

# Abnormal lipids

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## Rationale

Hypercholesterolemia is a common and important modifiable risk factor for ischemic heart disease, cerebrovascular disease, and peripheral vascular disease. Determination of levels is usually based on concomitant risk factors.

## Causal Conditions

(list not exhaustive)

- Hypercholesteremia (elevated low-density lipoprotein level, lipoprotein [a])
  - a. Primary causes
    - Familial combined hyperlipidemia
    - Polygenic
    - Familial hypercholesterolemia
  - b. Secondary causes
    - Endocrine (e.g., diabetes, hypothyroidism)
    - Cholestatic liver disease
    - Nephrotic syndrome (e.g., chronic kidney disease)
    - Other
      - a. Tobacco cigarettes
      - b. Obesity
      - c. Drugs (e.g., steroids)

- Hypertriglyceridemia
  - a. Primary causes (familial hypertriglyceridemia)
  - b. Secondary causes
    - Obesity
    - Diabetes
    - Nephrotic syndrome (e.g., chronic kidney disease)
    - Drugs (e.g., estrogen)
    - Alcohol
- Low high-density lipoprotein level
  - a. Primary
  - b. Secondary
    - Obesity
    - Drugs (e.g., anabolic steroids)
    - Metabolic syndrome

## Key Objectives

Given patients with abnormal serum lipids, the candidate will diagnose the cause, severity, and complications. In particular, the candidate will identify those patients who would benefit from serum cholesterol reduction, and determine whether both primary and secondary prevention measures are needed.

## Enabling Objectives

Given patients with abnormal serum lipids, the candidate will

- list and interpret critical clinical findings, including
  - a. features of a history and physical examination aimed at identifying patients with remediable causes for their lipid abnormalities (e.g., hypothyroidism); and
  - b. identification of patients who are at highest risk for ischemic heart disease;
- list and interpret critical investigations, including further laboratory testing to identify patients with remediable causes for their lipid abnormalities; and

- construct an effective initial management plan, including
  - a. recommending lifestyle modification and pharmacologic therapy as appropriate;
  - b. discussing risks and benefits of primary versus secondary prophylaxis with lipid-lowering drugs; and
  - c. identifying patients in need of specialized care.