CHOLESTEROL: DO YOU KNOW YOUR NUMBERS?
WHAT IS BLOOD CHOLESTEROL?

- A fat-like substance in the blood
- Made in the liver and comes from some foods we eat
- Too much cholesterol can build up in arteries over time
- Plays a major role in the development of atherosclerosis which causes heart attacks and strokes
QUIZ

• Why should you fast for a cholesterol test?
• What is the average time frame for cholesterol levels to change?
• Name three food sources that contain cholesterol.
DO YOU KNOW YOUR CHOLESTEROL NUMBERS?

• High cholesterol rarely has symptoms
• Have a blood test done called the “Lipid Profile”
LIPOPROTEIN PROFILE

Includes:

• Total Cholesterol
• LDL Cholesterol
• HDL Cholesterol
• Triglycerides
WHAT IS CHOLESTEROL?

- Cholesterol is a waxy, fat-like substance produced by the body's liver
- All living creatures (animals) produce cholesterol
- Plants do not produce nor contain any cholesterol
THE ESSENTIAL CHOLESTEROL

Cholesterol is essential to many everyday bodily functions

- Nerve transmission
- Making the body’s hormones
- Conversion of Vitamin D
- Bile acids
WHERE DOES CHOLESTEROL COME FROM?

Two sources:

• Your liver
  – About 1000 mg of cholesterol is produced by your liver each day
  – The liver produces all the cholesterol your body needs to function properly

• The food you eat
  – Saturated fat in animal foods
  – Cholesterol in animal foods
  – Trans fat (partially hydrogenated oils in packaged food)
HOW DOES CHOLESTEROL CARRY OUT ITS IMPORTANT ROLES?

- Travels through the bloodstream to the areas that require its use
- Cholesterol is carried in packages called lipoproteins
- Excess is deposited in the walls of the arteries - atherosclerosis
- Progressive atherosclerosis leads to heart attacks, strokes, and impotence
THE LIPOPROTEINS AND TRIGLYCERIDES

LDL Cholesterol (low density lipoproteins)

- “Bad” or “Lousy” cholesterol
- LDLs carry cholesterol away from the liver
- Too much LDL-cholesterol in the bloodstream is correlated with an increased risk of heart disease
THE LIPOPROTEINS & TRIGLYCERIDES

HDL Cholesterol (high density lipoproteins)
• “Good” or “Healthy” cholesterol
• HDLs carry cholesterol from parts of the body back to the liver for removal
• HDLs pick up the deposited LDL cholesterol
THE LIPOPROTEINS AND TRIGLYCERIDES

• Triglycerides are not cholesterol
• Free flowing fat found in the bloodstream
  – Strictly from dietary intake of fat
  – Most stored in fat tissue for future use
  – High triglycerides and high cholesterol levels increase heart disease risk
  – High triglycerides usually found with other cholesterol issues that increase risk of developing heart disease
The American Heart Association recommends that men and women should have a risk factor assessment and get their cholesterol checked starting at age 20.

**The National Cholesterol Education Program recommends…**
- Total Cholesterol = <200 mg/dL
- LDL Cholesterol = <100 mg/dL
- HDL Cholesterol = 40 - 50 mg/dL
  - 40 mg/dL for Men
  - 50 mg/dL for Women
- Triglycerides = <150 mg/dL

If risk factors present – repeat check every 2 years
If no risk factors – repeat check every 5 years
WHAT FACTORS AFFECT MY CHOLESTEROL?

- Overweight & obesity
- Lack of physical activity
- Poor diet
- Stress
- Smoking

- Age
- Genetics
- Disease
- Some drugs
- Reduced estrogen

Research has determined stress over an extended period of time increases cholesterol levels. Habits due to stress such as, eating fatty foods, may be in play here.
WHAT FACTORS AFFECT MY TRIGLYCERIDES?

- Overweight & obesity
- Lack of physical activity
- Smoking
- Excess alcohol consumption
- Eating an unhealthy diet
- Alcohol consumption
- Some drugs
- Genetics
WHAT ELSE INFLUENCES CHOLESTEROL?

• Alcohol — no more than 1-2 drinks/day
  – 1 drink/day for Women
  – 2 drinks/day for Men
• Age and Sex
  – After menopause, women’s cholesterol levels increase
  – Cholesterol levels increase in both men and women until 60 - 65
IMPROVE YOUR NUMBERS

- Stop Smoking!
- Eating Healthy
- Physical Activity
- Weight Loss
- Medication
CHOOSE HEALTHY FATS

• Avoid Saturated Fat
• Eat fewer solid fats
• Choose liquid “Heart-Healthy Fats”
• Choose lean protein = baked, skinless chicken, fish
• Consume lean animal protein in small portions (3 oz. or less) no more than 2-3 times per week
• Choose fat-free or low-fat dairy products
UNHEALTHY TRANS FATTY ACIDS

- Avoid Trans fats
- Avoid fried foods, cookies, cakes, crackers, snack foods, some margarines and many “packaged” foods
- Check all food labels and avoid foods that contain partially hydrogenated and hydrogenated oils
LIMIT INTAKE OF CHOLESTEROL

- Cholesterol in food can raise blood cholesterol levels
- Limit foods high in cholesterol
  - Liver, organ meats, egg yolks, full-fat dairy products
  - One egg yolk is equal to 250 mg of cholesterol
- The American Heart Association recommendations
  - Less than 300 mg/day
  - Less than 200 mg/day (with diabetes or heart disease)
CHOOSE HEALTHY CARBS

