Heart Disease- The Silent Killer

What is Heart Disease?

- A general term that covers a number of diseases which affect the heart, including coronary artery disease, heart-failure and angina.

- Heart Disease is the number one killer in the United States.

What Causes Heart Disease?

[?] Atherosclerosis-fatty deposits of cholesterol

[?] Hypertension- we will discuss in detail later.

Coronary Artery Disease

Occurs when the coronary arteries that supply the heart muscle become blocked.

- Partially blocked it causes angina.

- Fully blocked it causes a myocardial infarction or a heart attack!

Myocardial Infarction
or
Heart Attack

- ？Symptoms: uncomfortable pressure, fullness, squeezing pain, pain spreading to the shoulders, neck and arms.
- ？Chest discomfort and light headedness
- ？Anxiety/nervousness
- ？Paleness or pallor
- ？Increased irregular heart rate

Myocardial Infarction contd.

? Feeling of impending doom

If you or someone you know is having these symptoms call 911!

Congestive Heart Failure

❓Fits under the description of heart disease.

❓Does not mean the heart has failed, simply means the heart is not doing an efficient job.

❓It results from an injury or a reduction of function of the heart muscle.

❓Can be due to arteriosclerosis, hypertension, myocardial infarction, rheumatic fever or birth defect.

Congestive Heart Failure

- The right side of the heart collects the blood returning from the body and sends it to the lungs.
- If it is failing, the blood backs up into the veins, and there are signs of edema.
- The left side of the heart receives the blood from the lungs and pumps it out into the body. If it is failing the blood is not pumped effectively.

Cerebrovascular Accident
or
Stroke

?Blood vessel in the brain becomes blocked by atherosclerosis- the tissue supplied by the artery dies.

?Embolus – which is a traveling blood clot.

Symptoms of Stroke

- Sudden numbness or weakness of the face, arm or leg, especially on one side of the body.
- Sudden confusion, trouble speaking, or understanding.
- Sudden trouble seeing in one or both eyes.
- Sudden trouble walking, dizziness, loss of balance or coordination.

Symptoms of Stroke

- ☐ Sudden severe headache with no known cause.
- ☐ If you have any of these symptoms you need immediate medical attention!

Unchangeable Risk Factors

- Age- the older you get, the greater the chance.

- Sex- males have a greater rate even after women pass menopause.

- Race- minorities have a greater chance.

- Family history- if family members have had CHD, there is a greater chance.

Unchangeable Risk Factors

? Personal Medical History- other diseases such as Diabetes Mellitus can increase chances.

Changeable Risk Factors

- Hypertension
- Serum cholesterol
- Obesity
- Diabetes Mellitus
- Physical Inactivity
- Cigarette Smoking
- Alcohol Intake

Cholesterol

- Everybody needs cholesterol, it serves a vital function in the body.
- It is a component of the nerve tissue of the brain and spinal cord as well as other major organs.
- Frequently measured to promote health and prevent disease.
- A major component of the plaque that clogs arteries.

Types of Cholesterol

Lipoproteins- 4 main classes

- Chylomicrons
- Very low density lipoproteins (VLDL)
- Low Density Lipoprotein (LDL)
- High Density Lipoprotein (HDL)

Good vs. BAD

- ? LDL is known as bad cholesterol. It has a tendency to increase risk of CHD.
- ? LDL's are a major component of the atherosclerotic plaque that clogs arteries.
- ? Levels should be <130

Good vs. BAD

- HDL is known as the good cholesterol.
- It helps carry some of the bad cholesterol out of the body.
- It does not have the tendency to clog arteries.
- Levels should be >35.
- High levels of HDL >60 can actually negate one other risk factor.

The Facts About Fat

- Certain fats are essential for good nutrition and health.
- Fats provide essential fatty acids which the body can't manufacture.
- Act as insulators to maintain body temperature.
- Improve the palatability of food and promote digestion.

The Facts About Fat

- Provide the greatest energy output per gram of any food source. (9 cals)
- Carry fat soluble vitamins- A,D,E, and K.

The Skinny on Fat

? Saturated fats- basically means the fat is saturated with hydrogen, they are solid at room temperature. Examples are lard and butter.

? Why are they bad for you? They increase levels of LDL , decrease HDL and increase total cholesterol.

