

# Cardiovascular Screening

*Tracking your blood pressure and blood sugar*

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**Conflicts of Interest\_none**



## Why is screening for cardiovascular disease in women important ?

- *Heart disease is the leading cause of death in all Americans regardless of race or gender*

\*AHA 2009 Heart and Stroke Statistical Update



## **The Reality\_**

***CVD is just as much of a health problem for women as it is for men.***

***About one in five women have some form of cardiovascular disease.***

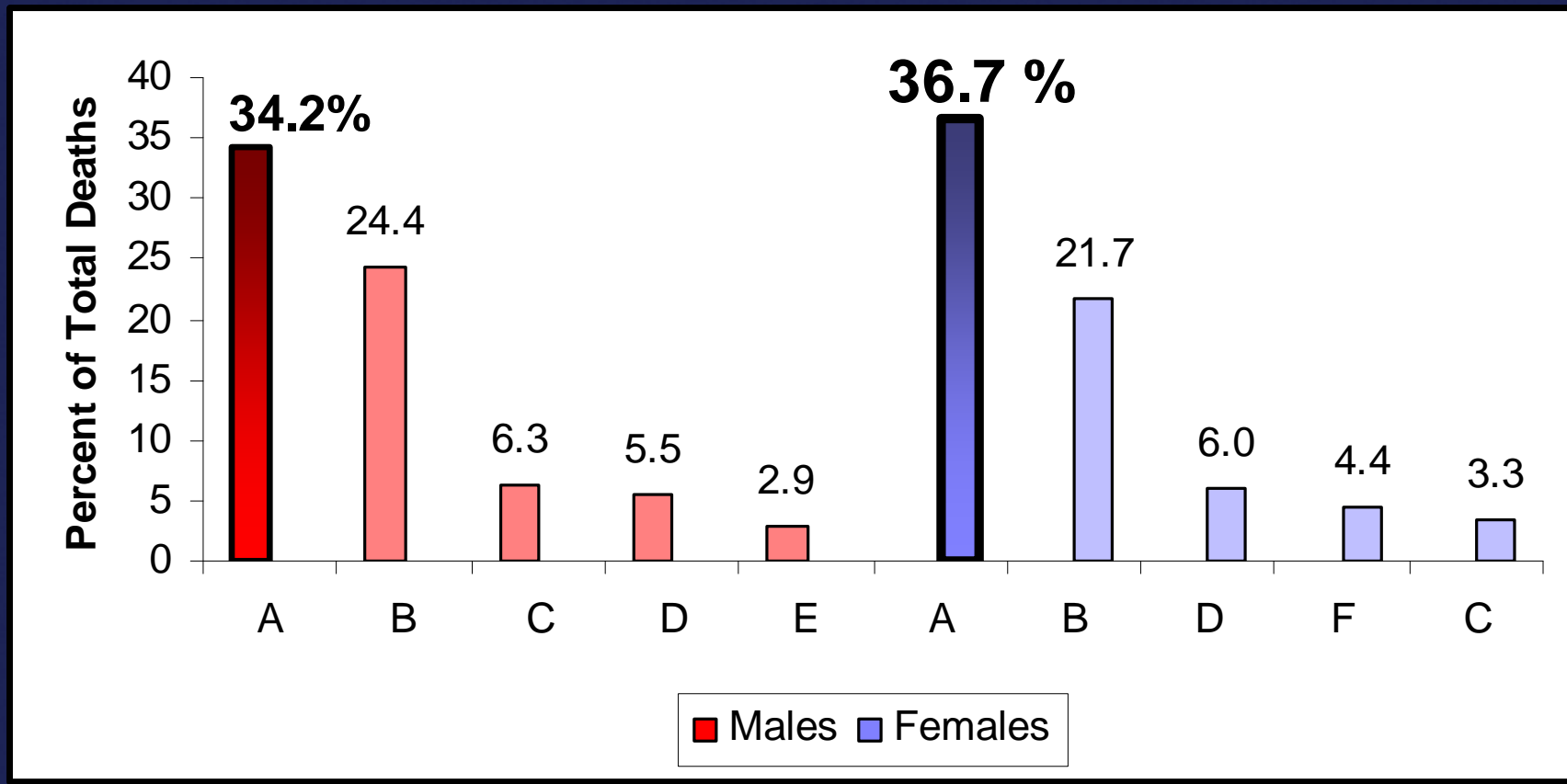
***Heart attack is the leading cause of death in women.***

***Stroke is a leading cause of serious, long-term disability in women***

# The Cost\_ *one death per minute!*

*Heart attack, stroke and other cardiovascular diseases claim the lives of more Americans than any other disorder.*

