

Guideline Essentials:

ADAPTED FROM:

2026

ACC/AHA/AACVPR/ABC/ACPM/ADA/APhA/ASPC/NLA/PCNA

Guideline on the Management of Dyslipidemia



Lauren Eberly, MD, MPH
Staff Cardiologist
Gallup Indian Medical Center
Indian Health Service



AHA Clinical PPTX

CLINICAL PRACTICE GUIDELINES

2026

ACC/AHA/AACVPR/ABC/ACPM/ADA/AGS/APhA/ASPC/NLA/ Guideline on the Management of Dyslipidemia: A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines

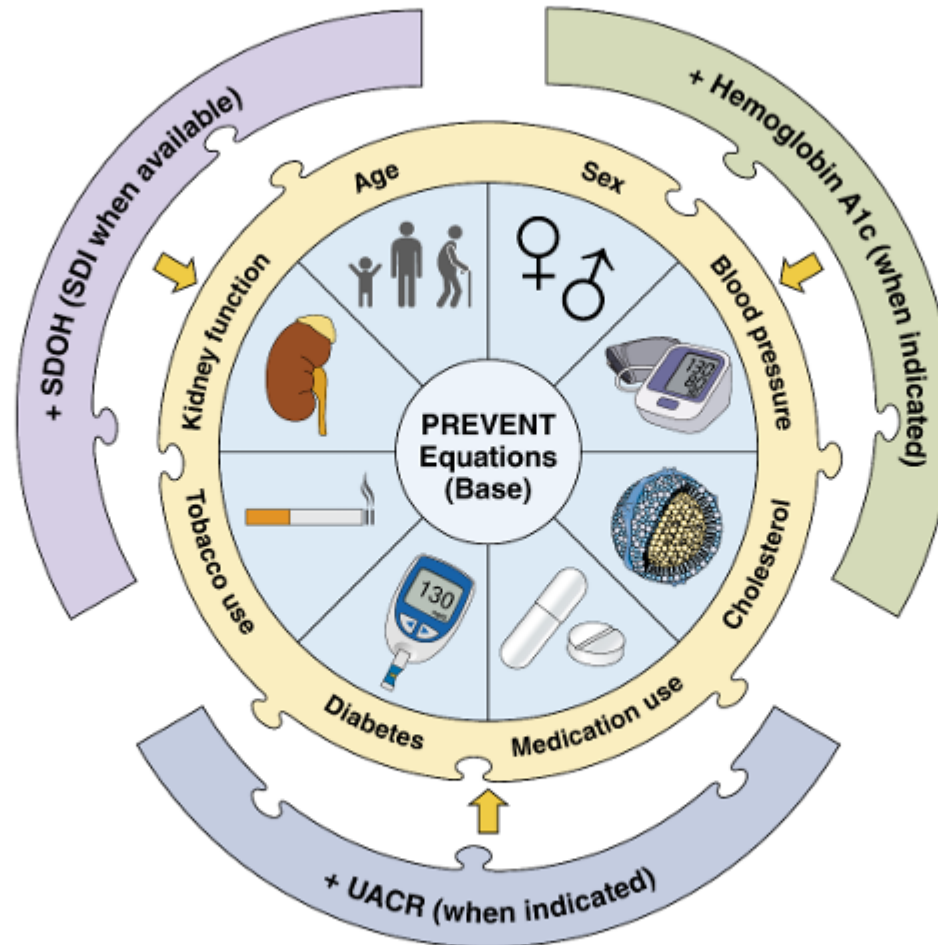
Writing Committee Members, Roger S. Blumenthal, MD, FACC, FAHA, FASPC, FNLA, Chair, Pamela B. Morris, MD, FACC, FAHA, FASPC, FNLA, Vice Chair, Mario Gaudino, MD, FAHA, FACC, JC Liaison, Heather M. Johnson, MD, MS, FAHA, FACC, FASPC, JC Liaison, Timothy S. Anderson, MD, MAS, Vera A. Bittner, MD, MSPH, FACC, FAHA, MNLA, MAACVPR, Ron Blankstein, MD, FACC, LaPrincess C. Brewer, MD, MPH, FACC, FAHA, Leslie Cho, MD, FACC, Sarah D. de Ferranti, MD, MPH, FAHA, Eugenia Gianos, MD, FACC, FAHA, FNLA, Ty J. Gluckman, MD, MHA, FACC, FAHA, FASPC, Kristen F. Gradney, MHA, RDN, LDN, Ijeoma Isiadinso, MD, MPH, FACC, Donald M. Lloyd-Jones, MD, ScM, FACC, FAHA, FASPC, Joel C. Marrs, PharmD, MPH, FAHA, FNLA, Seth S. Martin, MD, MHS, FACC, FAHA, FASPC, Kellie H. McLain, ANP-BC, CLS, FNLA, AACC, Laxmi S. Mehta, MD, FACC, FAHA, FNLA, Samia Mora, MD, MHS, FACC, FAHA, Wudeneh M. Mulugeta, MD, MPH, MS, FACP, FACPM, Pradeep Natarajan, MD, MMSCFACC, FAHA, Ann Marie Navar, MD, PhD, FAHA, FACC, FASPC, Carl E. Orringer, MD, FACC, MNLA, Tamar S. Polonsky, MD, MSCI, Harmony R. Reynolds, MD, FACC, FAHA, Joseph J. Saseen, PharmD, MNLA, FACC, FAHA, Michael D. Shapiro, DO, MPH, FACC, FAHA, FASPC, FNLA, Daniel E. Soffer, MD, MNLA, FACP, Sheila A. Tynes, MHA, PMP, Chloé D. Villavaso, MN, APRN, ACNS-BC, FPCNA, AACC, Salim S. Virani, MD, PhD, FACC, FASPC, and John T. Wilkins, MD, MSc, FAHA

Primary Prevention

*Take home message: Use PREVENT for Risk Assessment

- Use the more contemporary American Heart Association **Predicting Risk of cardiovascular disease EVENTS (PREVENT.) equations** instead of the older Pooled Cohort Equations **for 10 and 30-year risk assessment to guide lipid-lowering therapy in primary prevention in adults aged 30 to 79 years.**

Predicting Risk of CVD **EVENTs** (**PREVENT**) Base Model and Additional Equations



- Contemporary data from more than 6.5 million **diverse** U.S. adults
- Can estimate 10-year and 30-year risk for total cardiovascular disease in people from **ages 30-79** without CVD
- PREVENT includes kidney and metabolic health factors = **more comprehensive and precise estimation of risk**
- Uses clinical information to estimate CVD risk.
 - 3 optional predictors: urine albumin-creatinine ratio (UACR), hemoglobin A1c (HbA1c), and social deprivation index (SDI), can further personalize risk estimates

Abbreviations: CVD indicates cardiovascular disease; PREVENT, Predicting Risk of CVD Events; SDI, social deprivation index; SDOH, social determinants of health; and UACR urine albumin-to-creatinine ratio.

Khan, S.S. et al., Novel Prediction Equations for Absolute Risk Assessment of Total Cardiovascular Disease Incorporating Cardiovascular-Kidney-Metabolic Health: A Scientific Statement From the American Heart Association. 2023. *Circulation*.

The American Heart Association PREVENT™ Online Calculator

About the PREVENT Equations [Online Calculator](#)

CVD **ASCVD** Heart Failure

Sex*
☒ Male ☐ Female

Age (years)*
30-79

SBP (mmHg)*
90-200

Total Cholesterol (mg/dL)*
130-320

HDL Cholesterol (mg/dL)*
20-100

eGFR (mL/min/1.73m²)*
15-140

BMI (kg/m²)*
18.5-39.9

Diabetes
Any history of diabetes.
☒ No ☐ Yes

Current Smoking
Any cigarette use within the last 30 days
☒ No ☐ Yes

Lipid-lowering medication
Current use of statin medication to lower cholesterol
☒ No ☐ Yes

Anti-hypertensive medication
Current use of any medication for hypertension
☒ No ☐ Yes

The following three predictors are optional for further personalization of risk assessment. When they are clinically indicated or available,
If available or indicated, select "Yes" and enter the value.

