Screening for High Cholesterol in Children

The Pediatric CV Risk Reduction Initiative now recommends universal screening for high cholesterol in all children between 9 to 11 years of age and for high-risk children 2 to 9 years of age:

- Parent, grandparent, sibling, aunt, uncle < 55 years (male) or <65 (female) with: Coronary artery disease by angiography, Myocardial Infarction, Angina, Peripheral Vascular Disease, Stroke, Sudden Cardiac Death
- Parent with: Tchol > 240 mg/dl
- No Family History available, especially if child smokes, has high blood pressure, obesity, poor diet
- Child has diabetes, hypertension, BMI > 95th%ile or smoke cigarettes
- Child has a high risk medical condition (chronic renal disease, transplant recipient, Kawasaki with aneurysms)

Screening should start with: a non-fasting non-HDL-Cholesterol = Total Cholesterol – HDL-Cholesterol

- < 120 mg/dl is ideal
- 120 to 144 mg/dl requires a repeat in a few weeks
- 145 mg/dl requires a fasting complete lipid profile
- However, if only non-fasting Tchol is available, >200 mg/dl should prompt fasting lipid panel

Tips on obtaining an accurate Fasting Complete Lipid Profile:

- Draw after a 12-hour fast.
- Do not obtain during acute illness.
- Most labs calculate LDL = TChol - HDL - (TG/5).
- LDL is not accurate if TG > 300-400 mg/dl. A direct LDL test must be requested.

Evaluation & Therapy based on fasting lipid levels:

- Healthy diet and exercise for all children regardless of lipid levels
- Evaluate for secondary causes (thorough history, physical, usually no advanced labs needed) if:

<table>
<thead>
<tr>
<th>Lipid</th>
<th>Single Fasting Level</th>
<th>Average of Multiple Fasting Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>TChol</td>
<td>&gt;240</td>
<td>&gt;200</td>
</tr>
<tr>
<td>LDL</td>
<td>&gt;160</td>
<td>&gt;130</td>
</tr>
<tr>
<td>HDL</td>
<td>&lt;30</td>
<td>&lt;35</td>
</tr>
<tr>
<td>TG</td>
<td>&gt;250</td>
<td>&gt;100 (&lt;10 yrs) or &gt;130 (over 10 yrs)</td>
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</tbody>
</table>

- After 6 months, if lifestyle changes are ineffective, drug therapy for children over 10 years of age for:
  - LDL > 190
  - LDL >160 & positive Family History of early CAD or >2 other CV risk factors in the child.
  - LDL > 130 with Diabetes, Chronic Kidney Disease, Heart Transplant, Post-Kawasaki’s Syndrome with coronary aneurysm.
  - TG > 200-499 mg/dL

The CCHMC Lipid Center can:
Rule out secondary dyslipidemia and perform advanced lipid testing.
Evaluate diet with computer analysis of 3-day diet records.
Initiate Therapeutic Lifestyle Changes including consultation with dieticians, behavioral psychologists with expertise in therapeutic lifestyle changes and exercise physiologists.

**Cincinnati Children’s Hospital Lipid Clinic Referral Number: 513-636-0135**