Implementing the CV Risk Calculator Within the Patient Visit Workflow

The American College of Cardiology/American Heart Association CV Risk Calculator
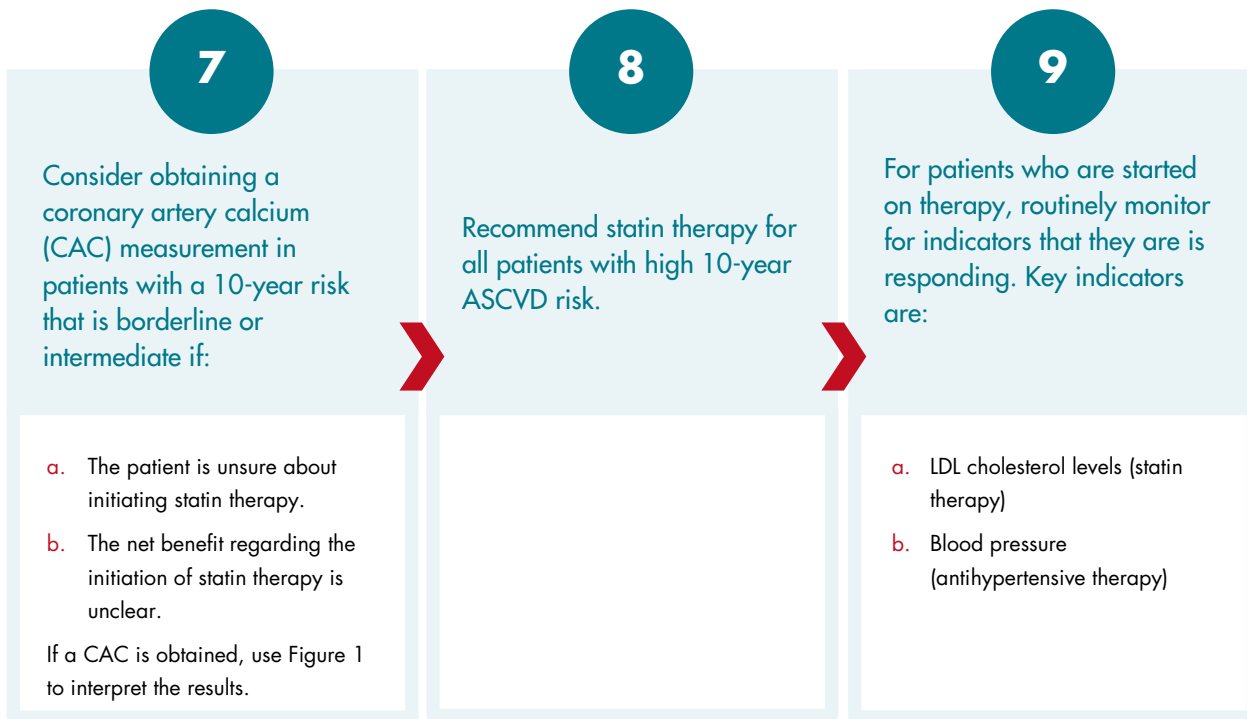

The purpose of the CV risk calculator is to estimate patients' 10-year atherosclerotic cardiovascular disease (ASCVD) risk at their initial clinic visit to establish a reference point.

The information required to estimate ASCVD risk includes age, sex, race, total cholesterol, LDL cholesterol, HDL cholesterol, systolic blood pressure, use of lipid-lowering and blood pressure medications, diabetes status, smoking status and aspirin therapy.

The Recommended Patient Visit Workflow

1

Conduct a routine history and physical examination. Be sure to include:

a. Health behavior assessments (for example eating pattern, physical activity and smoking)

b. Assessment of physiological risk factors, including blood pressure, lipid levels and diabetes status

2

Use the calculator to determine 10-year ASCVD risk for individuals 40–75 years of age and lifetime ASCVD risk for those 20–59 years of age. The 10-year risk should be classified as:

a. Low if <5%

b. Borderline if 5% to <7.5%.

c. Intermediate if 7.5% to <20%

d. High if ≥20%

3

Consider modifying the risk classification based on risk-enhancing factors. Examples include:

a. Family history of premature ASCVD

b. Metabolic syndrome

c. Chronic kidney disease

d. Chronic inflammatory conditions

e. Primary hypercholesterolemia

f. High-risk race/ethnicity

g. Specific lipid/biomarkers associated with increased ASCVD risk

h. History of premature menopause or pregnancy-associated conditions such as preeclampsia, which are known to increase future ASCVD risk

4

Discuss the 10-year and lifetime ASCVD risks with the patient. Be sure to cover:

a. Why it is important to control risk factors and minimize risk

b. How drug therapy can provide a net benefit

c. Risk associated with drug therapy

d. The patient's therapy preferences

5

Based on the patient's preferences, recommend specific lifestyle modifications. Examples include:

a. Weight loss

b. Dietary changes

c. Smoking cessation

d. Increased physical activity

6

If necessary, discuss how best to manage blood pressure and the goals of blood pressure therapy.

7

Consider obtaining a coronary artery calcium (CAC) measurement in patients with a 10-year risk that is borderline or intermediate if:

a. The patient is unsure about initiating statin therapy.

b. The net benefit regarding the initiation of statin therapy is unclear.

If a CAC is obtained, use Figure 1 to interpret the results.