UACR (mg/g)
UACR is clinically indicated for individuals with chronic kidney disease, diabetes, or hypertension
☒ No ☐ Yes

HbA1C
HbA1c is clinically indicated for individuals with diabetes, prediabetes, overweight, or obesity, or those with history of gestational diabetes
☒ No ☐ Yes

Zip Code
valid 5-digit zip code is needed to estimate social deprivation index [SDI]
☒ No ☐ Yes

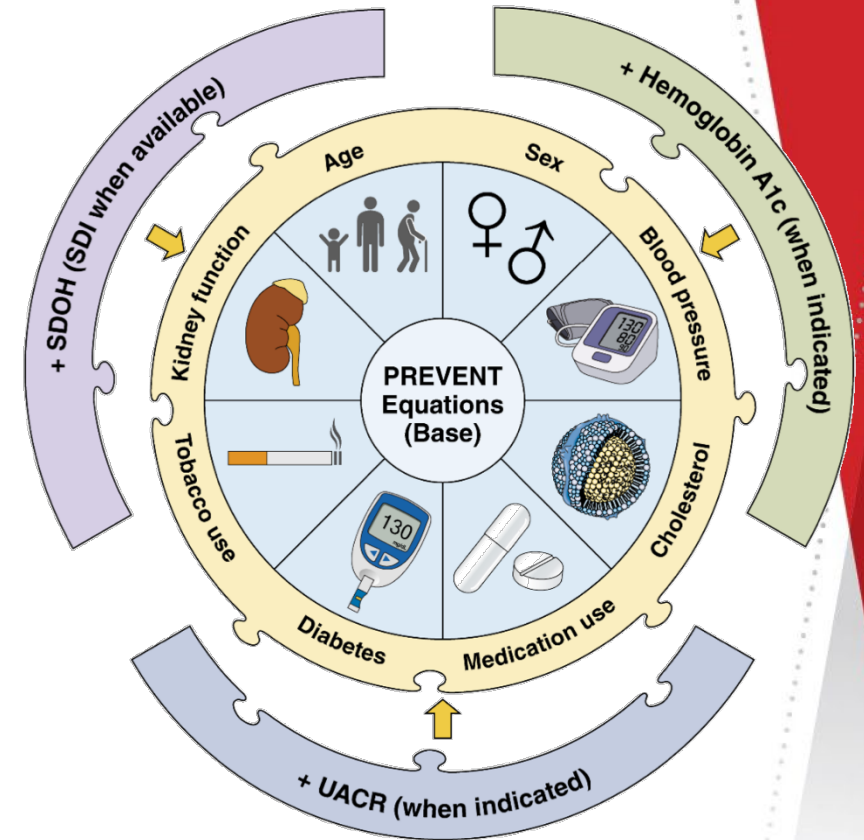


Calculate Reset

PREVENT-ASCVD Risk Calculator

COR	RECOMMENDATIONS
1	PREVENT-ASCVD equations should be used for risk assessment in adults aged 30-79 years without ASCVD or subclinical atherosclerosis, with LDL-C <190mg/dL.

Approximate Equivalent Ranges of 10-yr ASCVD Risk Estimates		
RISK	POOLED COHORT EQUATIONS	PREVENT-ASCVD
Low	<5%	<3%
Borderline	5 - <7.5%	3 to <5%
Intermediate	7.5 - <20%	5 to <10%
High	≥20%	≥10%

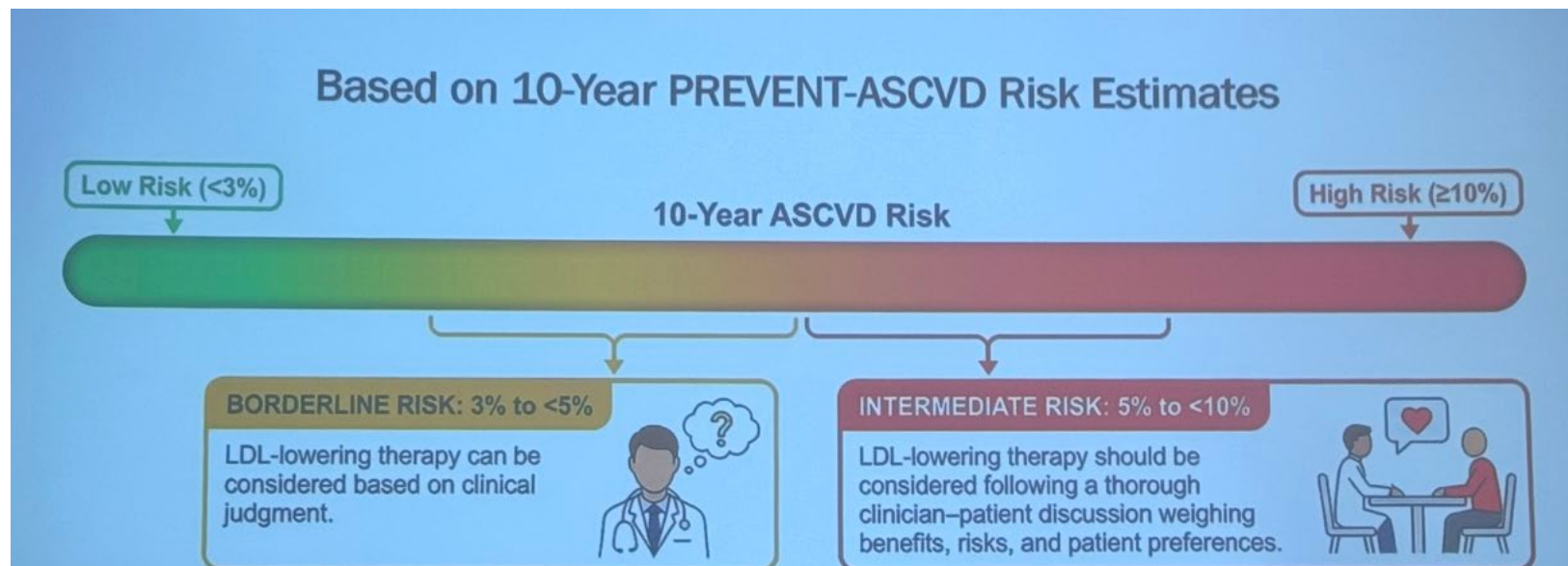


***Make sure to use PREVENT FOR ASCVD (not total CVD)**

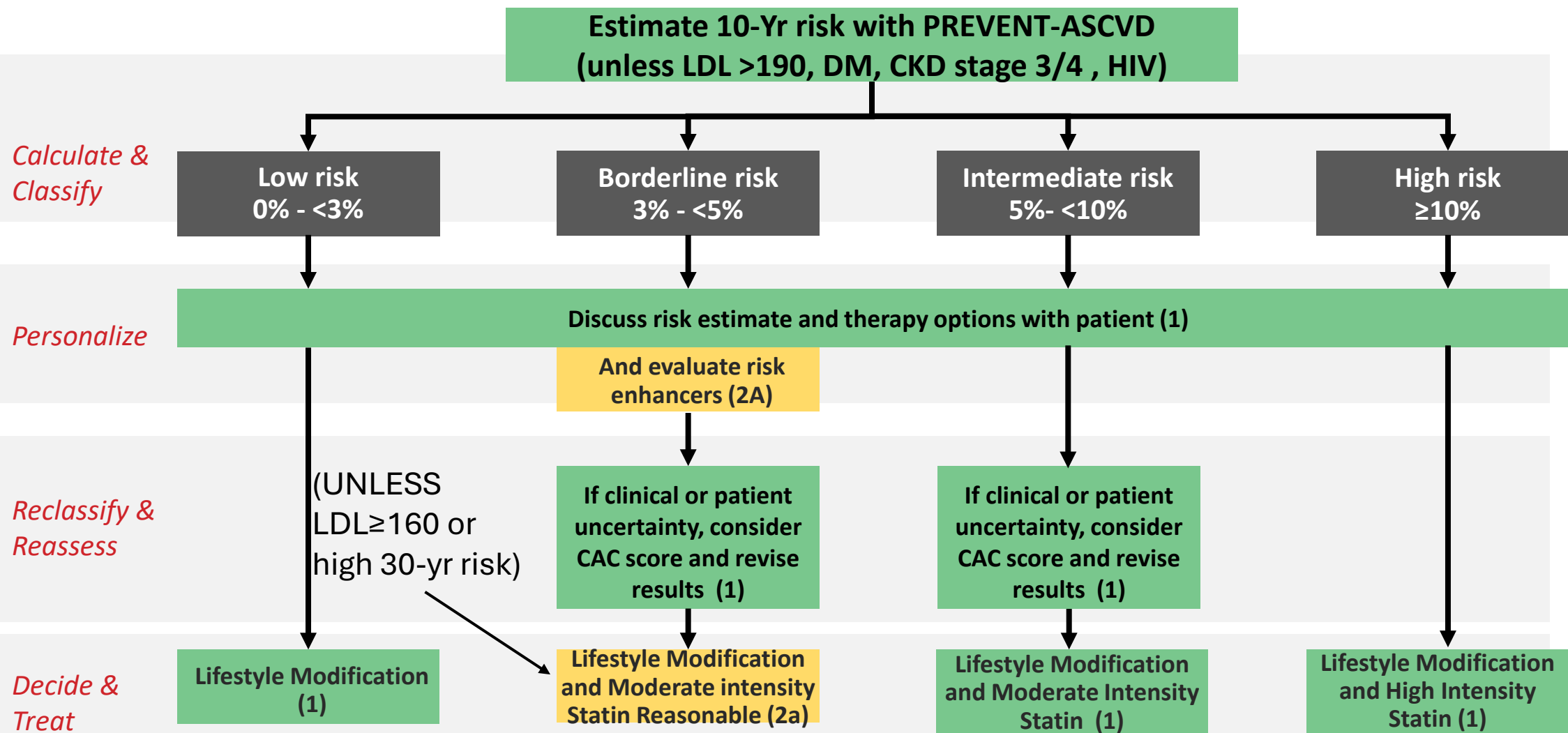
***If LDL ≥190 => will start LLT (see severe hyperlipidemia)**

*Take home message: Risk guided decision making

- LDL-lowering therapy can be considered in adults for primary prevention of ASCVD with a 10-year PREVENT-ASCVD risk estimate of 3% to <5% (borderline risk) and should be considered for those at 5% to <10% (intermediate risk) 10-year risk after a clinician–patient discussion.
- If decision uncertain => Coronary Artery Calcium (CAC)!