The Skinny on Fat

- What are polyunsaturated fats? They are unsaturated fats which are liquid at room temperature and in the refrigerator.
- Why are they good for us?
- They help the body get rid of newly formed cholesterol.

The Skinny on Fat

- What are monounsaturated fats?
- They are liquid at room temperature but start to solidify in the refrigerator.
- Decrease total cholesterol and lower LDL levels.

The Skinny on Fat

⍰What are trans fatty acids? They are unsaturated fats but they tend to raise total and bad cholesterol.

⍰Where do you find them?

⍰In fast-food restaurants

⍰Commercial baked goods. Examples: doughnuts, potato chips, cupcakes.

What about Omega 3?

- Type of polyunsaturated fat.
- Consistently lowers serum triglycerides and may also have an effect on lowering blood pressure.
- Found in oily fish such as salmon, tuna, and herring.
- Is available as a supplement.

Obesity

? People who are obese have 2 to 6 times the risk of developing hypertension.

? Location of the body fat is significant.

? Pears of apples?

Diabetes Mellitus

- At any given cholesterol level, diabetic persons have a 2 or 3 x higher risk of atherosclerosis!

- Insulin is required to maintain adequate levels of lipoprotein lipase, an enzyme needed to break down bad cholesterols.

Physical Inactivity

- ❓Increasing physical activity has been shown to decrease blood pressure.

- ❓Moderate to intense physical activity for 30-45 minutes on most days of the week is recommended.

Cigarette Smoking

- Causes an increase in blood pressure
- Usually have lower levels of HDL
- Within 1 year of quitting, CHD risk decreases, within 2 years it reaches the level of a nonsmoker.

Alcohol Consumption

- In small amounts it acts as a vasodilator- Good! 1-2 drinks

- In large amounts it acts as a vasoconstrictor- BAD! 3-4 drinks

- This is a very fine line!

Treatment

- ? Cardiac Catherization - Dr. inserts a plastic tube into an artery or vein and injects a dye, this can help to determine where the blockages are. Also a good method to determine the amount of blood and oxygen the heart is receiving.

Treatment

- Coronary Artery Bypass Surgery (CABG)

   The most frequently performed major surgery in the United States. Surgery reroutes or bypasses blood around clogged arteries.

Treatment

☐ Angioplasty (PCTA)

It involves creating a space in a blocker artery by inserting a small balloon and then inflating it. Now includes the placement of a mesh stent to improve effectiveness.

How can You Stop CVD?

Diet and Nutrition, there are several guidelines listed by the American Heart Association:

? Eat a variety of fruits and vegetables every day. (5 servings - they are naturally low in fat and high in vitamins and minerals)

? Eat a variety of grain products (6 a day)

Diet and Prevention of CVD

- Choose nonfat or low-fat products.
- Use lean meats- choose chicken, fish, turkey and lean cuts of beef and pork.
- Switch to fat-free milk- gradually reduce the fat content of the milk you drink.

Dietary Guidelines

- Choose fats with 2 gms or less of saturated fats per serving such as liquid and tub margarines, canola oil and olive oil.
- Balance the # of calories you eat with the number of calories you use each day.
- Maintain a level of physical activity that keeps you fit and matches the # of calories you eat.

Dietary Guidelines

- Limit your intake of foods high in calories and low in nutrition, including foods like soft drinks and candy.
- Limit foods high in saturated fat, trans fat and cholesterol
- Eat less than 6 gms of salt a day
- Have no more than one alcoholic drink a day.

Step I and II Diets

- The AHA and NCEP have developed these diets to treat high blood pressure and hypercholesterolemia
- They are designed to lower LDL levels, while at the same time promoting good nutrition.

Step I

- Total fat- 30% or less
- Sat fat- 7-10%
- Poly - up to 10%
- Mono Up to 15%
- Carb 55% or more
- Pro Approx 15%
- Chol. less than 300mg

Step II

- 30% or less
- 7%
- up to 10%
- up to 15%
- 55% or more
- Approx 15%
- less than 200 mg

Exercise and CVD

- Serves several functions in preventing and treating those at high risk.
- Reduces incidence of obesity.
- Increases HDL
- Lowers LDL and total cholesterol
- Helps control diabetes and hypertension
- Those at high risk should take part in a specially supervised program.

Conclusion

- Cardiovascular disease is the number one killer.
- It is highly preventable and controllable with diet and exercise.
- Good resource: www.americanheart.org
- 1-800-AHA-USA