**Percent of Total Deaths from CVD and other major causes  
(United States: 2005). Source: NCHS.**



**A Total CVD**

**B Cancer**

**C Accidents**

**D Chronic Lower Respiratory Diseases**

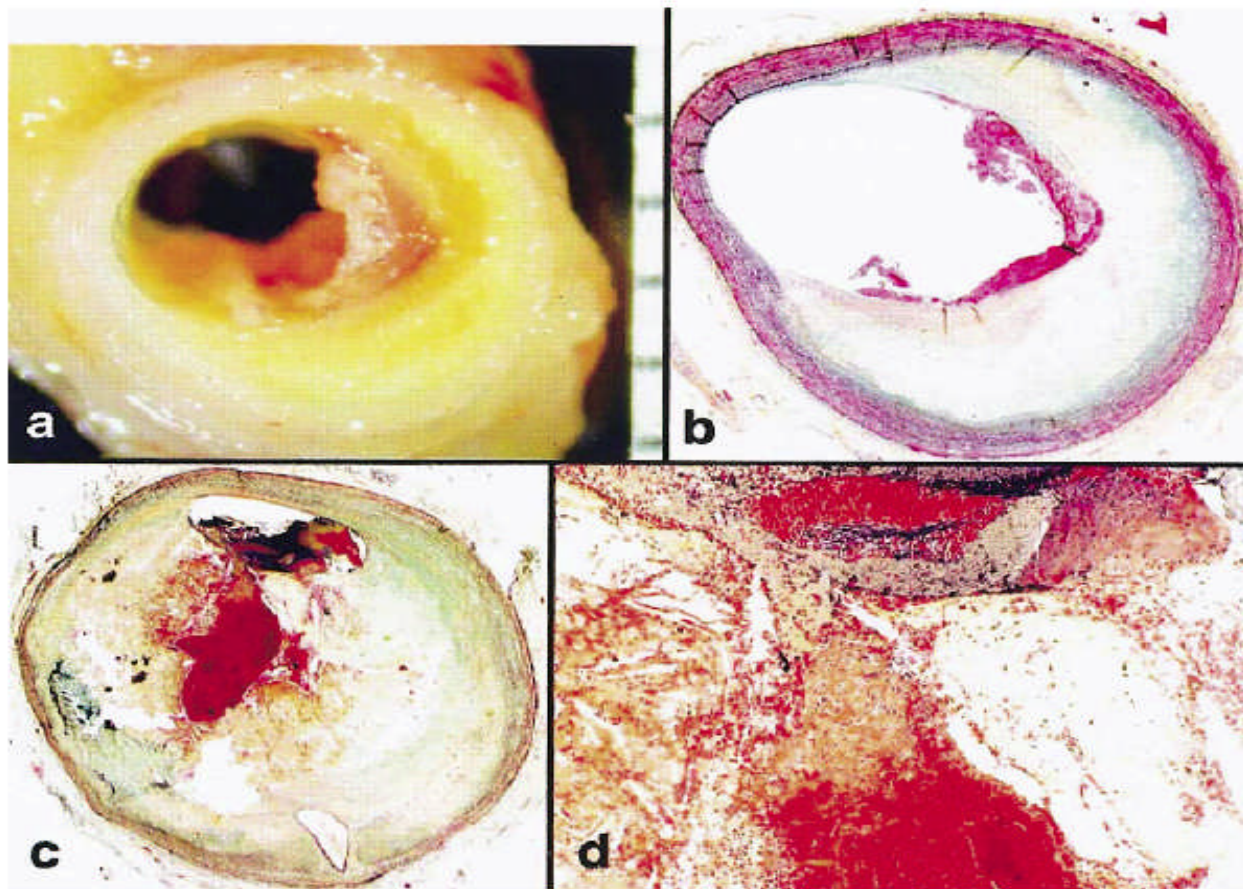
**E Diabetes Mellitus**

**F Alzheimer's Disease**

# What is Cardiovascular disease (CVD) ?

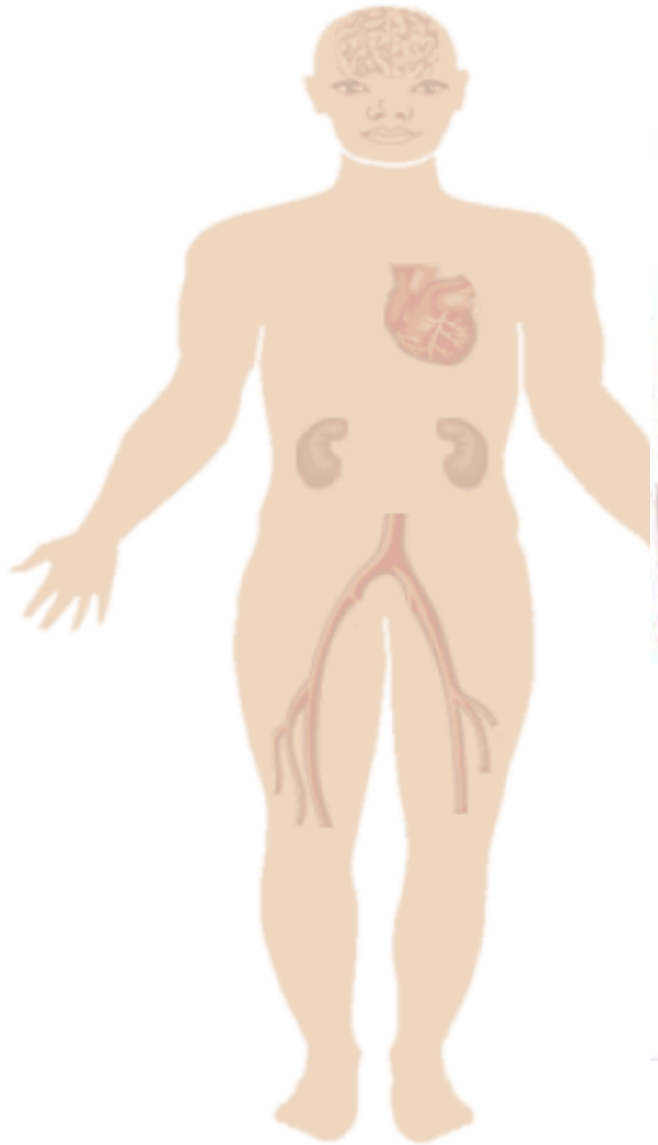
*CVD is the class of diseases that involve the heart or blood vessels , such as*

Coronary Artery Disease (CAD)  
Hypertension (High Blood Pressure)  
Stroke (CVA)  
Heart Failure (CHF)  
Peripheral Vascular Disease (PVD)

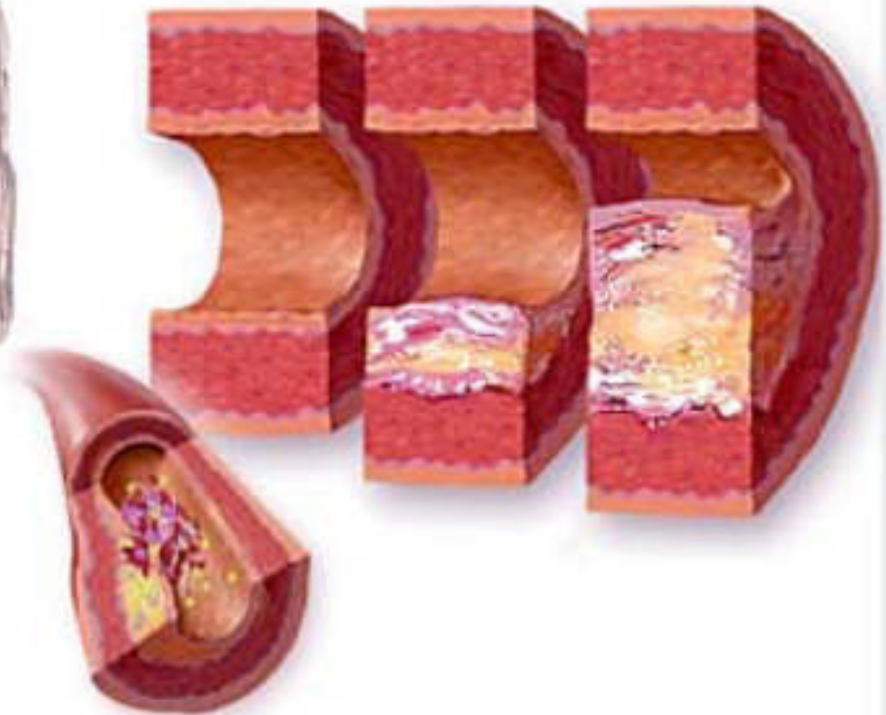


**Figure 2.** An example of plaque erosion, the typical presentation for sudden cardiac death in younger women. This example reveals an eccentric plaque with subocclusive thrombus in multiple views and sections (a to d) in a 58-year-old female smoker. Reproduced with permission (75).

Bairey Merz et al, The WISE Study: Microvascular and Macrovascular Disease JACC Vol. 47, No. 3 Suppl