Calculate, Personalize, Reclassify (CPR) Framework



Risk Enhancers (consider for borderline risk)

- History of premature ASCVD in a parent or sibling (onset age <55 y for men, <65 y for women)
- Higher risk ancestry (eg, South Asian)
- Chronic inflammatory diseases (eg, systemic lupus, rheumatoid arthritis, advanced psoriasis, inflammatory arthritis)
- Lp(a) ≥ 125 nmol/L or ≥ 50 mg/dL
- hsCRP ≥ 2 mg/L on >1 occasion (if measured)
- TG persistently ≥ 175 mg/dL (2 mmol/L) (if nonfasting) and ≥ 150 mg/dL (1.7 mmol/L) (if fasting)
- CKM syndrome
- Non-HDL-C ≥ 190 -219 mg/dL or apoB ≥ 120 mg/dL
- Reproductive risk markers (premature menopause, preeclampsia, gestational diabetes, gestational hypertension, preterm delivery)

COR	RECOMMENDATIONS
2a	In adults without ASCVD with a borderline 10-year ASCVD risk estimate (3% to <5%) by the PREVENT-ASCVD equations, consideration of risk-enhancers is reasonable to personalize risk assessment and the potential benefit of initiating LLT as an adjunct to lifestyle management to reduce ASCVD risk.
2a	In adults without ASCVD with a borderline 10-year ASCVD risk estimate (3% to <5%) by the PREVENT-ASCVD equations, if high-sensitivity C-reactive protein (hsCRP) is measured and is ≥ 2 mg/L on 2 successive occasions with no identifiable underlying cause of hsCRP elevation, high-intensity statin therapy can be useful to reduce the risk of ASCVD events.

****If present, risk enhancers favor statin therapy in borderline (as well as intermediate risk) individuals**
**** Remember those with persistently high CRP ≥ 2 mg/L on 2 occasion should be treated (JUPITER TRIAL)**

***Take home message: LDL goals are back with nonHDL goals!**

- **LDL-C and non-HDL-C treatment goals are back to guide lipid-lowering therapy. Reduction in LDL-C remains a priority for all individuals as well, with goal for % reduction depending on the level of ASCVD risk.**
 - **(Non-HDL goal = LDL goal + 30)**

Primary Prevention 30-79 Years Without ASCVD

Low-Intermediate 10-y Risk (<3%-10%)	
COR	RECOMMENDATIONS
1	Low risk (<3%) + LDL<160 mg/dL → Health behavior counseling.
2a	Low risk + LDL 160–189 mg/dL or high 30-yr risk → Reasonable to start moderate statin. Goal: ≥30% LDL-C reduction; LDL-C<100 mg/dL and non-HDL-C <130 mg/dL
2a	Borderline risk (3%-<5%) → Moderate statin reasonable. Goal: ≥30% LDL-C reduction; LDL-C<100 mg/dL and non-HDL-C <130 mg/dL
1	Intermediate risk (5%-<10%) → Start moderate- to high-intensity statin.
2a	AND Goal: LDL-C<100 mg/dL and non-HDL-C <130 mg/dL

NOT HIGH RISK, GOAL LDL-C <100 mg/dL, and non-HDL C <130

Abbreviations: ASCVD indicates atherosclerotic cardiovascular disease; LDL-C, low-density lipoprotein cholesterol; HDL-C, high-density lipoprotein cholesterol; and non-HDL-C, non-high-density lipoprotein cholesterol.

Blumenthal, R.S., Morris, P.B., et al. 2026 ACC/AHA Guideline on the Management of Dyslipidemia. *Circulation*.

Primary Prevention 30-79 Years Without ASCVD (continued)



High 10-y Risk ($\geq 10\%$)	
COR	RECOMMENDATIONS
1	Start high-intensity statin.
2a	Goal: $\geq 50\%$ LDL-C reduction; LDL-C < 70 mg/dL and non-HDL-C < 100 mg/dL
2a	If LDL-C and non-HDL-C goals still not achieved, add ezetimibe.
2b	If LDL-C and non-HDL-C goals still not achieved, add PCSK9 mAb or bempedoic acid.

High-risk: Goal LDL-c < 70 , reduction by $\geq 50\%$, and non-HDLC of < 100

Abbreviations: ASCVD indicates atherosclerotic cardiovascular disease; LDL-C, low-density lipoprotein cholesterol; HDL-C, high-density lipoprotein cholesterol; non-HDL-C, non-high-density lipoprotein cholesterol; and PCSK9, proprotein convertase subtilisin/kexin type 9.

Statin Intensity

- High-intensity statins (>50% lower)=
 - Atorvastatin 80mg, 40mg
 - Rosuvastatin 20mg, 40mg
- Moderate-Intensity (30-49% lowering)
 - Atorvastatin 10-20mg
 - Rosuvastatin 5-10mg
 - While simvastatin 20-40 is, I don't typically use due to drug interactions and side effects
- Rosuvastatin =Preferred statin due to more potent and lower side effects

PREFERRED STATINS BY INTENSITY

HIGH INTENSITY (>50% LDL lowering)

Atorvastatin 80mg DAILY

Atorvastatin 40mg DAILY

Rosuvastatin 40mg DAILY

Rosuvastatin 20mg DAILY

MODERATE INTENSITY (30 to 49% LDL lowering)

Atorvastatin 20mg DAILY

Atorvastatin 10mg DAILY

Rosuvastatin 10mg DAILY

Rosuvastatin 5mg DAILY

Simvastatin 40mg QHS

Simvastatin 20mg QHS

LOW INTENSITY (<30% LDL lowering)

Atorvastatin 5mg DAILY

Simvastatin 10mg QHS

OTHER ANTILIPIDEMICS

Colestipol 1gm TID

Ezetimibe 10mg DAILY

Fenofibrate... *RESTRICTED*

Gemfibrozil 600mg BID

Lovastatin (Mevacor)...

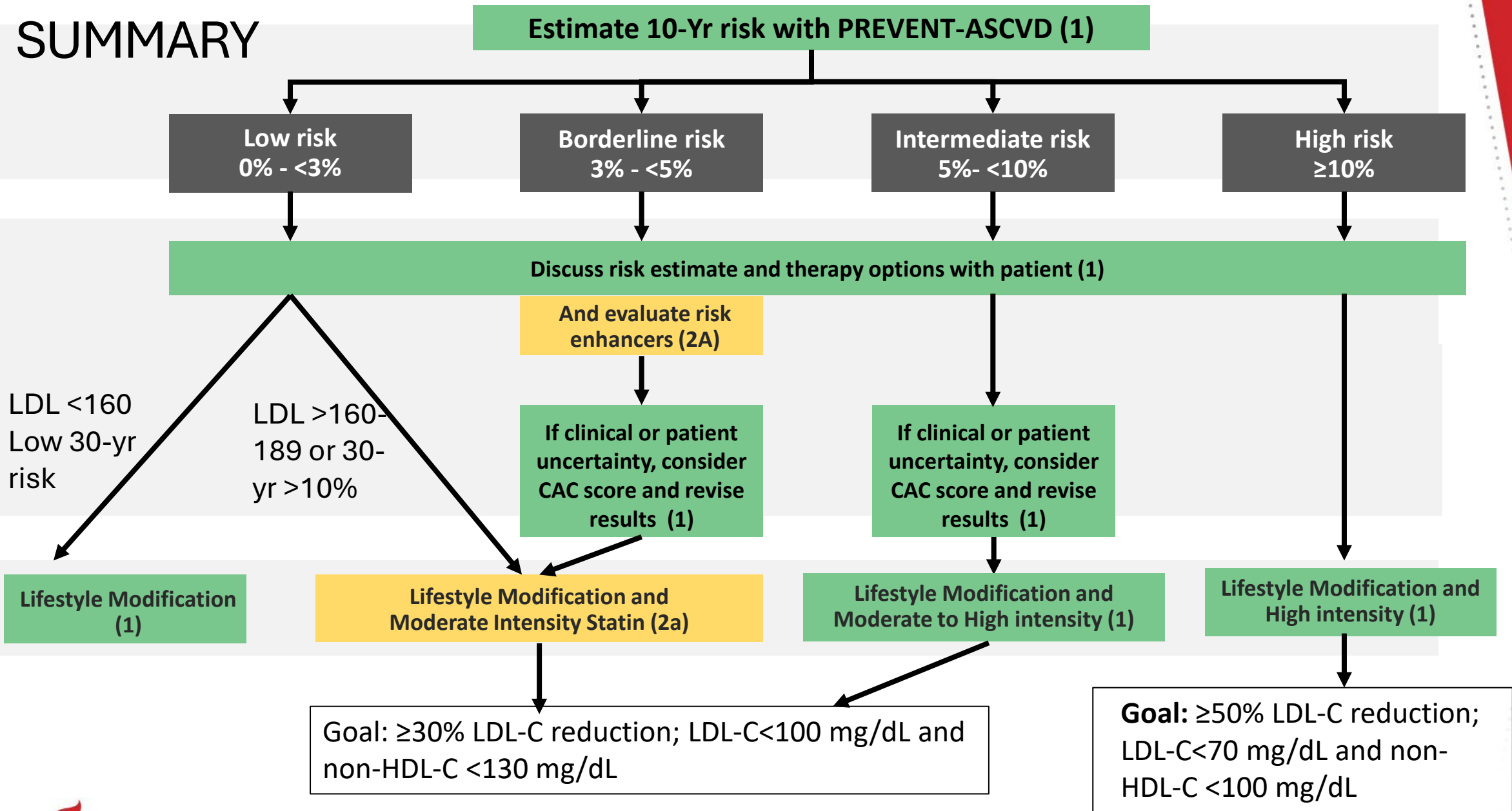
Niacin...

