Cholesterol 101: Understanding the basics

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Jim Meister, RD, LDN, CPT

To provide feedback or to receive a copy of today’s slides, send an email to jmeister@activehealth.net.
Learning objectives

- **Review** the basics of cholesterol
- **Understand** how we measure cholesterol
- **Learn** the causes of high LDL cholesterol
- **Explore** how to manage your cholesterol levels
What is cholesterol?

• A waxy substance like fat in the blood
• Our bodies need *some* cholesterol
• We get it from:
  – Food we eat
  – Our bodies make it
Why it’s important to know if you have high cholesterol?

• Too much cholesterol in the blood can cause build-up in our arteries (“plaques”)
• Blood has a harder time getting through
• This can mean:
  – a stroke, if blood doesn’t get to the brain
  – a heart attack, if blood doesn’t get to the heart

Cholesterol is risk factor for heart disease.
Cholesterol and heart disease: the connection

• A collection of heart-related diseases
  – Most common type in the U.S. is coronary artery disease

• Most common cause is narrowing or blockage of the arteries around the heart so blood can’t get through as easily
  – Happens slowly over time
  – It’s the major reason people have heart attacks

• Other causes are related to the valves in the heart or how the heart pumps. If the blood doesn’t pump well, the heart can fail.
Normal artery vs. narrowing of the artery
## Risk factors for heart disease

<table>
<thead>
<tr>
<th>Conditions*</th>
<th>Behavior/Lifestyle*</th>
<th>Family History</th>
</tr>
</thead>
<tbody>
<tr>
<td>High cholesterol</td>
<td>Smoking</td>
<td>Genetic factors</td>
</tr>
<tr>
<td>High blood pressure</td>
<td>Diet / excessive alcohol</td>
<td>Age</td>
</tr>
<tr>
<td>Diabetes</td>
<td>Lack of exercise</td>
<td>Male</td>
</tr>
<tr>
<td>Obesity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Stress</td>
<td></td>
<td>*Modifiable risk factors</td>
</tr>
</tbody>
</table>
ActiveTrivia

What are the symptoms of high cholesterol?

A. Headache
B. Vomiting
C. Cold fingers and toes
D. There are no symptoms
Everyone wants to be more happy than lousy.

There are two kinds of cholesterol

<table>
<thead>
<tr>
<th>Bad cholesterol</th>
<th>Good cholesterol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low density lipoprotein (LDL)</td>
<td>High density lipoprotein (HDL)</td>
</tr>
<tr>
<td>More likely to cause build-up in our arteries</td>
<td>Absorbs cholesterol, carries it back to liver, and flushes it from the body</td>
</tr>
<tr>
<td><strong>Raises</strong> our risk of heart attack and stroke</td>
<td><strong>Lowers</strong> our risk of heart attack and stroke</td>
</tr>
</tbody>
</table>

L = LOUSY     
H = HAPPY
Are you up to the [cholesterol] test?

- Measured with a blood test
- It’s best not to eat 9 to 12 hours before

**Scores**
- Total cholesterol
- Triglycerides
- Bad cholesterol (LDL)
- Good cholesterol (HDL)
Understanding cholesterol tests

<table>
<thead>
<tr>
<th></th>
<th>High</th>
<th>Borderline</th>
<th>Desirable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total cholesterol</td>
<td>Above 240</td>
<td>200 to 239</td>
<td>Below 200</td>
</tr>
<tr>
<td>Triglycerides</td>
<td>Above 200</td>
<td>150 to 199</td>
<td>Below 150</td>
</tr>
<tr>
<td>LDL (bad cholesterol)</td>
<td>Above 160</td>
<td>130 to 159</td>
<td>Below 100</td>
</tr>
<tr>
<td>HDL (good cholesterol)</td>
<td>Less than 35</td>
<td>35 to 60</td>
<td>Above 60</td>
</tr>
</tbody>
</table>
You have the power to change high cholesterol

- **Things we can change**
  - What we eat
  - Physical activity
  - Weight

- **Things we can’t change**
  - Age
  - Gender
  - Family history
How can we lower cholesterol?

• There are two main ways to lower cholesterol
  1. Medication
  2. Lifestyle changes
     • Diet
     • Physical activity
     • Weight loss
Diet and cholesterol: you are what you eat

• Limit foods high in saturated fat and cholesterol
• Avoid foods with trans fat
• Eat high fiber foods
  – Oatmeal
  – Kidney beans
  – Apples
  – Pears
  – Barley
  – Prunes
  – Etc.
• Eat foods that contain “healthy fat”
## Eat this not that

<table>
<thead>
<tr>
<th>Eat This</th>
<th>Not That</th>
</tr>
</thead>
<tbody>
<tr>
<td>Olive oil, canola oil</td>
<td>Butter, lard, palm oil, coconut oil</td>
</tr>
<tr>
<td>Skinless chicken or turkey, lean beef, veal, pork, lamb, and fish</td>
<td>Processed or fatty meat</td>
</tr>
<tr>
<td>Egg whites</td>
<td>Egg yolks</td>
</tr>
<tr>
<td>Fat-free or low fat milk, ice cream, and cheese</td>
<td>Cream, cheese, ice cream</td>
</tr>
<tr>
<td>Walnuts or almonds</td>
<td>Potato chips</td>
</tr>
<tr>
<td>Oatmeal</td>
<td>Fast food breakfast</td>
</tr>
</tbody>
</table>
Increasing physical activity can lower cholesterol

• **Activity** is especially important for people
  – With high cholesterol and
  – Who are overweight and
  – Have a large waist measurement
    • Men: larger than 40 inches
    • Women: larger than 35 inches
Physical activity and cholesterol - out with the bad: in with the good

• Helps us lose weight
• Raises HDL (good cholesterol)
• Lowers LDL (bad cholesterol)
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How much weight do people need to lose to start lowering their cholesterol?

A. All of their extra weight
B. Half of their extra weight
C. 5-10% of their body weight
Don’t weight – be proactive with your health

Being overweight
• Increases the risk for heart disease
• Increases our cholesterol

Losing weight
• Lowers LDL (bad cholesterol)
• Lowers total cholesterol
• Raises HDL (good cholesterol)

To lose a pound a week:
• Eat 500 fewer calories each day or
• Burn 500 more calories each day
Medication

• Statins lower LDL cholesterol by:
  – Slowing down how quickly the liver makes cholesterol
  – Increasing the liver's ability to remove LDL in the blood
• Statins don’t cure high cholesterol
• You need to keep taking the medicine to keep your cholesterol level in the normal range
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True or False:

If you take cholesterol medication, you don’t need to worry about diet, exercise, and weight.

False
What might managing your cholesterol mean for you?

- **Imagine** 6 months from now, you’ve made some changes to your diet, exercise, weight, or medications.
- **What does your life look like?**
Setting SMART goals

- **S**pecific
- **M**easurable
- **A**ttainable/Achievable/Action-Based
- **R**ealistic
- **T**ime-specific
Summary

• You now understand the basics of cholesterol
• You feel more confident that you can manage your cholesterol levels
• You have the ability to set SMART goals
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