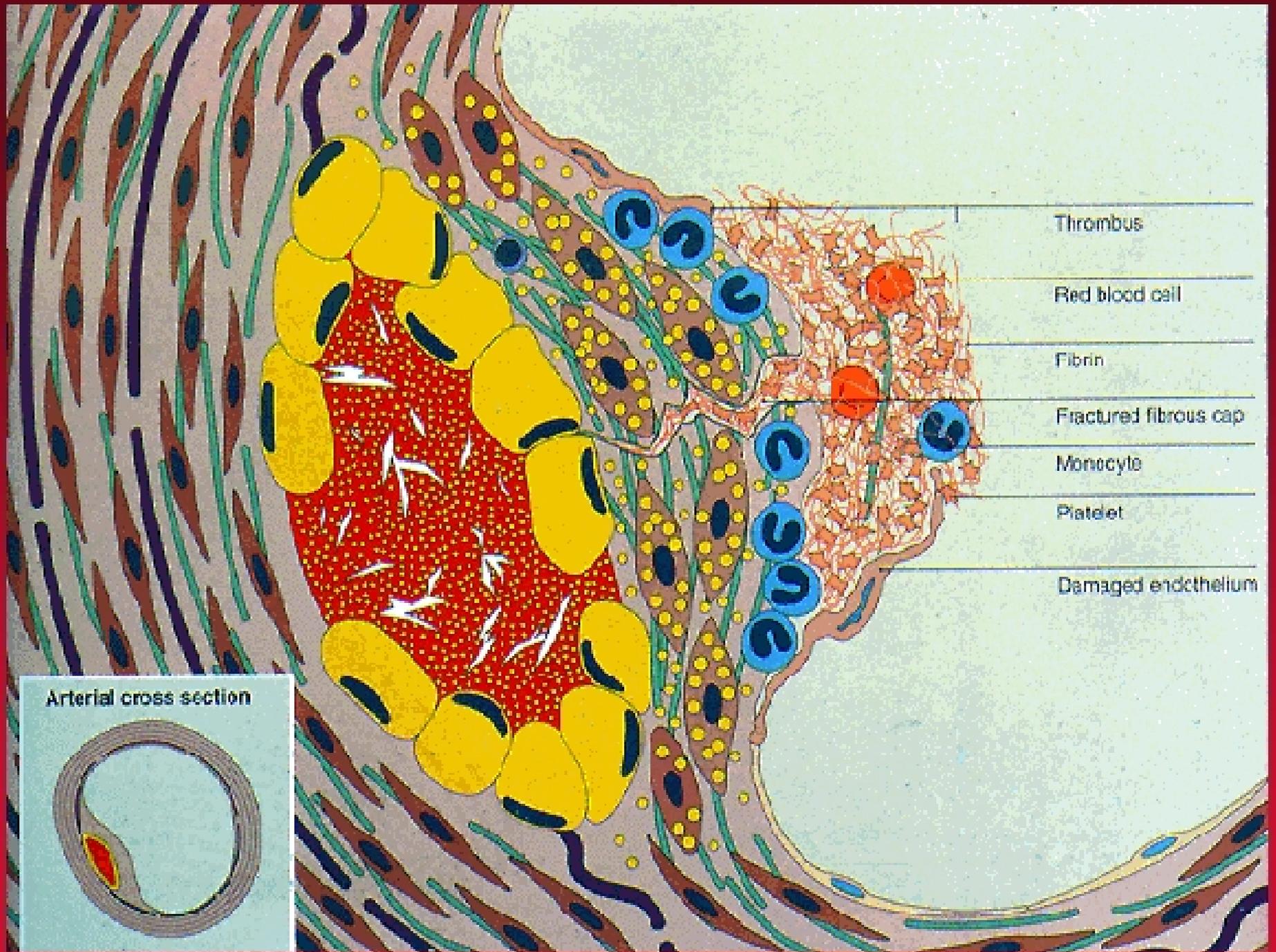
- **1/3** people in this room will die from heart disease:
 - Of those who die from heart disease:
 - 1/4 will die suddenly
 - 3/4 will suffer a 3-5 yr long suffocation type death from heart failure