Pravastatin (Pravacol)...

Side note on non-statin LLT

Ezetimibe	Blocks NPC1L1 to inhibit intestinal and biliary sterol absorption, increases LDL receptor expression on hepatocytes	Oral 10 mg once daily Mild GI side effects, myalgias, fatigue (RARE)	Reductions in CV events in combination with statin for prevention 18% reduction of LDL (25% incremental reduction with statin) Usually, 1 st line add on therapy for statin for additional lowering
PSCK9 inhibitors	Monoclonal antibody, binds to PSCK9 and decreases degradation of LDL receptors	Evolocumab (Repatha) 140mg every 2 weeks subcutaneous	Reductions in CV events in secondary prevention (and more recently primary prevention) LDL-C lowering 45-64% - great for pts with severe hypercholesterolemia, or very high above goal on statin therapy (and unlikely to get there with oral therapy alone, especially secondary prevention)
Bempedoic Acid	ATP citrate lyase in the liver to decrease cholesterol production	180mg once daily oral	Reduction in LDL and CV events in statin-intolerant patients for high-risk primary and secondary prevention LDL lowering 21-24%

SUMMARY



*Take home message: Coronary Artery Calcium Score (CAC)

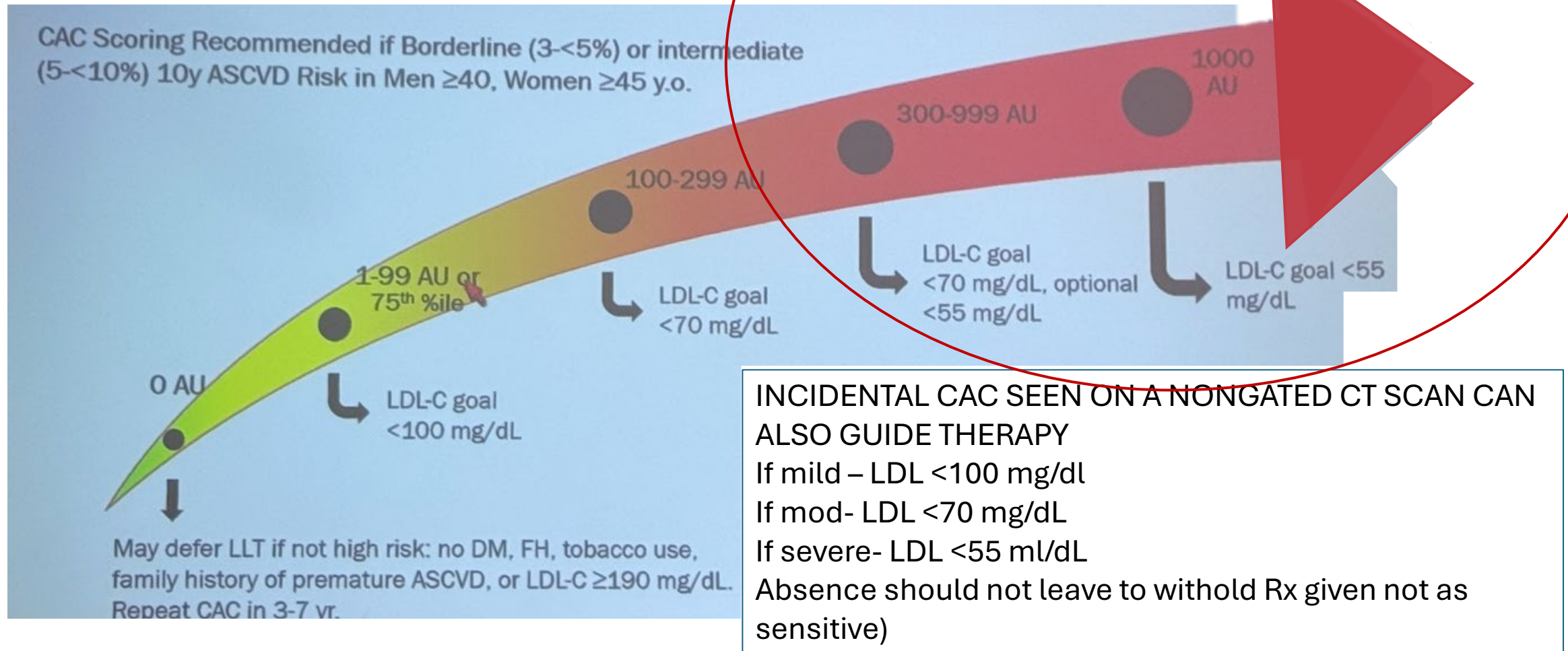
- CAC scoring in men at least **40** years of age and women at least **45** years of age can improve risk assessment and guide LDL-C and non-HDL-C goals. Both the absolute amount of CAC and the corresponding standardized percentile (currently based on age, sex, and race) have prognostic importance and help to reclassify risk in adults.-
 - Also new guidelines incorporate subclinical atherosclerosis seen on imaging (i.e. non-gated Chest CT)

***** I always check to see if patient has any chest imaging to evaluate for presence of coronary artery calcification or plaque which will influence their risk and management**