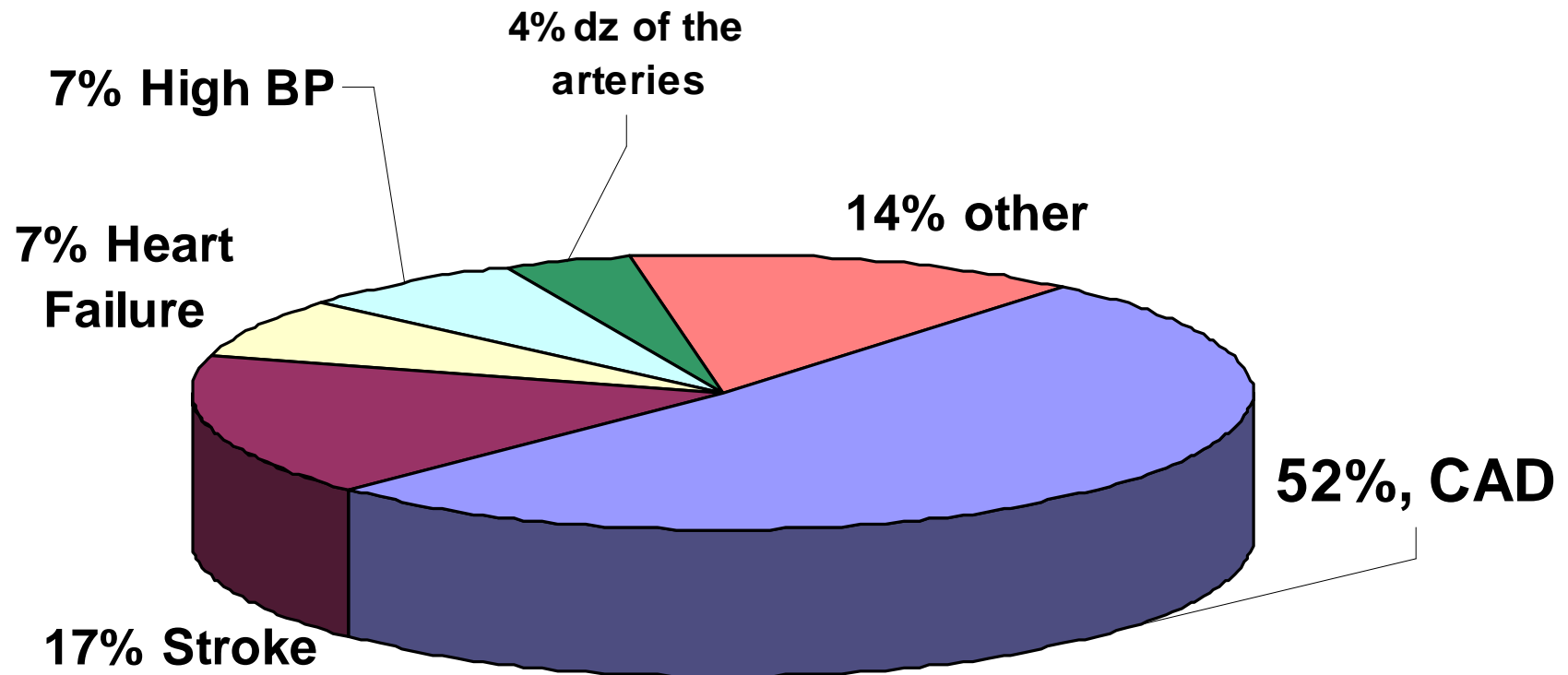


Welcome to the  
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**Peripheral Artery Disease Media Library**

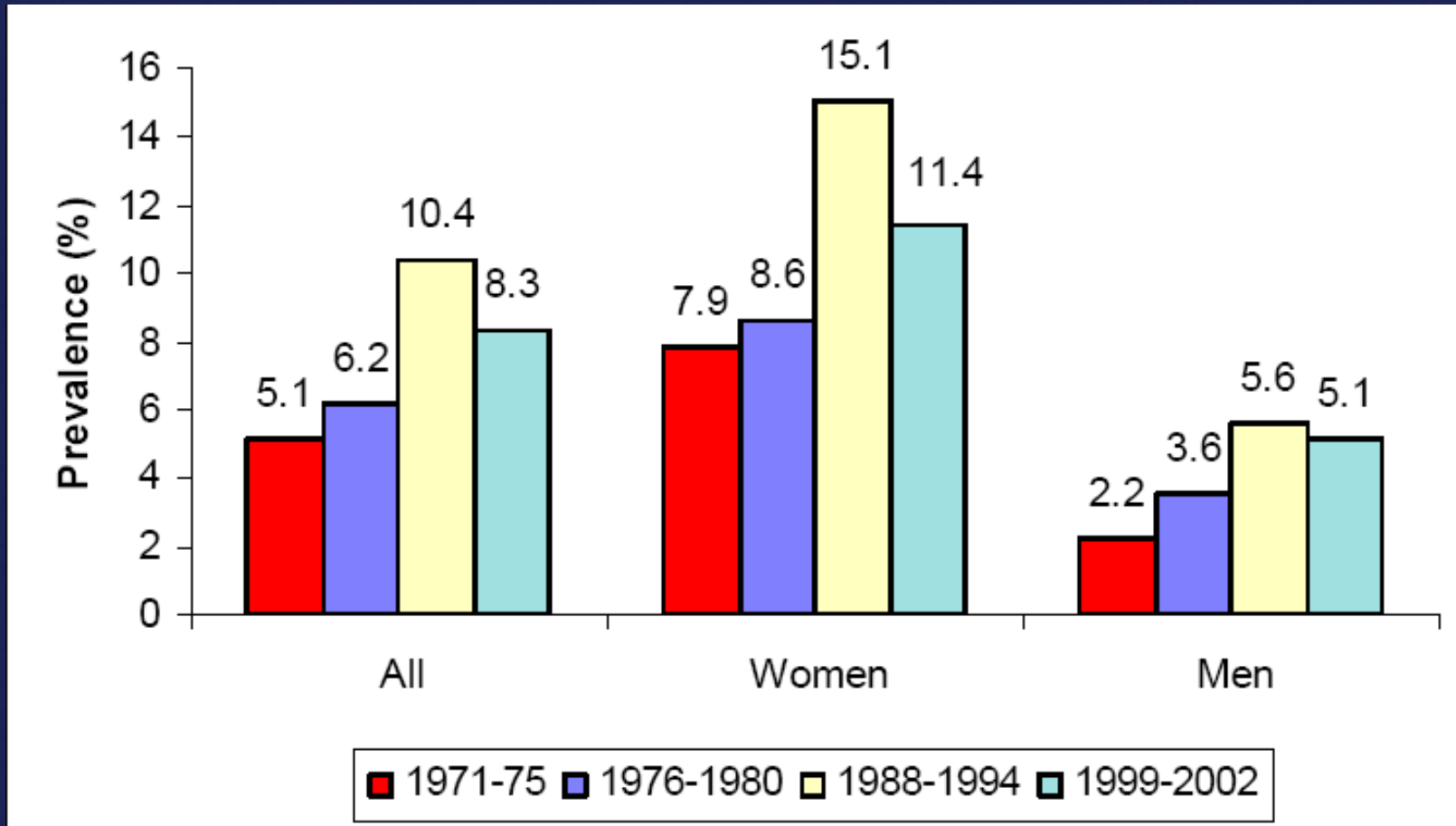


## Percentage breakdown of deaths from cardiovascular diseases

(United States: 2006 preliminary, Source: NCHS and NHLBI).



