Part I
Cardiac Rehab
East Jefferson General Hospital
Coronary Heart Disease Risk Factors
What is Coronary Artery Disease?

- The heart muscle is fed oxygen-rich blood by the coronary arteries.
- Over time, these arteries can develop blockages which impede blood flow to the heart:
  - Cholesterol and fatty deposits throughout our lives
  - Fat or plaque ruptures
  - Blood clot forms on top of ruptured plaque
  - Artery becomes blocked and the heart muscle in that area becomes starved for oxygen and nutrients in the blood.
Atherosclerosis
Heart Disease is the leading cause of death in the U.S.

>925,000 die of cardiovascular disease/stroke every year

Every 34 seconds an American dies as a result of cardiovascular disease/stroke

Heart Disease may be preventable
Risk Factors

- **Risk Factor:** any factor that increases the likelihood of coronary heart disease

- **Two Types of Risk Factors:**
  - **Modifiable:** We can do something to change these
  - **Non-modifiable:** We cannot change these
    - The presence of these risk factors makes us want to change the risk factors that we can
Non-Modifiable Risk Factors

- Advancing age: 65 years or older
- Male Sex
- Heredity
  - Family
  - Race
Modifiable Risk Factors

- Smoking
- Physical Inactivity
- High Blood Pressure (Hypertension)
- High Blood Cholesterol
- Overweight and Obesity
- Diabetes Mellitus
- Stress
Risk Factors

- The more risk factors you have the greater the risk
- You may decrease your risk of subsequent events by decreasing your risk factors
Smoking

- Top of the list for modifiable risk factors
- 430,000 deaths per year from smoking
- 1/5 of deaths from heart disease are caused by smoking
The Smoking Heart

- Makes the heart beat faster
  - Causes irregular beats
- Raises blood pressure
  - Alters the inside of the blood vessels
  - Elevates blood tests for inflammation in these vessels
- Decreases oxygen in the blood
  - Replaces it with harmful chemicals
- Makes blood clots more likely to occur
- Constricts blood vessels
- Increases LDL and decreases HDL
Second-Hand Smoke

- Promote a healthy workplace
- Maintain a healthy, smoke-free home
- Second-hand smoke causes all of the same problems for your family as smoking does for you
If you smoke....

- Be a QUITTER!
- Tips on quitting:
  - www.americanheart.org
    American Heart Association
  - www.lungusa.org
    American Lung Association
Physical Inactivity

- Physical inactivity makes you have 1.5 to 2.4 times greater risk of coronary artery disease than people who are active.
  - Risk comparable to high blood cholesterol, high blood pressure or cigarette smoking.
- Less-active persons have a 30-50% greater risk of developing HBP.
Physical Inactivity

- Physical Inactivity leads to:
  - Blood clots
  - Overweight and obesity
  - High blood pressure
  - Poor conditioning
  - Greater stress on the heart
Get Moving!

- Physical Activity can help to:
  - Build endurance
  - Control Blood Pressure
  - Reduce BAD Cholesterol Levels
  - Raise GOOD Cholesterol levels
  - Help with weight control
  - Reduce Stress
  - Reduce the risk of developing Diabetes
High Blood Pressure

- **BP**: The pressure forced on the blood vessel walls and your heart each time your heart pumps.

- High BP is "The Silent Killer"
  - Often don’t know you have it until damage to heart, blood vessels, kidneys, and/or brain has occurred.
What do the numbers mean?

- **“Systolic BP”**: the top number
  - The pressure on the blood vessels when the heart muscle contracts and pushes blood out to the body

- **“Diastolic BP”**: the bottom number
  - The pressure in the heart muscle itself in between beats while the heart is refilling with blood

- They are both important numbers
  - We take action when either one is high
Getting Tougher on High Blood Pressure

<table>
<thead>
<tr>
<th>Top number (systolic)</th>
<th>Bottom number (diastolic)</th>
<th>Your group</th>
<th>What to do*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 120 and</td>
<td>Below 80</td>
<td>Normal blood pressure</td>
<td>Maintain a healthy lifestyle</td>
</tr>
<tr>
<td>120-139 or 80-89</td>
<td></td>
<td>Prehypertension</td>
<td>Adopt a healthy lifestyle</td>
</tr>
<tr>
<td>140-159 or 90-99</td>
<td></td>
<td>Stage 1 hypertension</td>
<td>Adopt a healthy lifestyle; take medication</td>
</tr>
<tr>
<td>160 or more or 100+</td>
<td></td>
<td>Stage 2 hypertension</td>
<td>Adopt a healthy lifestyle; take more than one medication</td>
</tr>
</tbody>
</table>

*If you have heart disease, diabetes or chronic kidney disease, you'll need to manage your blood pressure more aggressively. This advice addresses high blood pressure as a single condition.