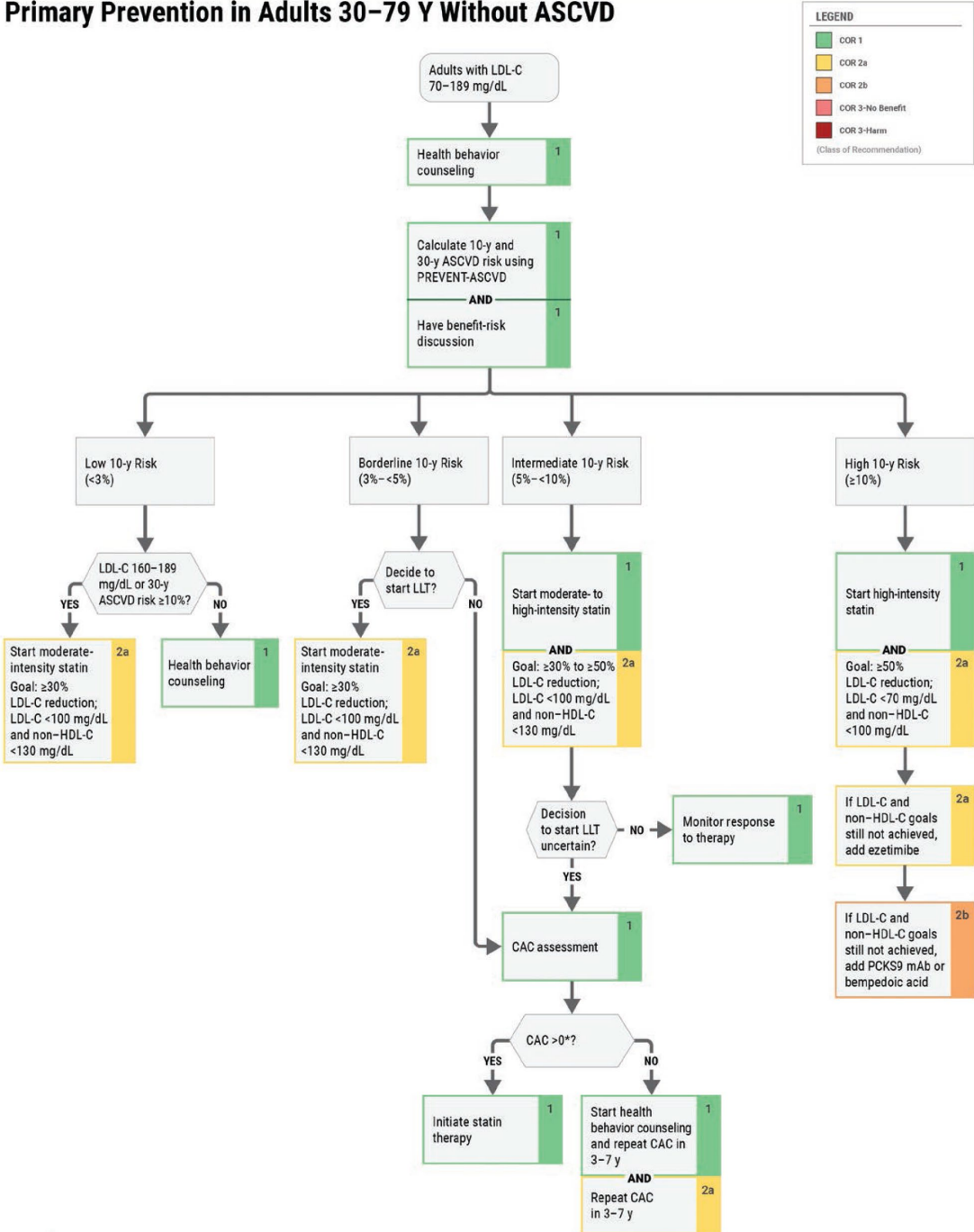
CAC Score Guided Rx

- CAC>0 = start statin therapy
- CAC 0= may defer and repeat in 3-7 yrs

- If CAC >300, risk of MI is as high as someone who has already had an event so want to treat them as “secondary prevention”



Primary Prevention in Adults 30–79 Y Without ASCVD



Take home message: Special Populations

- LDL-lowering therapy is recommended for primary prevention in adults aged 40 to 75 years with **diabetes, chronic kidney disease stage 3 or 4, or human immunodeficiency virus, regardless of LDL-C level.**
 - After age 75 years, LDL-C–lowering pharmacotherapy can be considered in conjunction with lifestyle interventions to reduce ASCVD risk.

Diabetes without ASCVD

- Most adults 40–75 years with diabetes = **intermediate or high ASCVD risk**
- First events in diabetes carry **higher morbidity and mortality**

Primary LDL Treatment Strategy

- Moderate-intensity statin indicated for ages 40–75 yrs
 - **Goal:** ≥30–49% LDL mg/dL reduction, LDL <100 mg/dL
- High-intensity statin reasonable if multiple ASCVD risk factors or PREVENT>10%
 - **Goal:** ≥50% LDL reduction, LDL <70 mg/dL

COR	RECOMMENDATIONS
1	Age 40–75 years → moderate statin (LDL<100 mg/dL).
1	Statin-intolerant: ezetimibe/PCSK9/bempedoic.
2a	Multiple risk factors or PREVENT >10%→ high-intensity statin (LDL<70 mg/dL).
2b	TG 150–499 mg/dL→ consider icosapent ethyl after statin maximized.
2b	10-year risk ≥10% → consider ezetimibe/PCSK9 to get at goal.
2b	Age >75 years→ moderate statin reasonable.
2b	Age 20–39 years with long-duration diabetes (≥10 yrs type 2, >20 yrs type 1), albuminuria, eGFR<60, retinopathy, neuropathy,→ consider statin.

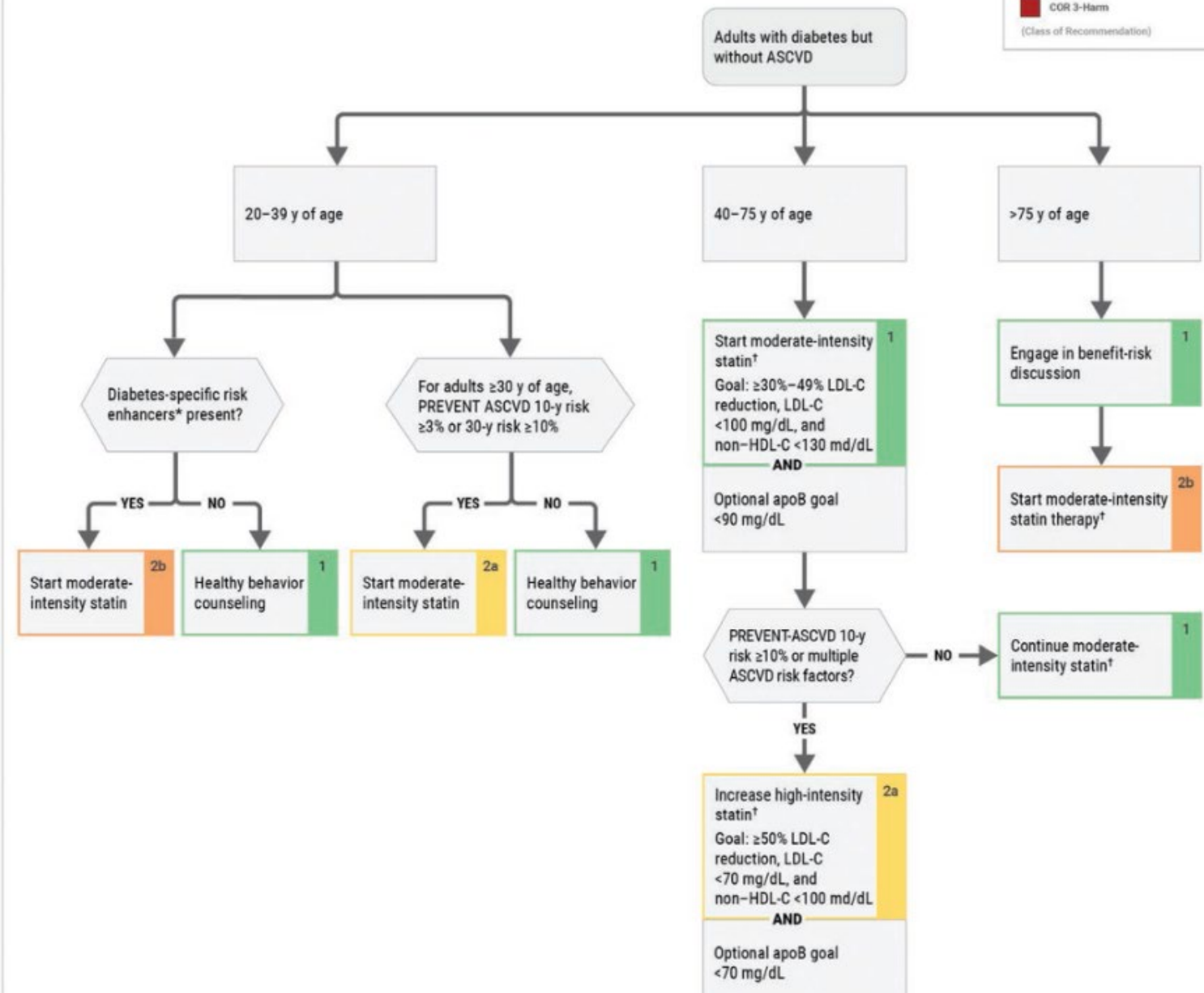
Abbreviations: ASCVD indicates atherosclerotic cardiovascular disease; LDL, and low-density lipoprotein cholesterol.

Diabetes- NO ASCVD

- **40-75 YRS: MODERATE INTENSITY STATIN AT LEAST**
 - Calculate ASCVD risk and up to HIGH intensity if high risk ($\geq 10\%$ 10-yr PREVENT) or lots of risk factors
- **20-39y: Moderate intensity if risk factors or for >30 yrs: 10-yr PREVENT $\geq 3\%$ or 30 yr $\geq 10\%$**
- **If >75 yrs, moderate-intensity statin reasonable (2b)**

*Diabetes-specific risk enhancers: long-duration diabetes (≥ 10 yrs type 2, >20 yrs type 1), albuminuria, eGFR <60 , retinopathy, neuropathy