**Prevalence of low CHD risk, overall and by sex, ages 25-74  
(NHANES:1971-2002). Source: NHLBI 2007**



Low risk” is defined as  
no prior MI or DM  
cholesterol < 200 mg/dL

SBP <120 mm Hg and DBP<80 mm Hg;  
BMI <25 kg/m<sup>2</sup>      currently not smoking

# What causes CVD ?

*While some people have a genetic pre-disposition to CVD, there are well known factors which contribute to the development of CVD.*

*The most important factors are  
cigarette use,  
high blood pressure  
diabetes,  
high cholesterol,*

*Luckily, these risk can be controlled.*

## Hypertension is a major factor in the development of Heart Failure, Stroke, and Renal Failure

❖ **75% of heart failure cases *have antecedent hypertension.***

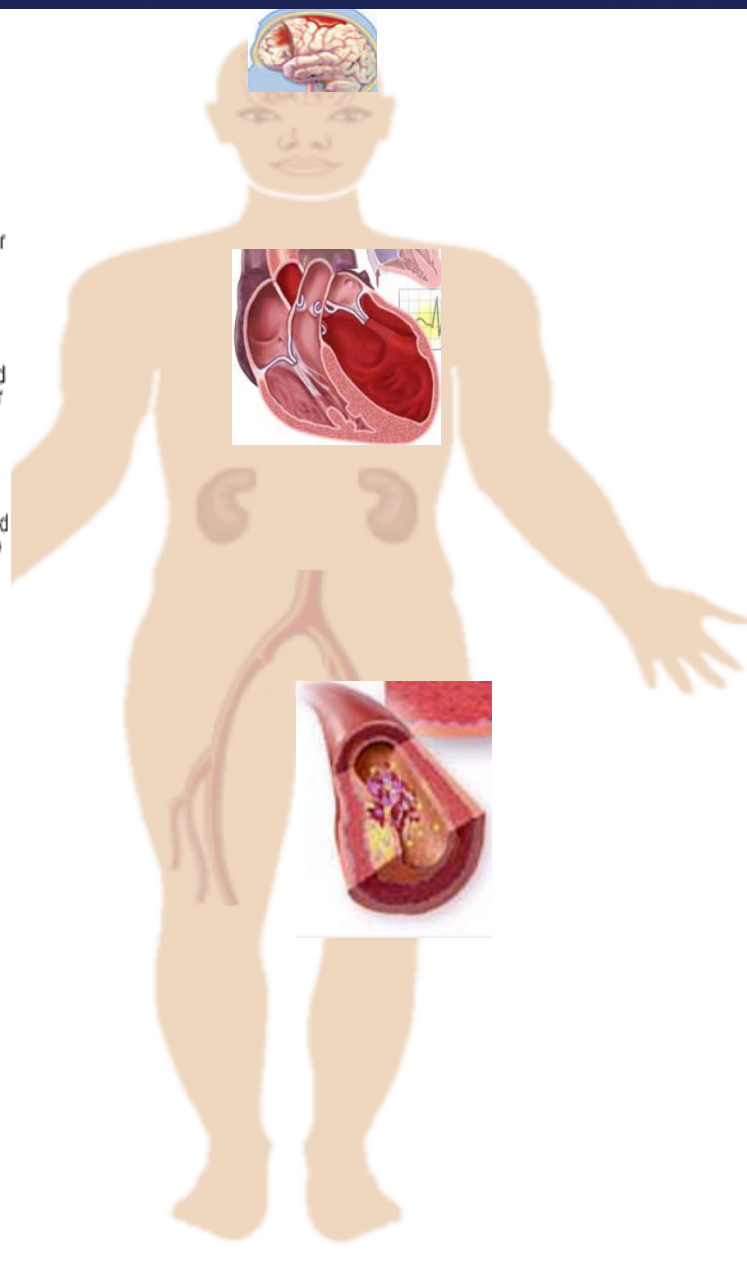
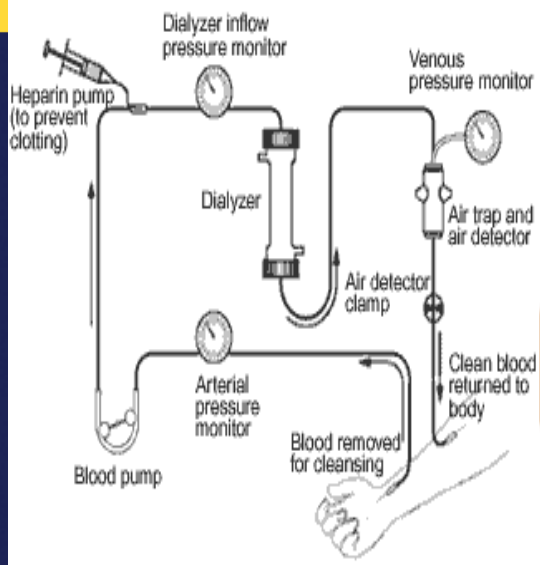
❖ ***Lifetime risk of heart failure doubles for people with BP > 160/90 mm Hg vs those with BP < 140/90 mm Hg.***

***77% of Americans treated for a first stroke have BP > 140/90***

**High blood pressure is one of the leading causes of kidney failure**

***African Americans are **six times** more likely to develop hypertension-related kidney failure.***

*Circulation. 2007;115:e69-e171, Heart Disease and Stroke Statistics—2007 Update*