High Blood Pressure

- HBP was the primary cause of death for 410,000 Americans in 2014, and
- Contributed to the deaths of > 360,000 people.
- 1 in 3 American adults has HBP

American Heart Association @ www.americanheart.org
Problems Caused by High Blood Pressure

- Coronary artery disease
  - contributes to chest pain, angina, heart attack by increasing the workload of the heart
- Renal Insufficiency
  - Kidney Failure
- Peripheral Vascular Disease
  - Poor circulation
Problems Caused by High Blood Pressure

- Stroke
  - Brain attack
- Warning Signs
  - Sudden weakness or numbness of the face, arm or leg on one side of the body
  - Sudden dimness or loss of vision particularly in one eye
  - Loss of speech, trouble talking or understanding speech
  - Sudden severe headaches with no cause
Problems Caused By High Blood Pressure

- Any of the above may be only temporary lasting a few minutes. This maybe a “mini-stroke” called a transient ischemic attack or T.I.A.
- T.I.A’s are important warning signs that should not be ignored.
YOU can help lower your BP

- Take medications as prescribed
- Limit Sodium in diet
  - Rinse canned food
  - Limit frozen & processed foods
  - Limit deli meats and cheeses
- Limit Alcohol to:
  - one drink per day for women or
  - two drinks per day for men
- Get regular physical activity
- Maintain or work towards your ideal body weight
Coronary Heart Disease Risk Factors

Part II
Cardiac Rehab
East Jefferson General Hospital
Prepared By: Nicole Judice, BSN, RN, BC, CCRN
High Blood Cholesterol

- Different types of cholesterol
  - Total cholesterol number
  - Low Density Lipoprotein (LDL)
    - “The BAD stuff”
    - Deposits in blood vessels
  - High Density Lipoprotein (HDL)
    - “The GOOD stuff”
    - Picks up the LDL and gets rid of it
  - Triglycerides (TGI)
Cholesterol Numbers

- **LDL Goals** (for people who already know that they have heart disease) keep getting lower:
  - Goal was 100
  - Some new research says 70

- **HDL Goals**
  - Goal is 50-60
  - < 40 is too low

- Increased risk of coronary artery disease with high LDL AND/OR low HDL

[http://www.circulationaha.org](http://www.circulationaha.org)
What you can do to help lower your bad cholesterol (LDL)

- Take medications as prescribed
- Limit your intake of saturated fat, trans fat, and/or cholesterol
  - Eat less than 300mg of cholesterol per day.
  - Pick lean meat, trim fat, use olive oil, separate egg yolks, drink low-fat or fat-free milk
- Eat a variety of fruits, vegetables, and whole grains instead.
What you can do to raise your good cholesterol (HDL)

- Quit smoking
- Lose weight (or maintain a healthy weight)
- Be physically active for at least 30–60 minutes a day on most or all days of the week
In the US, 80% of people over age 25 are overweight.

Obesity could soon kill more people than tobacco smoke does.

Increased risk for diabetes, HBP, and heart disease.

Obese people have 50-100 times greater risk of death from all causes, especially cardiovascular.
How Do We Define Overweight and Obesity?

BMI = Body Mass Index

Your BMI value = multiply your weight in pounds by 703, divide by your height in inches, then divide again by your height in inches.

Search “BMI calculator” on the internet

BMI

- > 25 Overweight
- > 30 Obese
Losing Weight

- Multiply your weight in pounds by 15.
  - This is how many calories you use per day.
  - To lose weight, either eat less calories than that number or eat the number and burn more with exercise.

- Exercise regularly.

- Try to eat at least five servings of fruit and vegetables each day.
Diabetes Mellitus

- The CDC says that people with diabetes have a 2 to 4 times higher risk of heart disease compared with those who don’t have diabetes.
- Up to $\frac{3}{4}$ of people with diabetes will die from some form of heart disease.
- Diabetes changes the blood vessels and the blood cells’ ability to carry oxygen to the heart and body.
What is diabetes?

- Normally the pancreas makes insulin which enables the body to use glucose (or sugar) for energy.
- In persons with Type 1 diabetes, the pancreas makes no insulin. In persons with Type 2 diabetes, the pancreas makes very little insulin.
- So instead of getting used by the body, the glucose stays in the blood stream.
- “High blood sugar”
Diabetes and Heart Disease

- Good control of blood sugar
- Watch triglycerides and other cholesterol levels
- Careful selection of healthy foods for diet
- Exercise
- Monitor blood pressure closely
- Pay very close attention to your body
  - May have unusual or no symptoms of a heart attack
The Diabetes Management Center offers Diabetes Dynamics, a two-class course that teaches the basics of diabetes management, nutrition, foot care, exercise, goal setting and motivation.

Both morning and afternoon classes are offered.

For dates and fee information, call (504) 503-4165 to speak with the Diabetes Nurse.
EJGH Diabetes Support Group

- This group meets on the last Thursday of each month from 12:00 – 1:00 p.m at the EJGH Wellness Center.
- Members share information and support each other to promote successful diabetes management.
- Call (504) 503-4165 for more information.
Controversy over whether stress is an “independent risk factor” yet.

Research is ongoing about stress at work, at home, and people with certain personality types.

Stress and anger have been linked to heart attacks, unstable angina, and life-threatening heart rhythms requiring defibrillation.
How Stress Affects the Heart and Body

- Stress triggers the body’s fight or flight response
- Hormones are released in the body which:
  - Make blood more likely to form clots
  - Constrict the blood vessels
  - Raise blood pressure
  - Increase heart rate
  - Make the heart beat harder
Ways to Reduce Stress

- Spend time talking with family and friends.
- Take 15 to 20 minutes a day to breathe deeply and think of a favorite memory.
- Count to 10, inhale and exhale deeply whenever you feel angry.
- Exercise regularly.
- Get enough rest.
Modifiable Risk Factors

- Smoking
- Physical Inactivity
- High Blood Pressure (Hypertension)
- High Blood Cholesterol
- Overweight and Obesity
- Diabetes Mellitus
- Stress
References

- www.americanheart.org
- www.cdc.gov
- www.circulationaha.org
- www.fda.gov
- www.lungusa.org