Adults With Diabetes and Without ASCVD

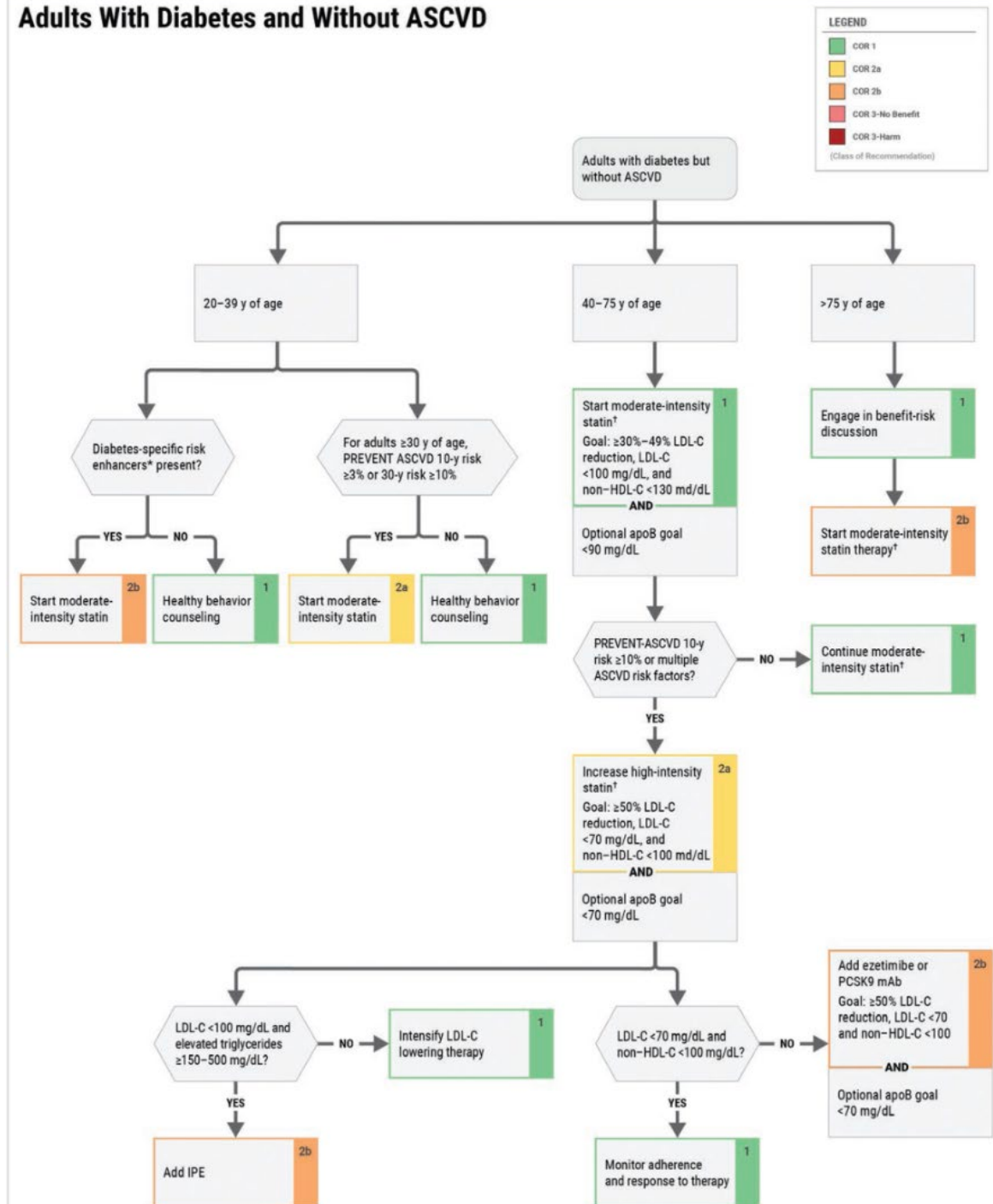


Diabetes: Goals

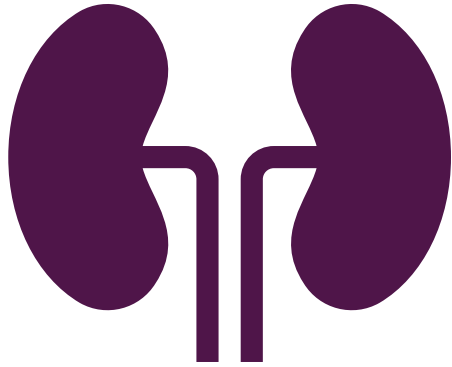
- Goal $\geq 30\%$ reduction, LDL-C <100 for everyone
- Goal <70, $\geq 50\%$ reduction if higher risk
- If don't reach LDL goal with statin, then add Ezetimibe or PCSK9 inhibitor

- If high risk, once reach LDL goal, and TG still above >150, can consider Vascepa (IPE/omega-3)
 - Although best is to first make sure glycemic control and weight optimized (GLP-1 are great for this)

Adults With Diabetes and Without ASCVD



Adults with Chronic Kidney Disease



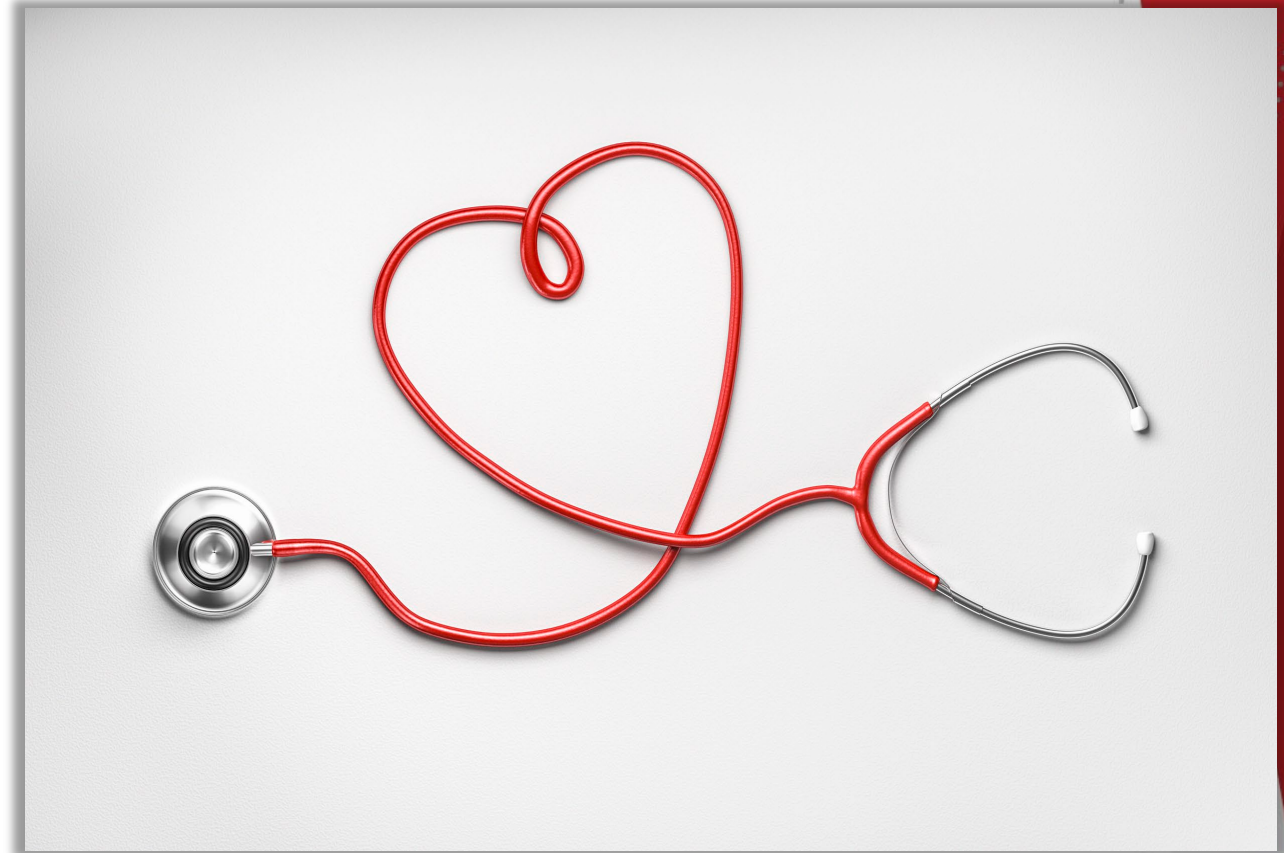
Adults with CKD	
COR	RECOMMENDATIONS
1	In adults 40 to 75 years of age with CKD Stage 3 or higher and an LDL-C of 70-189 mg/dL (1.8-4.9 mmol/L), moderate-intensity statin therapy (± ezetimibe) is recommended to reduce ASCVD risk. GOAL <70 mg/dl
1	In adults with CKD Stage 3 or higher and clinical ASCVD, LLT with high-intensity statin therapy (± ezetimibe) and/or a PCSK9 mAb, is recommended to achieve ≥50% reduction in LDL-C levels and a goal of LDL-C <55 mg/dL (1.4 mmol/L) and non-HDL-C <85 mg/dL (2.2 mmol/L) to reduce ASCVD risk.
2b	In adults with CKD who require maintenance hemodialysis, it may be reasonable to continue statin therapy to reduce the risk of ASCVD events. Treatment decisions should be individualized, considering expected survival, other comorbidities, and severity of ASCVD.

IF EGFR <30 ml/m², atorvastatin best due to lower renal clearance. Rosuvastatin FDA approved only to ≤ 10mg may be (can cause proteinuria/hematuria at higher doses, and usually atorvastatin preferred in this case)

Adults with HIV

Persons Living With Human Immunodeficiency Virus (HIV)	
COR	RECOMMENDATIONS
1	In people living with HIV aged 40-75 on stable combination antiretroviral therapy, statin therapy is recommended to reduce risk of a first ASCVD event and reduce the rate of coronary atherosclerosis progression.