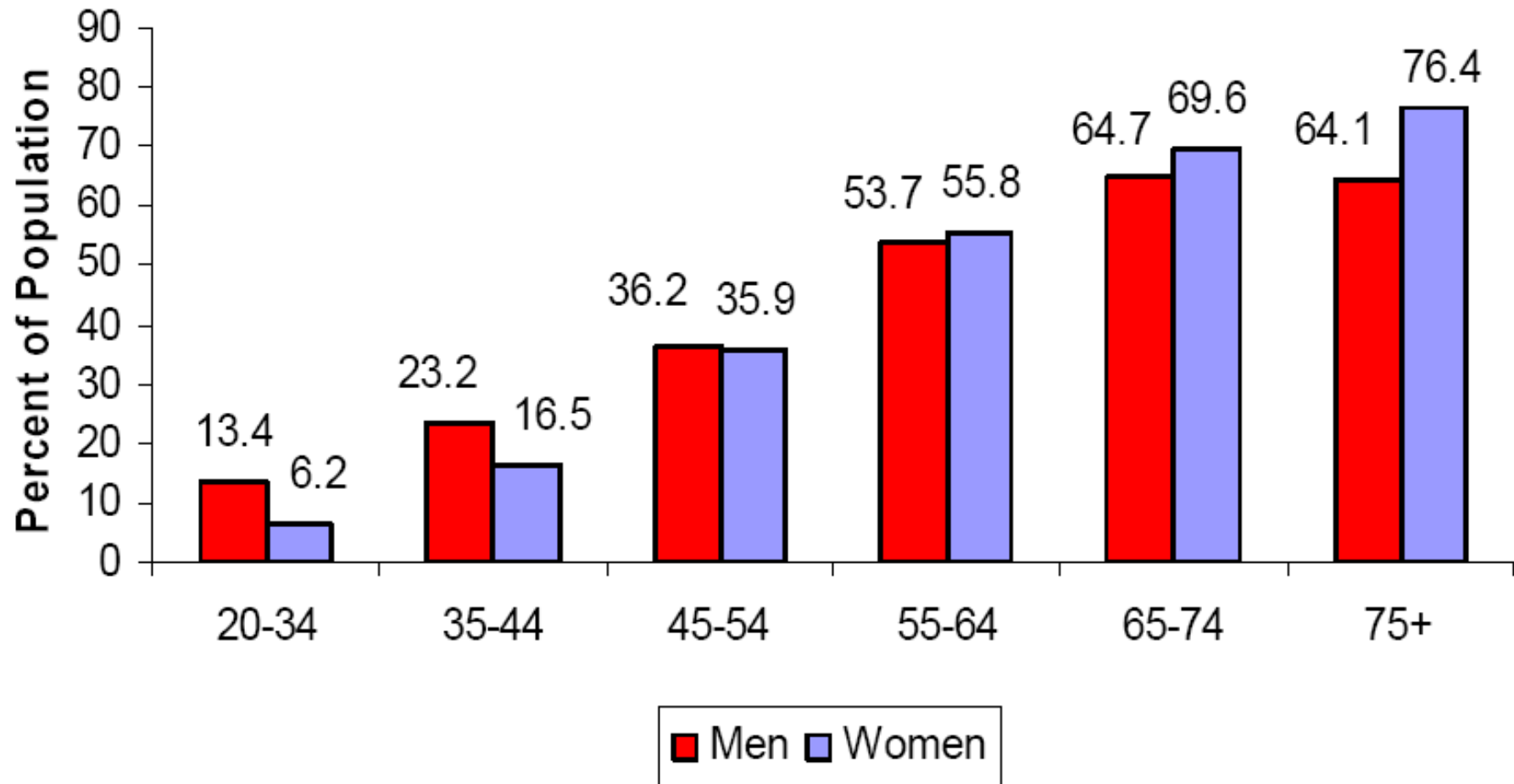


## Categories for Blood Pressure Levels in Adults

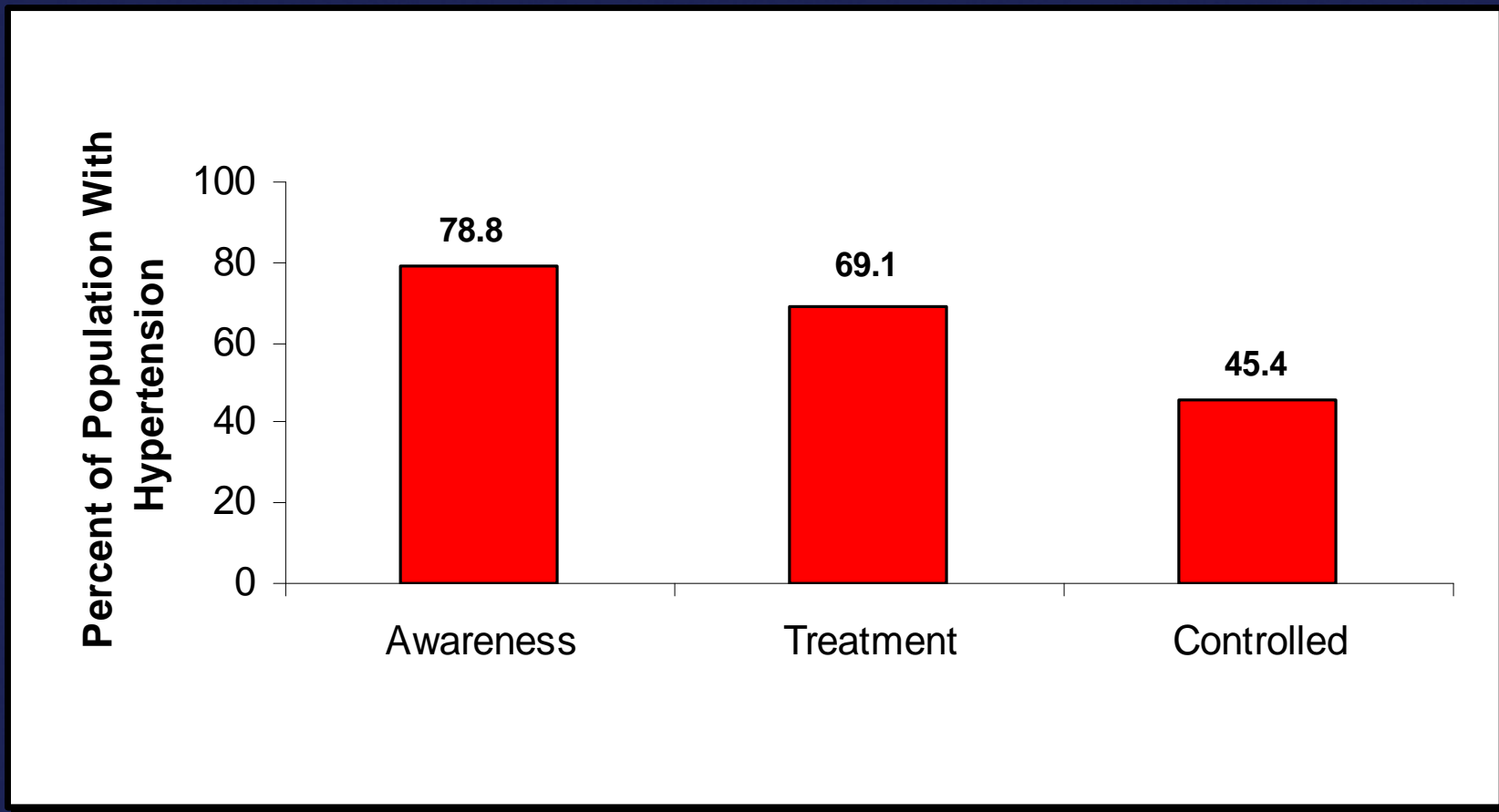
Category	Blood Pressure Level (mmHg)		
	Systolic		Diastolic
Normal	< 120	and	< 80
Prehypertension	120-139	or	80-89
<b>High Blood Pressure</b>			
Stage 1 Hypertension	140-159	or	90-99
Stage 2 Hypertension	≥ 160	or	≥ 100

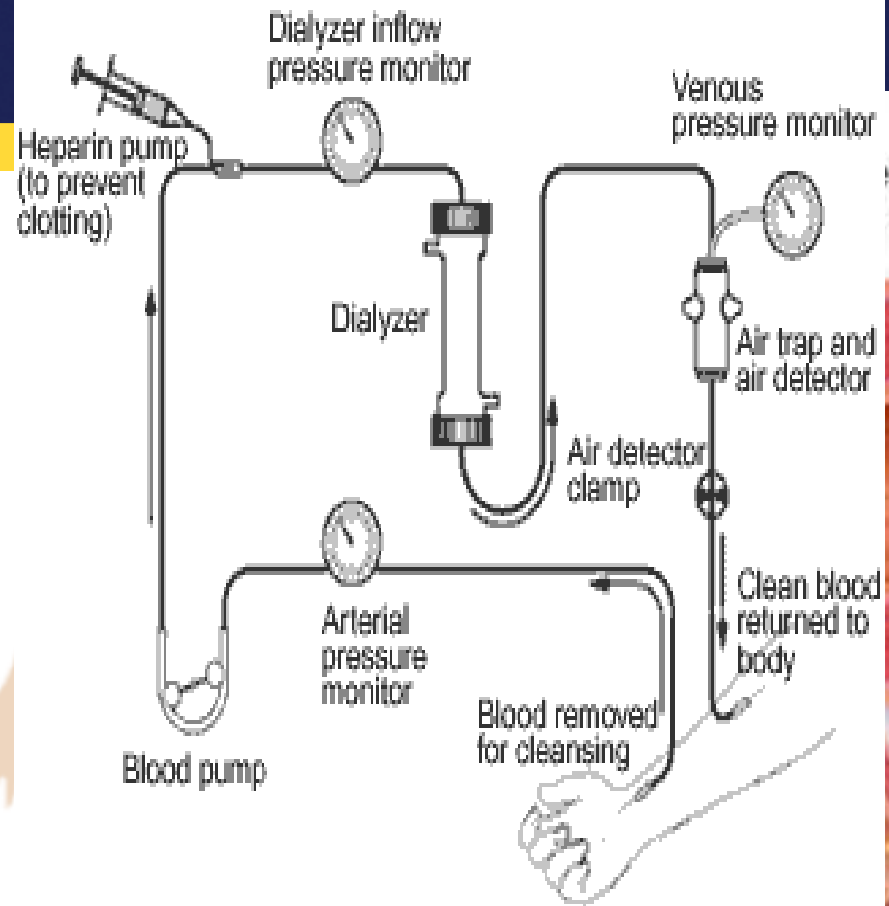
## Prevalence of high blood pressure in Adults by age and sex

(NHANES: 2005-2006). Source: NCHS and NHLBI.

