# REVIEW 1: ASSESSMENT AND TREATMENT OF DYSLIPIDEMIA IN ADOLESCENTS

## PROTOCOL

<table>
<thead>
<tr>
<th>ASSESSMENT</th>
<th>TREATMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PRIMARY OBJECTIVE</strong></td>
<td>• To determine the diagnostic accuracy of tests for assessment of dyslipidemia in adolescents, in a) the general population and b) overweight or obese adolescents.</td>
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<tr>
<td></td>
<td>• To assess the effectiveness of interventions (lifestyle and pharmacotherapy) for treatment of dyslipidemia in adolescents, in a) the general population and b) overweight or obese adolescents.</td>
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<tr>
<td><strong>SECONDARY OBJECTIVES</strong></td>
<td>• To assess the acceptability of different diagnostic tests for assessment of dyslipidemia in adolescents.</td>
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<td>• To assess the costs associated with different diagnostic tests for assessment of dyslipidemia in adolescents.</td>
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<td>• To identify any adverse effects of interventions for treatment of dyslipidemia.</td>
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<tr>
<td><strong>TARGET CONDITION BEING DIAGNOSED</strong></td>
<td>Dyslipidemia or hypercholesterolemia defined using a specified reference standard</td>
</tr>
<tr>
<td><strong>TESTS</strong></td>
<td>Any diagnostic test, e.g. Non-fasting or fasting lipids and/or lipoproteins, genetic markers, other biomarkers</td>
</tr>
<tr>
<td></td>
<td>o single or multiple readings,</td>
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<tr>
<td></td>
<td>o alone, in combination, or in combination with other risk factors (family history, anthropometric measure)</td>
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<tr>
<td><strong>PRIOR TESTS</strong></td>
<td>Population may or may not have had previous testing, e.g. clinical history and examination</td>
</tr>
<tr>
<td><strong>TYPES OF STUDIES</strong></td>
<td>All study designs except case series reports</td>
</tr>
<tr>
<td></td>
<td>Randomised controlled trials</td>
</tr>
<tr>
<td><strong>POPULATION</strong></td>
<td>Adolescents, mean age 12-19 years. General population, or clinical setting.</td>
</tr>
<tr>
<td></td>
<td>Adolescents, mean age 12-19 years. General population or overweight or obese population.</td>
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<tr>
<td><strong>INTERVENTIONS</strong></td>
<td>Any test or combination of tests for assessment of dyslipidemia.</td>
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<tr>
<td></td>
<td>Lifestyle interventions, pharmacotherapy or combined interventions for dyslipidemia.</td>
</tr>
<tr>
<td><strong>PRIMARY OUTCOMES</strong></td>
<td>• Diagnostic accuracy of tests or combination of tests for assessing dyslipidemia in adolescents (sensitivity, specificity, PPV, NPV in assessing specified reference standard).</td>
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<tr>
<td></td>
<td>• Effectiveness of lifestyle interventions, pharmacotherapy or combined interventions for treating dyslipidemia in adolescents:</td>
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<tr>
<td></td>
<td>o Short-term: resolution of dyslipidemia in adolescence</td>
</tr>
<tr>
<td></td>
<td>o Long-term: resolution of dyslipidemia or prevention of CV outcomes in adulthood</td>
</tr>
<tr>
<td><strong>SECONDARY OUTCOMES</strong></td>
<td>• Costs of test.</td>
</tr>
<tr>
<td></td>
<td>• Adverse effects of interventions.</td>
</tr>
<tr>
<td><strong>SEARCH STRATEGY</strong></td>
<td></td>
</tr>
<tr>
<td>Outcome selected on basis of different criteria</td>
<td>care, enhanced usual care, placebo or otherwise specified</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>----------------------------------------------------------</td>
</tr>
<tr>
<td>eligible</td>
<td>Adolescent population, mean age 12-19 years</td>
</tr>
<tr>
<td>Study assesses diagnostic accuracy of tests for assessing dyslipidemia</td>
<td>Lipids specified as primary or co-primary outcome of study</td>
</tr>
<tr>
<td>English language publication</td>
<td>English language publication</td>
</tr>
<tr>
<td>Any country setting</td>
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</tr>
</tbody>
</table>

**EXCLUSION CRITERIA**

- Familial hypercholesterolemia
- School based intervention
- Lipids not specified as primary or co-primary outcome

**SEARCH TERMS (MEDLINE)**

**Dyslipidemia:**
1. Exp Hyperlipidemia/
2. Hyperlipid$.tw.
3. Exp Lipids/
4. Exp Cholesterol/
5. Exp Cholesterol, HDL/
6. Exp Cholesterol, LDL/
7. Exp Triglycerides/
8. Dyslipid$.tw.
9. Or/1-8 *(results: 1,005,499)*

**Population:**
10. exp Adolescent/
11. child$.tw.
12. adolescen$.tw.
13. teen$.tw.
15. exp Pediatrics/
16. youth.tw.
17. young adult.tw.
18. Or/10-17 *(results: 2,430,009)*

**Intervention:**
19. exp behavior therapy/
20. (behavior adj (therapy or modification)).tw.
21. Exp lifestyle/
22. (Lifestyle adj2 change).tw
23. Lifestyle intervention.tw
24. Exp diet, fat-restricted/
25. Exp diet, reducing/
26. Diet$ intervention.tw
27. Exp Exercise/
28. Exp exercise therapy/
29. (exercise or (physical adj therapy) or fitness).tw
30. Exp health promotion/
31. Exp health education/
32. (program or programs or programme$ or intervention$).tw
33. Or/19-32
34. exp statins/
35. statin$.tw.
36. atorvastatin.tw
37. fluvastatin.tw
38. pravastatin.tw
39. rosuvastatin.tw
40. simvastatin.tw
41. bile acid sequestrant$.tw
42. colestyramine.tw
43. colesvelam.tw
44. colestipol.tw
45. fibrate$.tw
46. nicotinic acid.tw
47. ezetimibe.tw

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<th>Quality Assessment</th>
<th>Risk of bias (low, high or unclear) assessed using quality criteria recommended by Cochrane Diagnostic Test Accuracy Working Group.</th>
<th>Risk of bias (low, high or unclear) assessed using Cochrane criteria in following domains: selection, performance, detection, attrition, reporting.</th>
</tr>
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<tbody>
<tr>
<td>Study Selection</td>
<td>Three stage: 1) initial assessment based on title (principal reviewer); 2) assessment based on abstract (double screening, two independent reviewers); 3) assessment of full text using screening and data extraction form (double screening, two independent reviewers).</td>
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</tr>
<tr>
<td>Data Extraction</td>
<td>Data extraction by principal reviewer. Extracted data checked by second reviewer.</td>
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<td>Data Synthesis</td>
<td>Feasibility of meta-analysis tbd on review of initial search</td>
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