Sudden Death

- For 1 in 4 people with known or unknown coronary artery disease the first symptom is sudden death





Thrombus

Red blood cell

Fibrin

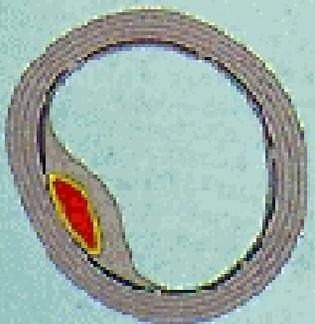
Fractured fibrous cap

Monocyte

Platelet

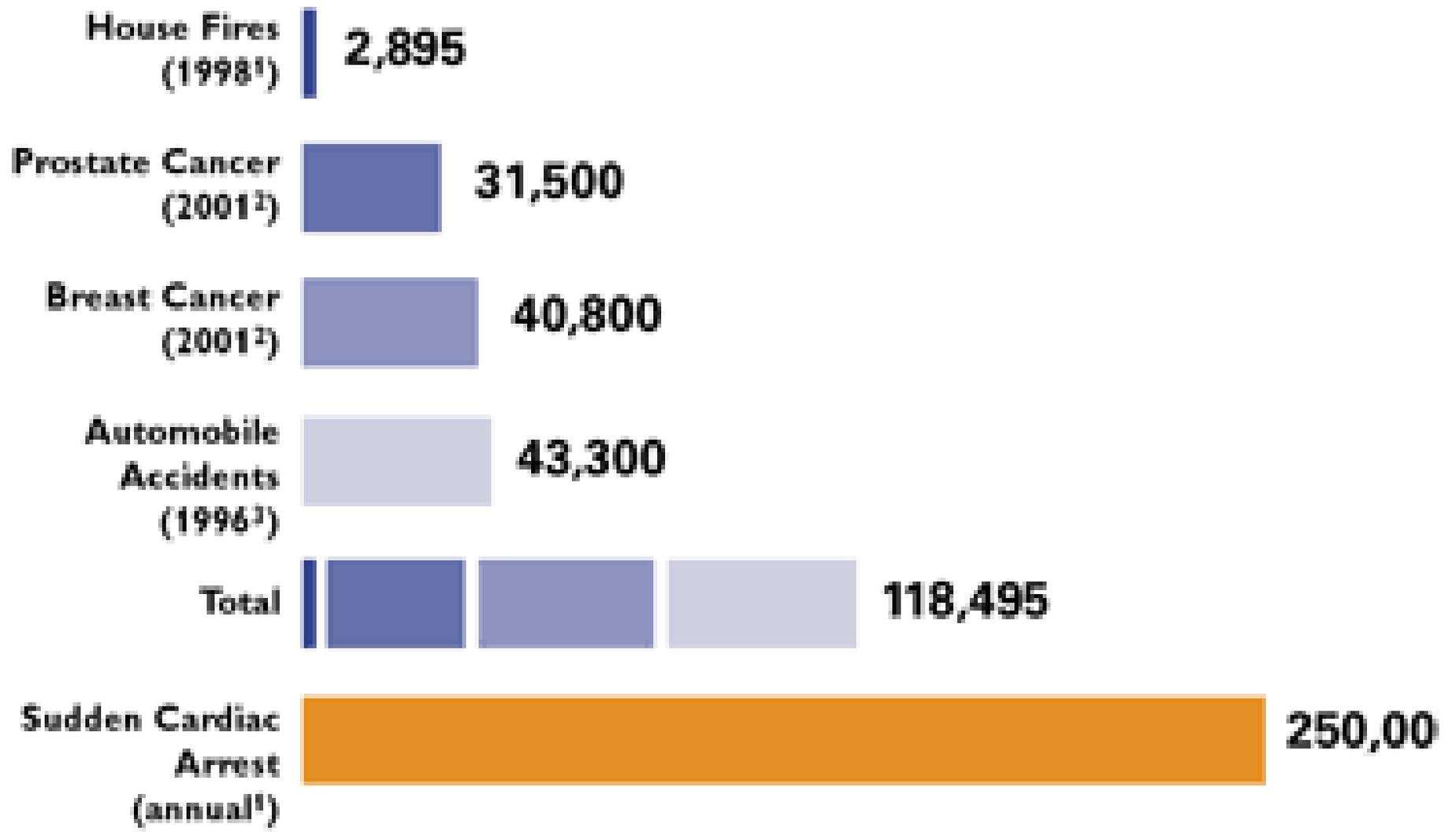
Damaged endothelium

Arterial cross section





COMMON CAUSES OF DEATH IN THE U.S.



Sources: 1. <http://www.americanheart.org>; 2. <http://www.cancer.org>; 3. U.S. Statistical Abstract of the United States, 1998, Table 138; 4. <http://www.americanheart.org>

Determine presence of major risk factors (other than LDL):

Major Risk Factors (Exclusive of LDL Cholesterol) That Modify LDL Goals

Cigarette smoking

Hypertension (BP \geq 140/90 mmHg or on antihypertensive medication)

Low HDL cholesterol ($<$ 40 mg/dL)*

Family history of premature CHD (CHD in male first degree relative $<$ 55 years;
CHD in female first degree relative $<$ 65 years)

Age (men \geq 45 years; women \geq 55 years)

** HDL cholesterol \geq 60 mg/dL counts as a "negative" risk factor; its presence removes one risk factor from the total count.*

Americans Have Become Complacent About Cardiovascular Disease, and Overestimate Their Cardiovascular Health

- 76% say they try to maintain healthy weight, but only 36% do
- 68% say they try to exercise regularly, but only 19% do
- 60% say they try to avoid high fat, high cholesterol foods, but only 10% follow national nutritional guidelines