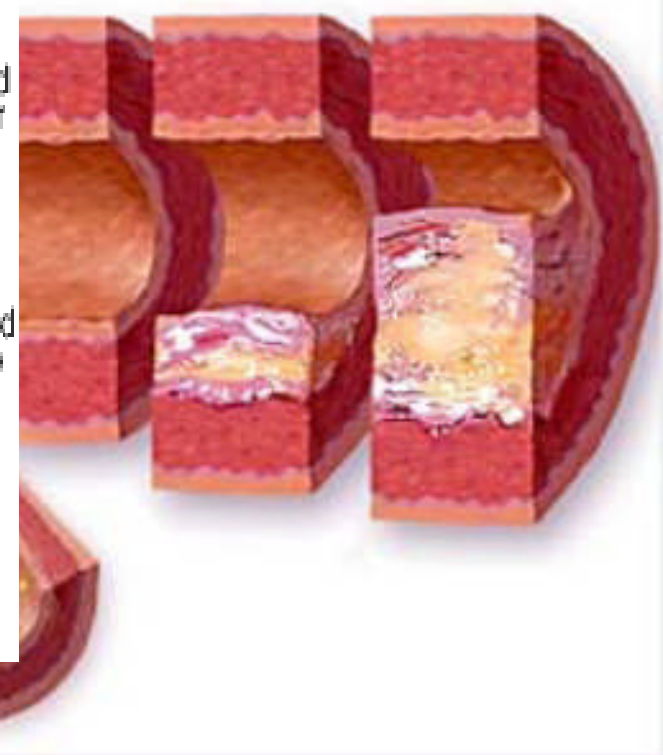


# Extent of awareness, treatment and control of high blood pressure (NHANES : 2005-2006). Source: NCHS and NHLBI.





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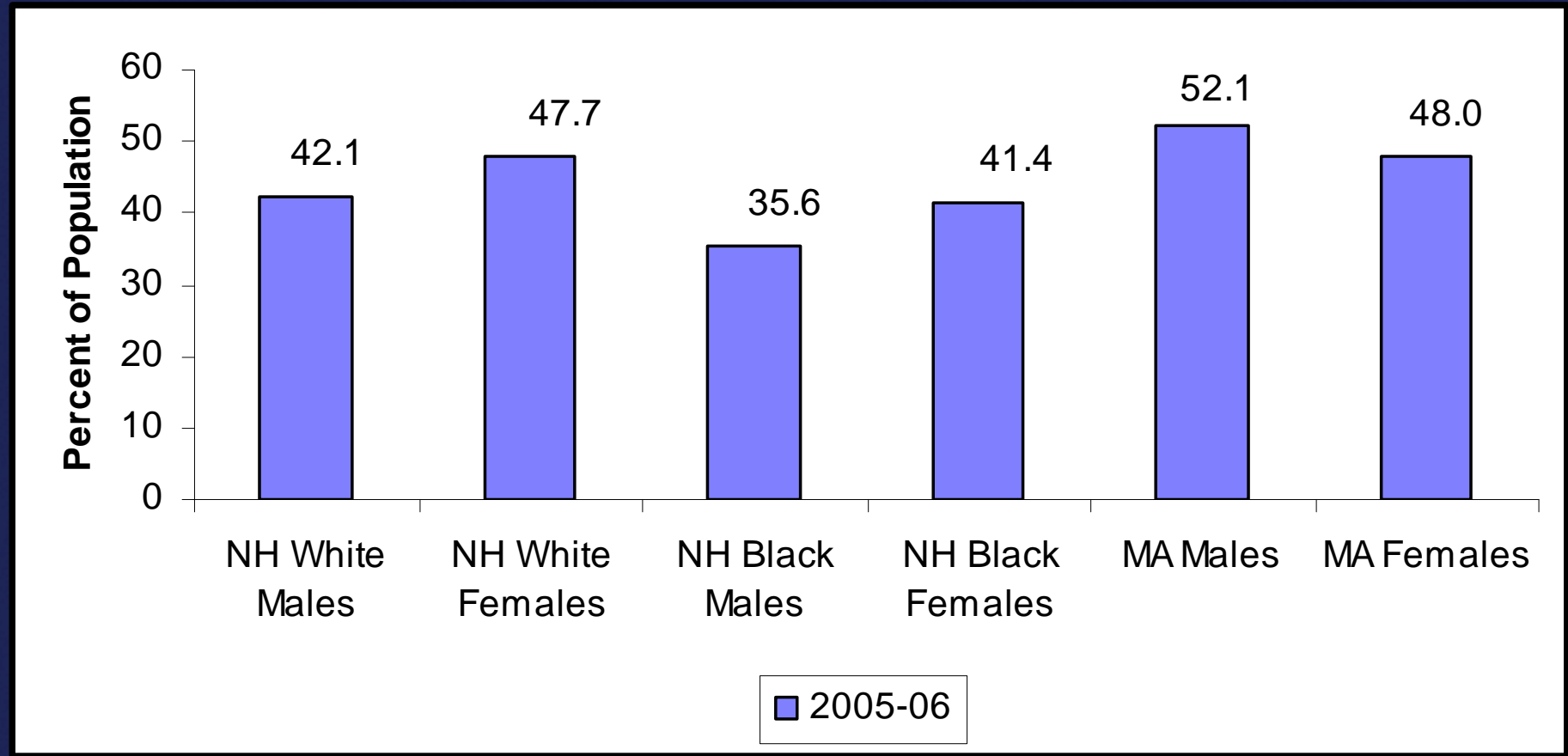
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Trends in the prevalence of total cholesterol (200+) in adults age 20 and older.  
(NHANES: 2005-06) Source: NCHS and NHLBI. NH – non-Hispanic.



## Diabetes is a major contributor to Cardiovascular Disease

*Diabetes is a group of diseases marked by high levels of blood glucose resulting from defects in insulin production, insulin action, or both. Diabetes can lead to serious complications and premature death.*

The risk for death among people with diabetes is about twice that of people without diabetes of similar age.

Diabetes was the seventh leading cause of death listed on U.S. death certificates in 2006. (though it contributes to far more deaths)

2007 Stats. CDC.Gov

## Prevalence of diagnosed and undiagnosed diabetes among people aged 20 years or older, United States, 2007

**Age 20 years or older:** 23.5 million or 10.7% of all people have diabetes

10.2% of all women have diabetes.

9.8% of all non-Hispanic whites diabetes.

14.7% of all non-Hispanic blacks have diabetes

CDC.Gov

## Complications of diabetes in the United States

### Heart disease and stroke

- Adults with diabetes have a 2 to 4 times higher rate of heart disease deaths
- The risk for stroke is 2 to 4 times higher among people with diabetes.

### Blindness

- Diabetes is the leading cause of new cases of blindness among adults year.

### Kidney disease

- Diabetes is the leading cause of kidney failure, requiring chronic dialysis or with a kidney transplant

### Nervous system disease

- Nervous damage results in pain in the feet or hands, erectile dysfunction, & slows digestion of food

### Amputations

- More than 60% of non-traumatic lower-limb amputations occur in people with diabetes.