8

Recommend statin therapy for all patients with high 10-year ASCVD risk.

9

For patients who are started on therapy, routinely monitor for indicators that they are is responding. Key indicators are:

a. LDL cholesterol levels (statin therapy)

b. Blood pressure (antihypertensive therapy)
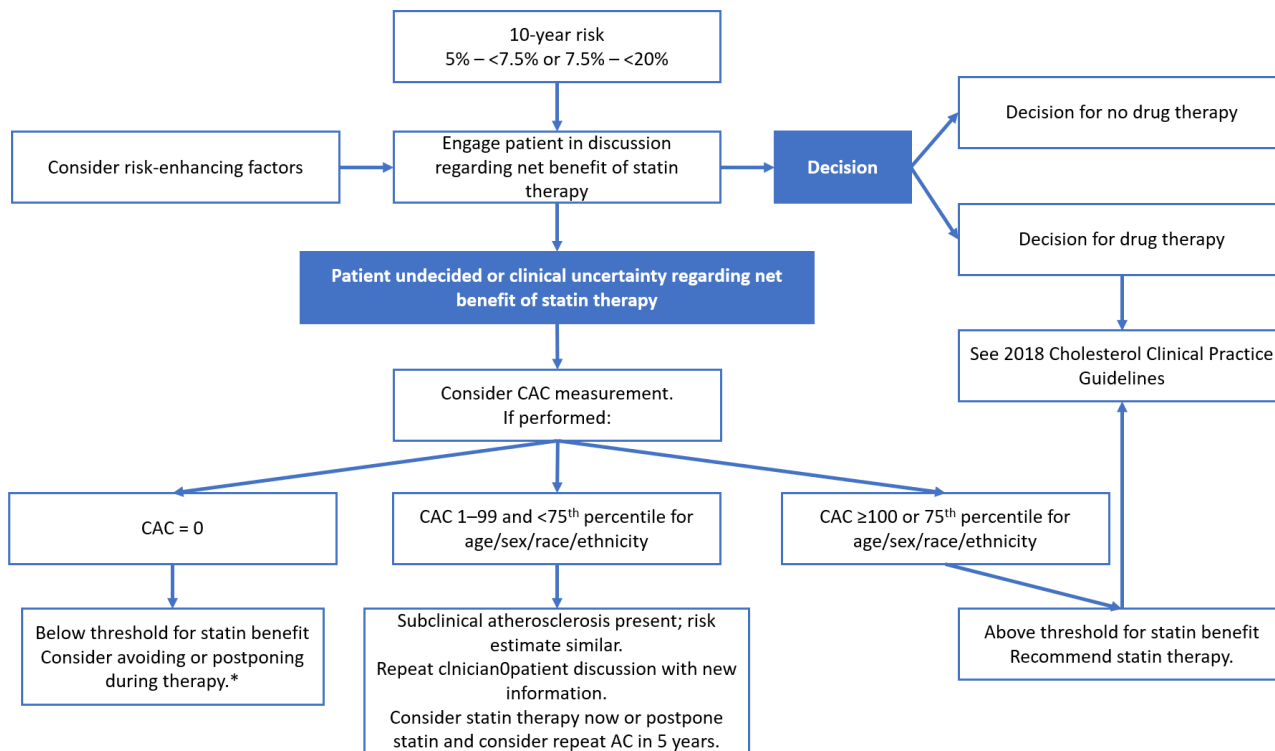
Algorithm of Clinical Approach

Figure 1: Algorithm of clinical approach to incorporate CAC measurement in risk assessment for borderline- and intermediate-risk patients. *Clinicians and patients may not wish to postpone therapy in patients with a CAC score of 0 and diabetes, heavy current cigarette smoking or strong family history of premature ASCVD. Blue shading indicates decision node.

Flowchart contents:

- 10-year risk 5% – <7.5% or 7.5% – <20%
- Consider risk-enhancing factors
- Engage patient in discussion regarding net benefit of statin therapy
- Decision → Decision for no drug therapy
- Decision → Decision for drug therapy → See 2018 Cholesterol Clinical Practice Guidelines
- Patient undecided or clinical uncertainty regarding net benefit of statin therapy
- Consider CAC measurement. If performed:
  - CAC = 0 → Below threshold for statin benefit Consider avoiding or postponing during therapy.*
  - CAC 1–99 and <75th percentile for age/sex/race/ethnicity → Subclinical atherosclerosis present; risk estimate similar. Repeat clnician0patient discussion with new information. Consider statin therapy now or postpone statin and consider repeat AC in 5 years.
  - CAC ≥100 or 75th percentile for age/sex/race/ethnicity → Above threshold for statin benefit Recommend statin therapy.

Implementing the ASCVD Risk Calculator During Patient Visits

Some electronic medical record (EMR) systems have a feature that will automatically calculate a patient's ASCVD risk. Providers who do not have access to an EMR with a score auto-calculation feature can either:

Download an app: ASCVD Risk Estimator Plus - American College of Cardiology (acc.org)

Use this website: 2018 Prevention Guidelines Tool CV Risk Calculator (heart.org)

Reference

Lloyd-Jones DM, Braun LT, Ndumele CE, et al. Use of risk assessment tools to guide decision-making in the primary prevention of atherosclerotic cardiovascular disease: a special report from the American Heart Association and American College of Cardiology. J Am Coll Cardiol 2019;73:3153–3167

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