- The REPRIEVE trial demonstrated that in people living with HIV, pitavastatin 4 mg daily led to a 35% reduction in risk of the first MACE.
- Consider drug-drug interactions between lipid-lowering therapies and antiretroviral therapies.



Take home message: LDL ≥ 190 = severe hypercholesterolemia

- Should raise suspicion for genetic dyslipidemia
- Very high risk => should be treated aggressively

Severe Hypercholesterolemia

What is severe hypercholesterolemia?

- LDL-C ≥ 190 mg/dL (or non-HDL-C > 220 , apoB ≥ 140)
- Very high *lifetime* ASCVD risk even without other risk factors
- Often due to **long-term LDL exposure** (cumulative LDL burden)

Always exclude secondary causes first:
ketogenic/high saturated fat diet, hypothyroidism, CKD, nephrotic syndrome, obesity, diabetes with high insulin resistance, steroids, etc.

COR	RECOMMENDATIONS
1	Exclude secondary causes.
1	Start maximally tolerated statin.
1	If no ASCVD/FH → add therapy to reach LDL<100.
1	If FH and CAC → intensify therapy to LDL<70.
1	If ASCVD → intensify to LDL<55.

Genetic Testing for Familial Hypercholesterolemia



Genetic Testing

- Identify individuals meeting clinical suspicion
- Prevalence 1:250 → underdiagnosed



Variants

- LDLR
- ApoB
- PCSK9



Risk Stratification & Treatment

- Higher ASCVD risk even with modest LDL
- Supports earlier LLT and cascade screening

COR

RECOMMENDATIONS

1

In adults with possible, probable, or definite FH, panel-based genetic testing for pathogenic/likely pathogenic rare variants for FH is beneficial to identify individuals at highest risk of cardiovascular events and to facilitate cascade screening.

2a

In adults with severe hypercholesterolemia with an LDL-C ≥ 190 mg/dL (4.9 mmol/L) without an identified secondary cause, panel-based genetic testing for pathogenic/likely pathogenic rare variants for FH can be useful to identify those with FH who are at higher risk of ASCVD events.

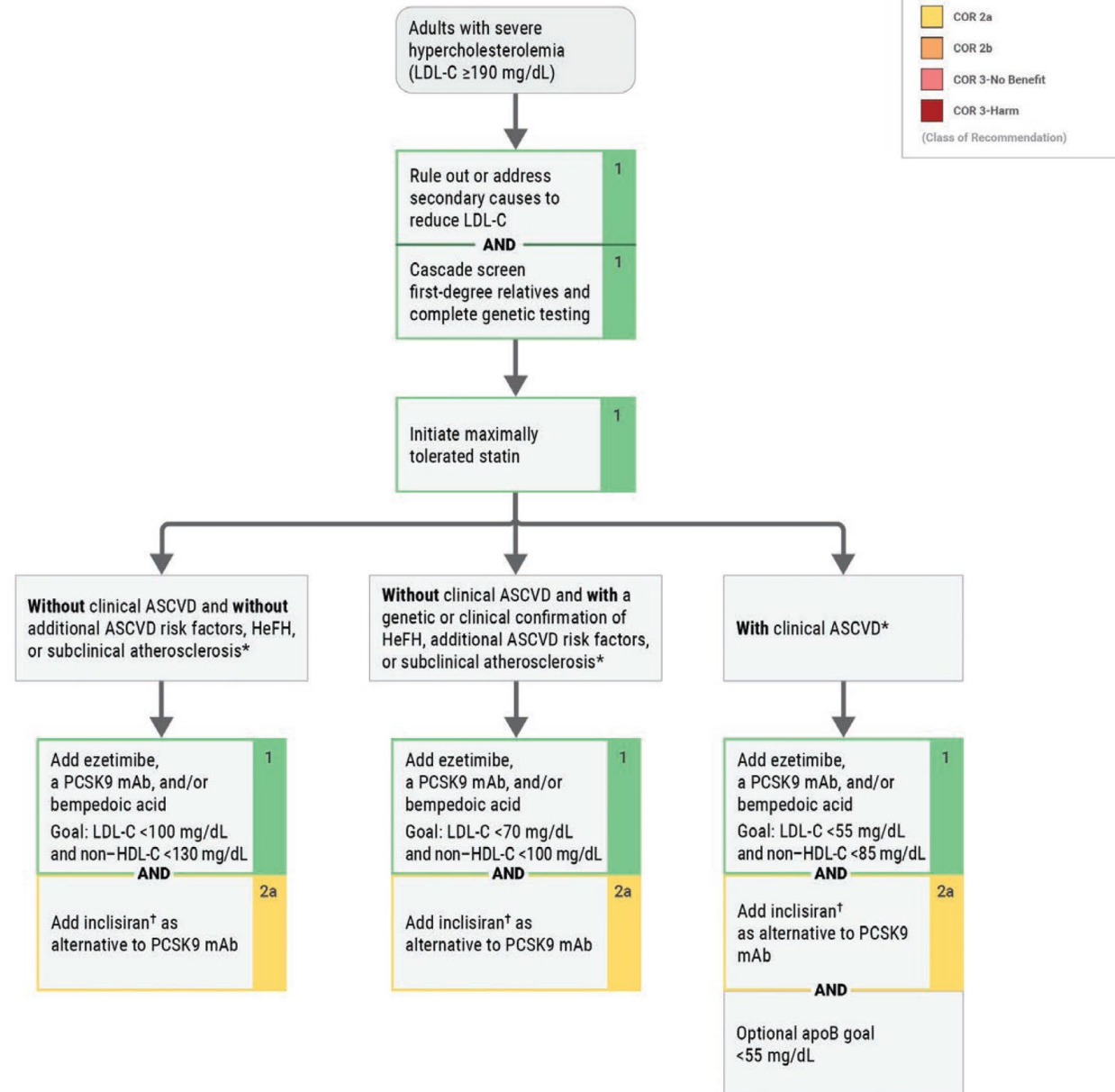
2b

In adults with an elevated LDL-C of 160 to 189 mg/dL (4.1-4.9 mmol/L) without an identified secondary cause, panel-based genetic testing for pathogenic/likely pathogenic rare variants for FH may be considered to identify those with FH who are at higher risk of events.

In patients with LDL >190 and no clear secondary cause (or if very high), if permitted locally, send genetic panel for FH (order: Special Referral Lab Test: #482261 GeneSeq Cardio: Familial Hypercholesterolemia Panel)

Summary of goals and mgmt

Evaluation and Management of Severe Hypercholesterolemia



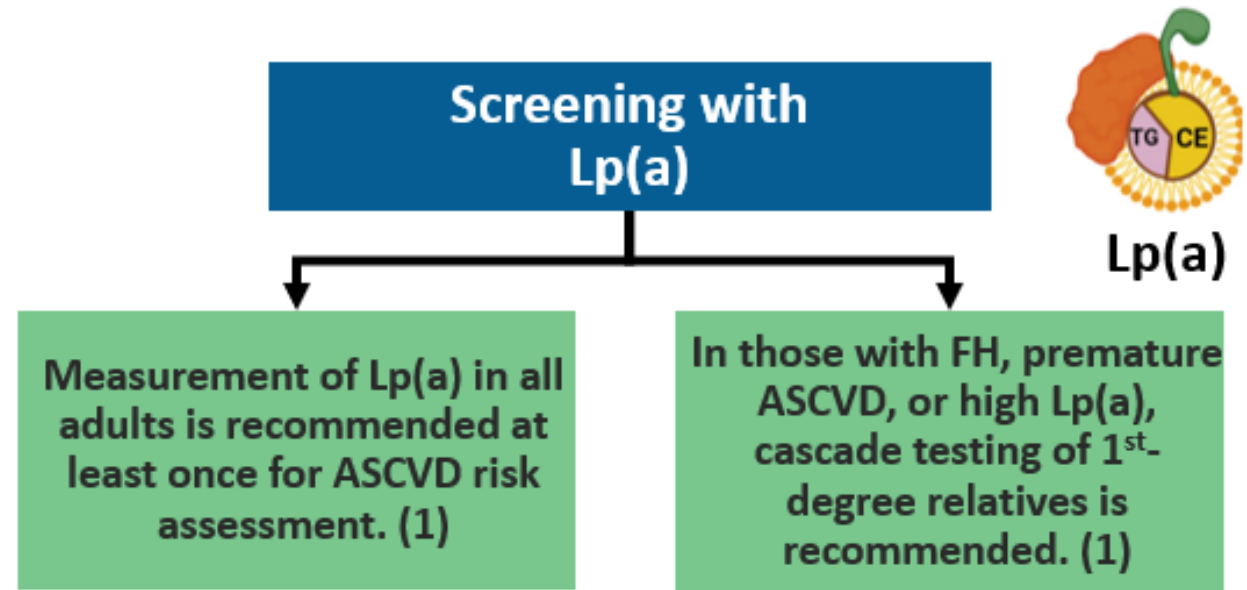
- Start Max Tolerated Statin
- Add Ezetimibe, PSCK9i, or bempedoic acid if needed to get to goal