CDC.Gov

## Complications of diabetes in the United States

### Dental disease

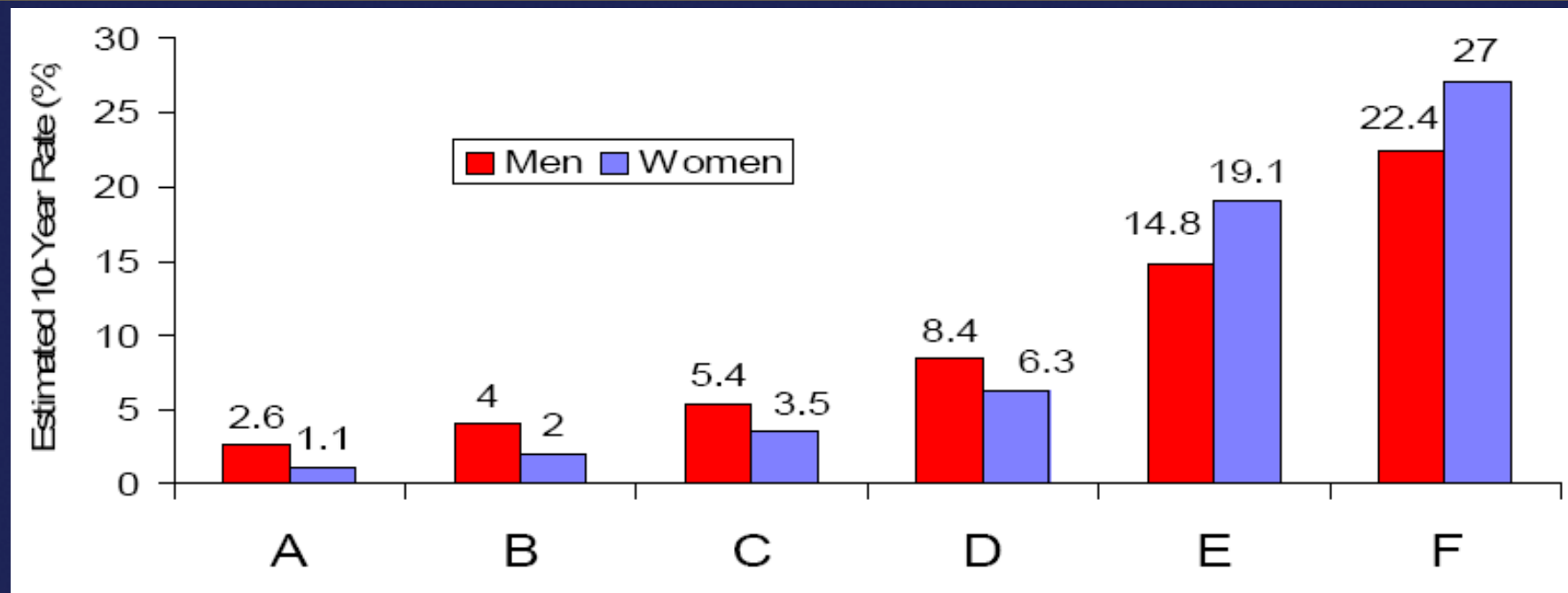
### Complications of pregnancy

- Poorly controlled diabetes in women with type 1 diabetes can cause major birth defects and spontaneous abortions
- Poorly controlled diabetes can result in excessively large babies, posing a risk to both mother and child.

### Other complications

- Uncontrolled diabetes often leads to biochemical imbalances that can cause acute life-threatening events, such as diabetic ketoacidosis and hyperosmolar (nonketotic) coma.
- People with diabetes are more susceptible to pneumonia or influenza

## Estimated 10-year stroke risk in 55-year-olds according to levels of various risk factors



	A	B	C	D	E	F
<b>Systolic BP*</b>	95-105	130-148	130-148	130-148	130-148	130-148
<b>Diabetes</b>	No	No	Yes	Yes	Yes	Yes
<b>Cigarettes</b>	No	No	No	Yes	Yes	Yes
<b>Prior CVD</b>	No	No	No	No	No	Yes

Wolf et al., Stroke.1991;22:312-318.

# What can you do?

*Decreasing CVD death rates requires a partnership with your physician and healthcare team.*



# What can you do?

## *STEP ONE \_\_\_ Healthy Lifestyle choice*

*Increase physical activity*

*Quit Tobacco*

*Make smart food choices*

Sodium = 2,300 mg of sodium each day, 1500 for those with high BP or HF

Fat – no more than 25-35% of your total calories from fat,

with less than 7 % as **saturated fat**

and less than 1 % as **trans fat**.

# ***Do Healthy Lifestyle choices work?***

## **Prevention or delay of diabetes**

- The Diabetes Prevention Program, a large prevention study of people at high risk for diabetes, showed that lifestyle intervention (eating less fat and fewer calories and exercising for a total of 150 minutes/week) reduced developing diabetes by 58% during a 3-year period. The reduction was even greater, 71%, among adults aged 60 years or older.

## **Prevention or delay of high blood pressure**

- The DASH ( Dietary Approaches to Stop Hypertension) diet could over time, lower your blood pressure by eight to 14 points. DASH diet is low in saturated fat, cholesterol, total fat and sodium, while rich in protein, fiber and healthy nutrients, particularly magnesium, potassium and calcium

## Smoking remains potent risk factor for death from heart disease, cancer

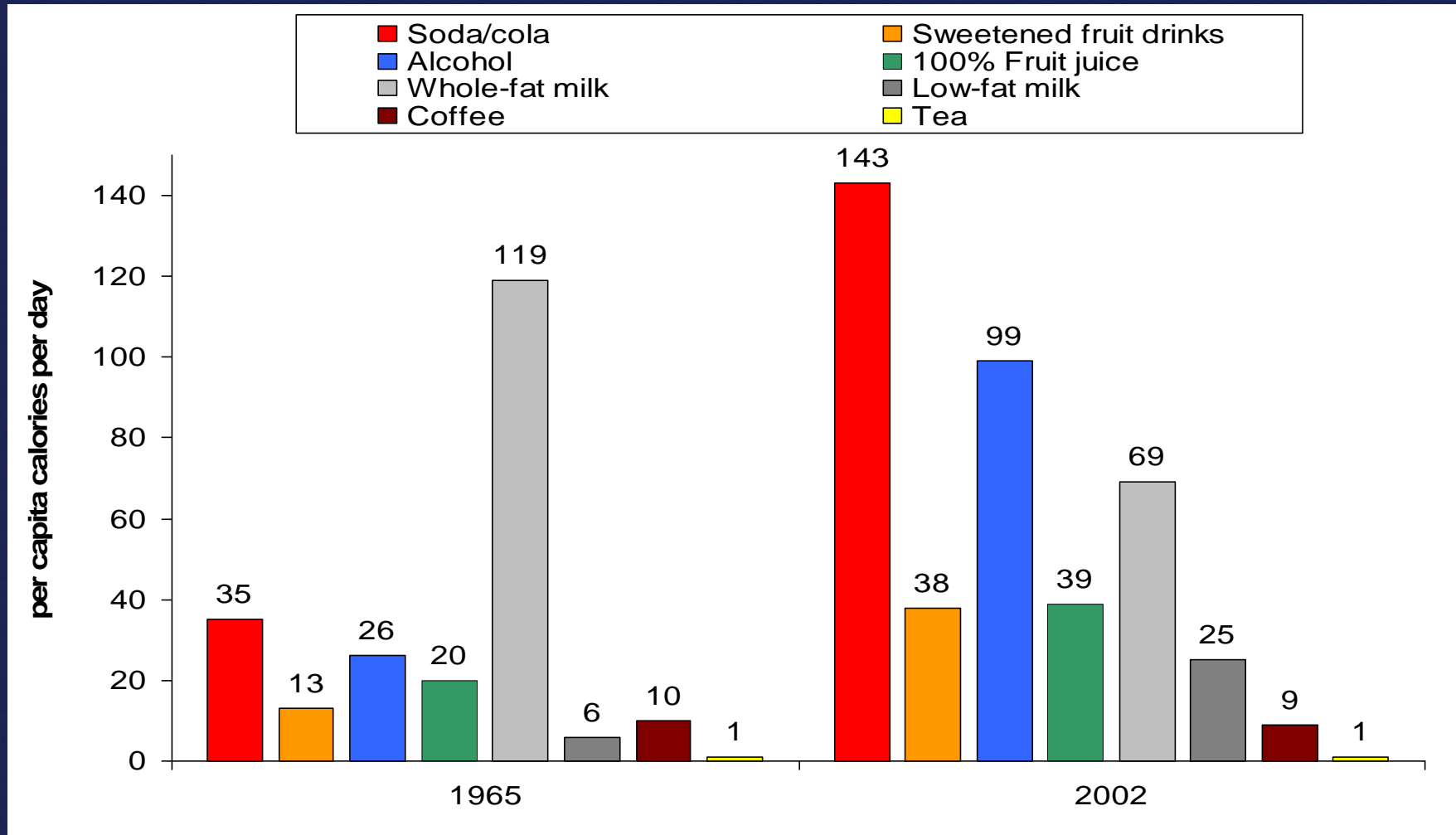
*A recently published study found that current smokers have a 2.26 x increased risk of death from CVD and a 3.56 x increased risk of cancer death when compared with those who never smoked*