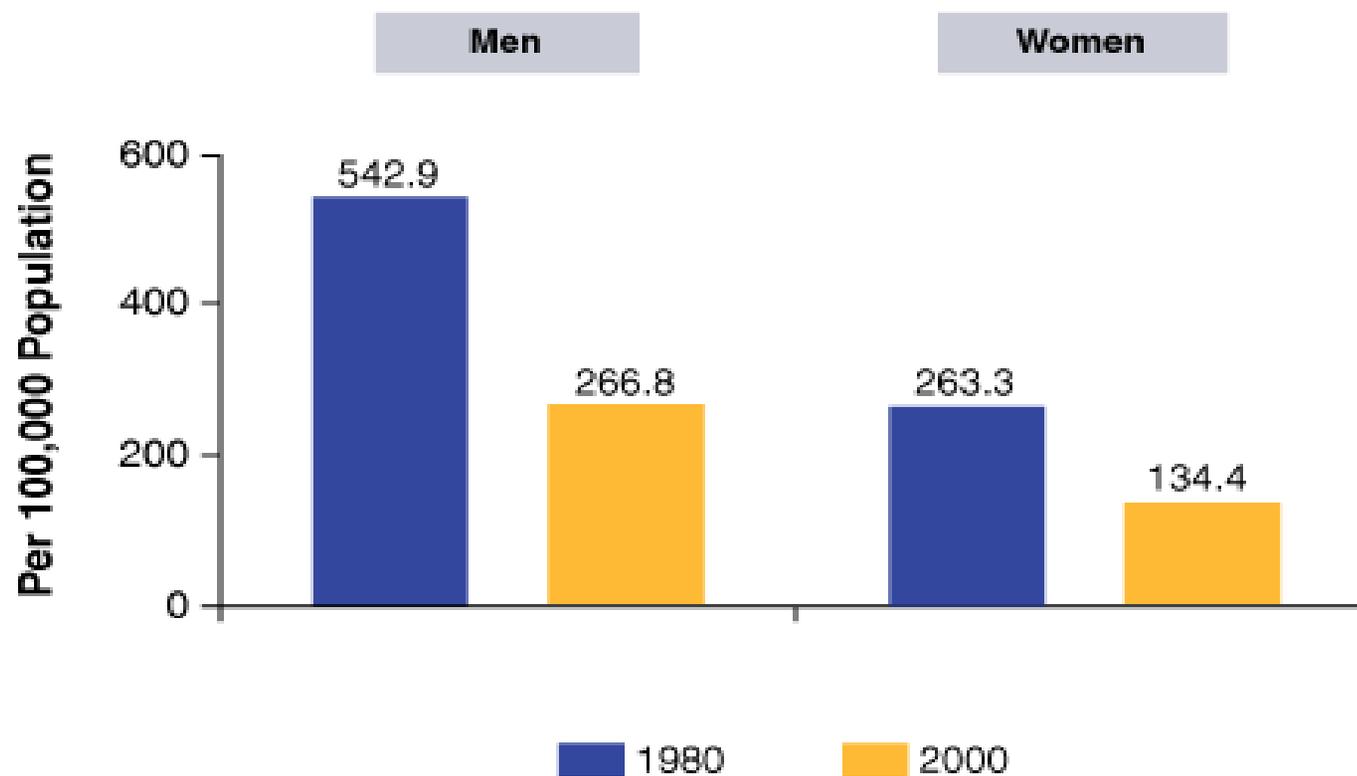
AND

- 57% do not believe they are at “much risk”
- 59% do not believe cardiovascular disease is a killer

Man's Will

- *“Heart disease before 80: It’s man’s fault, not God or Nature’s will.”*
– Paul Dudley White, MD

Age-Adjusted Death Rate for Coronary Heart Disease: 1980-2000



Factors Influencing U.S. Mortality from Coronary Disease: 1980-2000

Treatment-Related Effects		Risk Factor-Related Effects		Benefits Offset by Increases in	
2° preventive therapies after MI or revascularization	↓11%	Reduction in total cholesterol	↓24%	Body mass index	↑8%
Initial treatments for acute MI/UA	↓10%	Systolic blood pressure	↓20%	Prevalence of diabetes	↓10%
Treatment for heart failure	↓9%	Smoking prevalence	↓12%		
Revascularization for chronic angina	↓5%	Physical inactivity	↓5%		
Other therapies	↓12%				

MI = myocardial infarction; UA = unstable angina.

INTERHEART Study:

Nine Modifiable Risk Factors Account for More than 90% of the Risk of an Initial Acute Myocardial Infarction

- Smoking
- Hypertension
- Lipids (ApoB/A1 ratio)
- Abdominal obesity
- Diabetes
- Fruit and vegetable intake
- Alcohol
- Exercise
- Psychosocial

Take Home Points

- **Cardiovascular Disease: Still #1**
- **Most people aren't as healthy as they think**
- **Sudden death with no prior symptoms is possible**
- **No way to 100% diagnose who will die or have a heart attack**
- **Risk factor reduction is best approach for now**

MY ADVICE

- 1. Know and Manage Your Blood Pressure
- 2. Don't smoke
- 3. Eat healthier and watch your weight
- 4. Walk
- 5. Take your health seriously, your job seriously, safety seriously, but don't take yourself so seriously
- 6. Know and Manage your LDL and HDL

Other Tid Bits

- Floss your teeth regularly, get your teeth cleaned regularly
- Get a flu shot every year
- Love somebody and be loved
- Show mercy and tolerance to others
- Hold hands with the one you love while you walk
- Drink 2 drinks of alcohol a day if you can

Never ever give up!

