Clinical Practice Guidelines for Management of Cholesterol (Lipids)

The cholesterol guidelines are based on the National Cholesterol Education Program (NCEP) Third Report of the Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III or ATP III). This CPG is not intended to replace your clinical medical judgment. A physician’s medical decisions should be based on current medical knowledge and practices, taking into consideration the clinical circumstances of each individual patient.

Goals

To provide guidelines for:
- Screening of cholesterol in asymptomatic adults
- Management of primary and secondary prevention of coronary heart disease (CHD), stroke and peripheral vascular disease in adults
- Reduction of risk through lifestyle changes and pharmacotherapy
- Identification of risk factors through history and physical, including family history and laboratory testing/screening

Assessment

Identify risk factors through history and physical, including family history and laboratory testing/screening

- Major Risk Factors
  - Male ≥ 45 years of age
  - Female ≥ 55 years of age
  - Family history of premature coronary heart disease (CHD before 55 years of age in male first degree relative or before 65 years of age in female first degree relative)
  - Cigarette smoking
  - Hypertension confirmed by several blood pressure readings of ≥ 140/90 mmHg or on antihypertensive medications
  - Low (< 40 mg/dL) HDL cholesterol

- Risk Category  
  - CHD and CHD risk equivalents\(^{\dagger}\) < 100
  - Multiple (2+) risk factors* < 130
  - Zero to one risk factor < 160

\(^{\dagger}\)CHD risk equivalents comprise:
  - Other clinical forms of atherosclerotic disease (peripheral arterial disease, abdominal aortic aneurysm, and symptomatic carotid artery disease)
  - Diabetes - refer to the diabetes clinical practice guideline
  - Multiple risk factors that confer a 10-year risk \(^{\ddagger}\) for CHD > 20%

*: Risk factors listed above
\(^{\ddagger}\): 10 year risk assessment is based on Framingham scores for the probability of having a CHD event in 10 years based on risk factors.
• **Screening**
  Fasting lipoprotein profile (LDL cholesterol, total cholesterol, HDL cholesterol and triglycerides) measured in all adults 20 years of age and older at least once every five years. If testing can only be non-fasting, only total cholesterol and HDL will be usable. When testing is non-fasting, and total cholesterol is ≥ 200 mg/dL or HDL is < 40 mg/dL, a follow-up fasting lipoprotein profile is needed.

• **Fasting Lab Values**
  - **LDL Cholesterol**
    - < 100  Optimal
    - 100-129  Near optimal/above optimal
    - 130-159  Borderline high
    - 160-189  High
    - ≥ 190  Very high
  - **Total Cholesterol**
    - < 200  Desirable
    - 200-239  Borderline high
    - ≥ 240  High
  - **HDL Cholesterol**
    - < 40  Low
    - ≥ 60  High
  - **Triglycerides**
    - < 150  Normal
    - 150-199  Borderline high
    - 200-499  High
    - ≥ 500  Very high

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**Therapy***
Initiate multifaceted lifestyle approach to reduce risk of CHD.

• **Therapeutic Lifestyle Changes (TLC):**
  - **TLC diet:**
    - Saturated fat < 7% of calories, cholesterol < 200 mg/day
    - Consider increased viscous (soluble) fiber (10-25 g/day) and plant stanols/sterols (2g/day) as therapeutic options to enhance LDL lowering
  - **Weight management**
  - **Increased physical activity**

• **Pharmacotherapy**
  - Initiate drug therapy upon discharge from inpatient care for a major coronary event with LDL cholesterol level of ≥ 130 mg/dL within 24 hours of admission.
  - Consider adding plant stanols/sterols following 6 weeks of TLC diet therapy with goals not achieved. Drug therapy does not replace TLC regimen.
  - Intensify drug therapy following 6 weeks of plant stanols/sterols and increased fiber with goals not achieved. Again TLC regimen continues.
  - LDL ≥ 190 mg/dL often requires combinations of statin and bile acid sequestrant drug therapy.

• **Drug classifications**
  – HMG CoA reductase inhibitors (statins)
  – Bile acid sequestrants
  – Nicotinic acid
  – Fibric acids

• **Goals of pharmacotherapy**
  
<table>
<thead>
<tr>
<th>Risk Category</th>
<th>LDL goal</th>
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</thead>
<tbody>
<tr>
<td>CHD or CHD Risk Equivalents (10-year risk &gt; 20%)</td>
<td>&lt; 100 mg/dL</td>
</tr>
<tr>
<td>2+ Risk Factors (10-year risk &lt; 20%)</td>
<td>&lt; 130 mg/dL</td>
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<tr>
<td>0-1 Risk Factor</td>
<td>&lt; 160 mg/dL</td>
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• **Secondary targets of therapy**
  – Metabolic Syndrome
  – Elevated serum triglycerides
  – Other Dislipidemias

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**Patient Instructions**

- Incorporate lifestyle modifications and therapies into daily routines
- Maintain an active role in care and enlist aid of family members, community resources and public education programs to achieve goals
- Take all medications as prescribed, even if symptom free

**Specialist Involvement**

- Lipid specialist may be necessary for severe, complex or refractory lipid disorders