1. Initial classification of risk is based on a fasting lipoprotein profile (total cholesterol, LDL cholesterol, HDL cholesterol, triglycerides).
   - If the testing opportunity is non-fasting, only the total and HDL cholesterol will be useable. In non-fasting situations, if total cholesterol is $\geq 200$ mg/dL or HDL cholesterol is $< 40$ mg/dL, a follow-up fasting lipoprotein profile is needed for appropriate management based on LDL cholesterol.
   - To reduce physiologic variability, it is recommended to average two measurements 1-8 weeks apart. If the two LDL cholesterol values differ $\geq 30$ mg/dL, then obtain a third measurement in 1-8 weeks and average all three results.

2. Classification of results from lipoprotein profile (mg/dL):
   - **LDL cholesterol (primary target of therapy)**
     - Optimal: $< 100$
     - Near optimal: 100-129
     - Borderline high: 130-159
     - High: 160-189
     - Very high: $\geq 190$
   - **Total cholesterol**
     - Desirable: $< 200$
     - Borderline high: 200-239
     - High: $\geq 240$
   - **HDL cholesterol**
     - Low: $< 40$ (risk factor)
     - High: $\geq 60$ (desirable)
   - **Triglycerides**
     - Normal: $< 150$
     - Borderline high: 150-199
     - High: 200-499
     - Very high: $\geq 500$

3. Identify patients at high risk based on clinical atherosclerotic disease. These conditions are considered CHD risk equivalent:
   - Clinical coronary heart disease (CHD)
   - Symptomatic carotid artery disease
   - Peripheral arterial disease
   - Abdominal aortic aneurysm
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- Diabetes is also regarded as "CHD risk equivalent"

4. Identify other major risk factors:
   - Cigarette smoking
   - Hypertension (BP ≥ 140/90 mm Hg or on antihypertensive medication)
   - Family history of premature CHD (CHD in male first degree relative < 55 years; CHD in female first degree relative < 65 years)
   - Age (men ≥ 45 years; women ≥ 55 years)
   - Low HDL cholesterol (< 40 mg/dL). **Note**: HDL cholesterol ≥ 60 mg/dL counts as a "negative" risk factor; its presence removes one risk factor from the total count.

5. If the patient does not have CHD or a CHD risk equivalent condition, and two or more risk factors are present (not including LDL cholesterol), the 10 year (short term) CHD risk should be calculated from Framingham risk tables. The Framingham risk can be determined using information at the [National Heart, Lung, and Blood Institute (NHLBI) web site](https://www.nhlbi.nih.gov/) in reference 1. The Framingham categories for 10 year risk for CHD are:
   - > 20% = CHD risk equivalent
   - 10% to 20%
   - < 10%

6. General guidelines for treatment are provided in the table below. Refer to the NHLBI web site (see reference 1) for the most recent detailed information on treatment recommendations and drug dosages.

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>LDL Goal</th>
<th>LDL Level to Initiate Therapeutic Lifestyle Changes</th>
<th>LDL Level to Consider Drug Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>High risk: CHD or CHD risk equivalent conditions (10 y risk &gt; 20%)</td>
<td>&lt; 100 mg/dL</td>
<td>≥ 100 mg/dL</td>
<td>≥ 100 mg/dL (&gt;100 mg/dL consider drug options)</td>
</tr>
<tr>
<td></td>
<td>optional goal &lt; 70 mg/dL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderately high risk: 2+ risk factors (10 y risk 10% to 20%)</td>
<td>&lt; 130 mg/dL</td>
<td>≥ 130 mg/dL</td>
<td>≥ 130 mg/dL (100-129 mg/dL consider drug options)</td>
</tr>
<tr>
<td></td>
<td>optional goal &lt; 100 mg/dL</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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7. High triglycerides should be managed to reach the LDL cholesterol goal. If triglycerides are ≥500 mg/dL after the LDL goal is met, add treatment to lower triglycerides to prevent pancreatitis. If triglycerides are ≥200 mg/dL after the LDL goal is met, add treatment to reach a non HDL goal (total cholesterol-HDL cholesterol) which is 30 mg/dL higher than the LDL cholesterol goals in the table above. Refer to the NHLBI website for more details.

8. A metabolic syndrome, independent of the LDL level, is defined as any three of the conditions in the table below. Patients with metabolic syndrome are at increased risk of CHD. Therapeutic lifestyle changes should be initiated to address obesity and inactivity. If no improvement occurs after three months, treatment of the lipid and non-lipid risk factors should be initiated. Refer to the NHLBI website for more details.

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>LDL Goal</th>
<th>LDL Level to Initiate Therapeutic Lifestyle Changes</th>
<th>LDL Level to Consider Drug Therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderate risk: 2+ risk factors (10 y risk &lt;10%)</td>
<td>&lt;130 mg/dL</td>
<td>≥130 mg/dL</td>
<td>≥160 mg/dL</td>
</tr>
<tr>
<td>Lower risk: 0-1 risk factor</td>
<td>&lt;160 mg/dL</td>
<td>≥160 mg/dL</td>
<td>≥190 mg/dL (160-189 mg/dL drug optional)</td>
</tr>
</tbody>
</table>

9. | Risk Factor       | Defining Level       |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdominal obesity</td>
<td>Waist circumference</td>
</tr>
<tr>
<td>Men</td>
<td>&gt;102 cm (&gt;40 inches)</td>
</tr>
<tr>
<td>Women</td>
<td>&gt;88 cm (&gt;35 inches)</td>
</tr>
<tr>
<td>Triglycerides</td>
<td>≥150 mg/dL</td>
</tr>
<tr>
<td>HDL cholesterol</td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>&lt;40 mg/dL</td>
</tr>
<tr>
<td>Women</td>
<td>&lt;50 mg/dL</td>
</tr>
<tr>
<td>Blood pressure</td>
<td>≥130/≥85 mm Hg</td>
</tr>
<tr>
<td>Fasting glucose</td>
<td>≥110 mg/dL</td>
</tr>
</tbody>
</table>
References