*There was no significant difference between former smokers and nonsmokers in risk of death from heart disease*

Bhatt et al, Circulation 2009

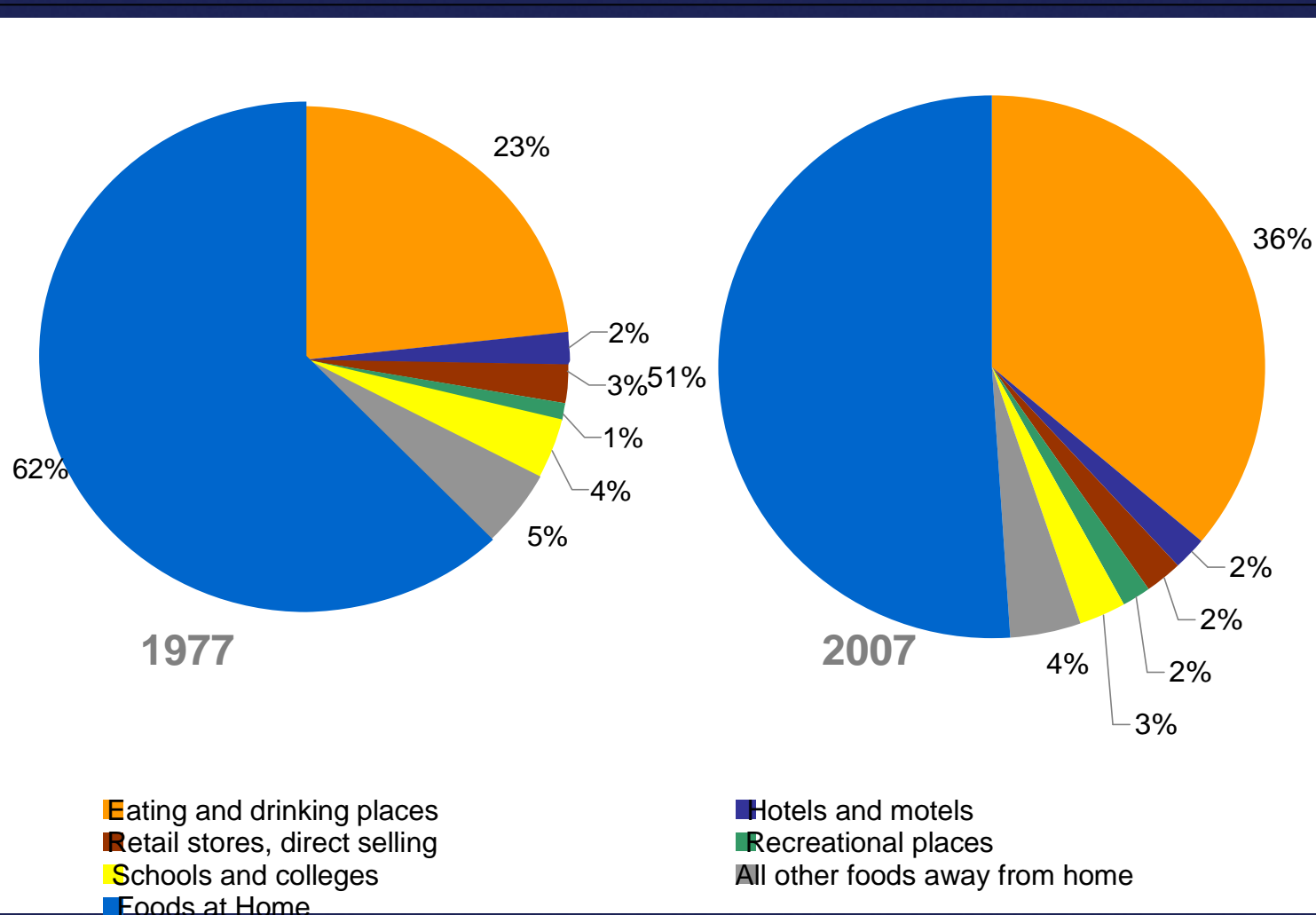
# Per Capita Calories Consumed from Different Beverages by U.S. Adults

Source: Nationwide Food Consumption Surveys (1965, 1977-78) and NHANES (1988-94, 1999-02); Duffey & Popkin, Obesity (Silver Spring) 2007



## Total U.S. Food Expenditures Away from Home and At Home, 1977 and 2007.

Source: United States Department of Agriculture Economic Research Service



# What can you do?

## *STEP Two\_\_\_ Know your numbers*

*Fasting blood sugar  
Blood Pressure  
Cholesterol  
Body mass index (BMI)*

# What can you do?

<b>Factor</b>	<b>Goal</b>	
Total Cholesterol	Less than 200 mg/dL	
LDL ("Bad") Cholesterol	LDL cholesterol goals vary.	
	Less than 100 mg/dL	Optimal
	100 to 129 mg/dL	Near Optimal/Above Optimal
	130 to 159 mg/dL	Borderline High
	160 to 189 mg/dL	High
	190 mg/dL and above	Very High
HDL ("Good") Cholesterol	50 mg/dL or higher	
Triglycerides	<150 mg/dL	
Blood Pressure	<120/80 mmHg	
Fasting Glucose	<100 mg/dL	
Body Mass Index (BMI)	<25 Kg/m <sup>2</sup>	

# Conclusion

*CVD is the leading cause of death in Americans.*

*Risk Factors for CVD, diabetes, high BP, high cholesterol, and tobacco use, are common and too frequently go unrecognized or poorly treated.*

*Premature death and disability can be avoided with lifestyle modification and medical treatment where necessary.*