- Limit sugar and refined carbohydrates
  - Can raise triglycerides
- Eat Fiber (especially soluble fiber such as apples and pears)
  - Soluble fiber helps lower LDL cholesterol
- Drink alcohol in moderation
  - Limit to one glass of wine or drink per day
    - 1 drink/day for Women
    - 2 drinks/day for Men
### NEW FOOD LABELS

#### Nutrition Facts

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>2,000</th>
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<tbody>
<tr>
<td><strong>Serving Size</strong></td>
<td>16 crackers</td>
<td>29g</td>
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<tr>
<td><strong>Calories</strong></td>
<td>130</td>
<td>Calories from Fat 36</td>
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<tr>
<td><strong>Total Fat</strong></td>
<td>4g</td>
<td>6%</td>
</tr>
<tr>
<td>Saturated Fat</td>
<td>1g</td>
<td>5%</td>
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<tr>
<td>Polyunsaturated Fat</td>
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</tr>
<tr>
<td>Monounsaturated Fat</td>
<td>1.5g</td>
<td></td>
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<tr>
<td>Trans Fats</td>
<td>0g</td>
<td></td>
</tr>
<tr>
<td><strong>Cholesterol</strong></td>
<td>0mg</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Sodium</strong></td>
<td>260mg</td>
<td>11%</td>
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<tr>
<td><strong>Total Carbohydrate</strong></td>
<td>21g</td>
<td>7%</td>
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<tr>
<td>Dietary Fiber</td>
<td>1g</td>
<td>4%</td>
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<tr>
<td>Sugars</td>
<td>3g</td>
<td></td>
</tr>
<tr>
<td><strong>Protein</strong></td>
<td>2g</td>
<td>4%</td>
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<tr>
<td><strong>Vitamin A</strong></td>
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<td></td>
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<tr>
<td><strong>Vitamin C</strong></td>
<td>0%</td>
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</tr>
<tr>
<td><strong>Calcium</strong></td>
<td>2%</td>
<td>4%</td>
</tr>
<tr>
<td><strong>Iron</strong></td>
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*Percent Daily Values (DV) are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.*

#### Ingredients:
- Enriched flour (wheat flour, niacin, reduced iron, thiamine mononitrate [vitamin B1], riboflavin [vitamin B2], folic acid), partially hydrogenated soybean oil, defatted wheat germ, sugar, corn starch, high fructose corn syrup, corn syrup, salt, molasses...
PHYSICAL ACTIVITY

• Important even as we get older
  – Raises HDL cholesterol
  – Lowers LDL cholesterol
  – Lowers triglycerides

• 30 minutes or more on most days
  – Moderate activity
  – Walking, hiking, biking, dancing, etc.
WEIGHT MANAGEMENT

• Weight loss can
  – Decrease LDL cholesterol
  – Decrease Triglycerides
  – Increase HDL cholesterol
• Just 5 to 10 pounds will help show improvements
## DROPPING YOUR CHOLESTEROL WITH DIETARY CHANGES

<table>
<thead>
<tr>
<th></th>
<th>Recommendation</th>
<th>Reduction in LDL</th>
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<tbody>
<tr>
<td>Saturated Fat</td>
<td>&lt;7-10% of calories</td>
<td>8-10%</td>
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<tr>
<td>Dietary Cholesterol</td>
<td>&lt;200 mg/day</td>
<td>3-5%</td>
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<tr>
<td>Weight Reduction</td>
<td>10 lb loss</td>
<td>5-8%</td>
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<tr>
<td>Soluble Fiber</td>
<td>5-10 g/day</td>
<td>3-5%</td>
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<tr>
<td>Plant Sterols/Stanols</td>
<td>2 g/day</td>
<td>5-15%</td>
</tr>
<tr>
<td><strong>Total Reduction</strong></td>
<td></td>
<td><strong>20-30%</strong></td>
</tr>
</tbody>
</table>

Source: National Heart, Lung and Blood Institute
• Medications are needed by some to control cholesterol levels
• Even on meds, continue with healthy eating and physical activity
• Your doctor will help decide the best type of drug for your situation
Bile Acid Sequestrants

- Bind with cholesterol-containing bile acids in the intestines, which are then eliminated in the stool

Drug Names

- Cholestyramine (Questran)
- Colestipol (Colestid)
**Statins**

- Lower LDL cholesterol levels
- Inhibits an enzyme that controls the rate of cholesterol production in the body

**Drug Names**

- Mevacor (lovastatin)
- Lescol (fluvastatin)
- Pravachol (pravastatin)
- Baycol (cerivastatin)
- Zocor (simvastatin)
- Lipitor (atorvastatin)
• Nicotinic Acid (Niacin)
  – Lowers total cholesterol
  – Lowers LDL cholesterol
  – Raises HDL cholesterol
  – Consult your physician before taking supplements
**Fibrates (Fibric Acids)**

- Lowers triglycerides
- May increase HDLs

**Drug Names**

Lopid
Colestipol
POINTS TO REMEMBER

• Know your numbers
• Eat plenty of fruits and vegetables, whole grains, legumes, low-fat dairy products, and lean protein
• Eat less saturated/trans fat, refined carbohydrates and cholesterol
POINTS TO REMEMBER

• Adopt a healthy diet, one rich in fruits, vegetables, legumes, and whole grains
• Eat meat sparingly
• Exercise regularly
• Lose weight if overweight
• Talk with your doctor about medications if lifestyle changes aren’t enough
SUMMARY AND QUESTIONS

Thank you for attending!
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