Take home message: Check Lp(a) ONCE

- Lp(a) should be measured at least once to identify **those individuals at higher risk of ASCVD**. It is considered as a risk-enhancing factor at levels ≥ 125 nmol/L (50 mg/dL), which is associated with about a 1.4-fold increased ASCVD risk, and values ≥ 250 nmol/L (100 mg/dL) are associated with ≥ 2 -fold higher estimated risk.
 - The presence of elevated Lp(a) should be an indication for more intensified LDL-C lowering and management of other risk factors

Lp(a)

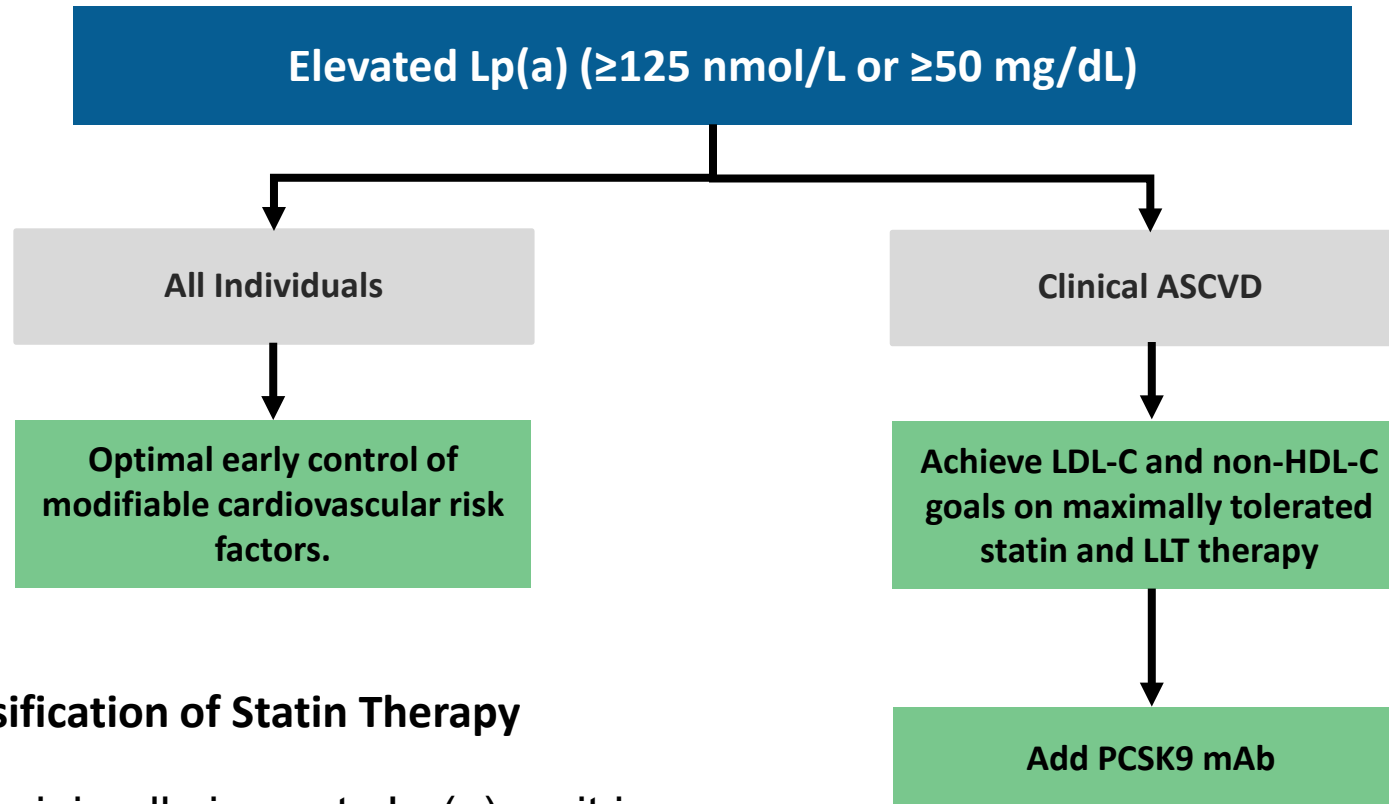
- Lp(a) is cholesterol-carrying lipoprotein in your blood
- Level is genetically determined
 - Levels set in early childhood
- 1/5 have elevated Lp(a)
- High Lp(a) independent risk factor for early ASCVD (CAD, PAD, CVA) and calcific aortic stenosis



Lp (a) in nmol/L	ASCVD relative risk
450	4x
375	3x
250	2x
125	1.4x
75	Reference

Approach to Patients with Elevated Lp(a)

- Don't forget to recommend screening to first-degree relatives



* Aim LDL <70 for most, <55 if very high risk

***Favors initiation or Intensification of Statin Therapy**

*Lifestyle management minimally impacts Lp(a) as it is mostly genetically determined



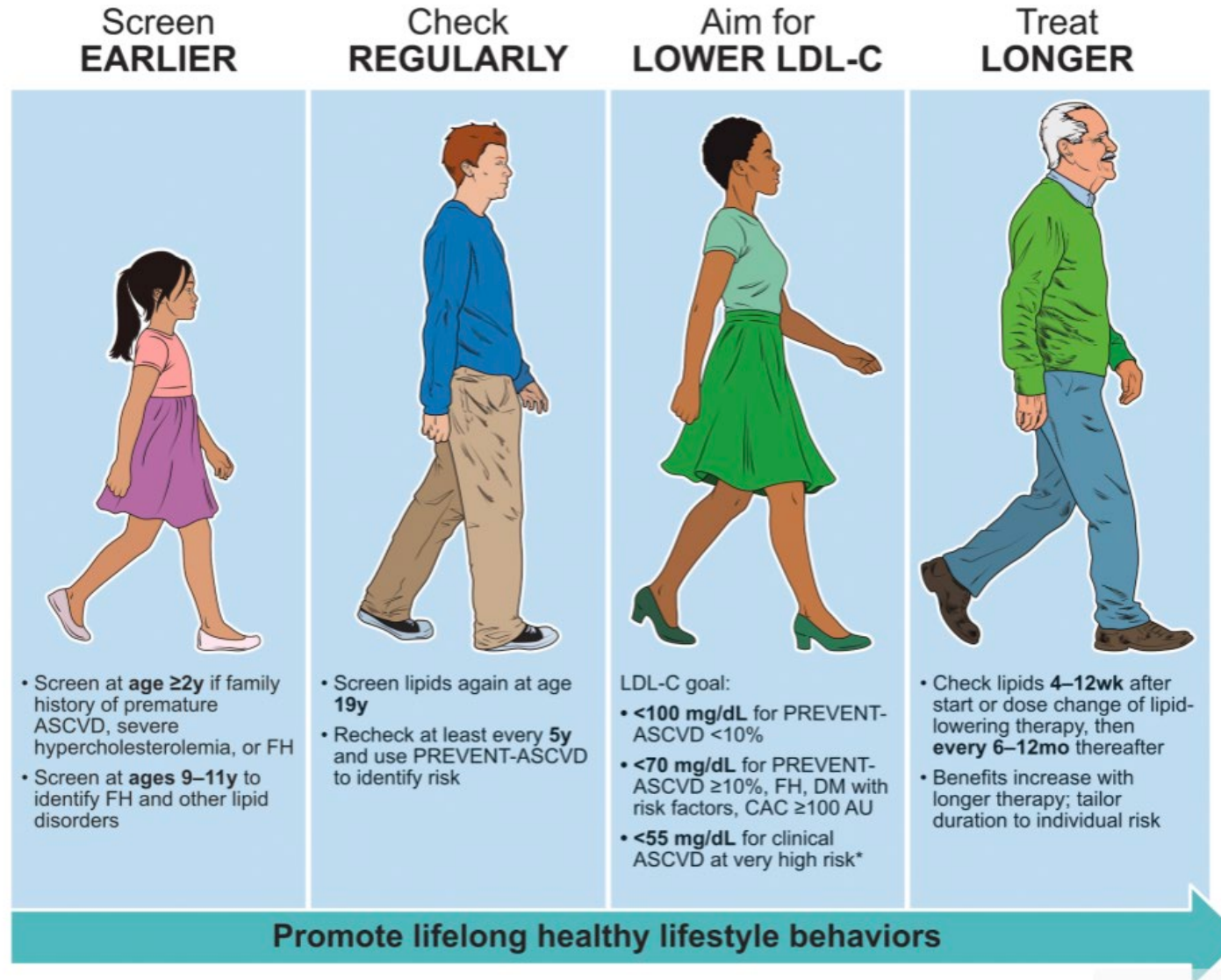
Abbreviations: ASCVD indicates atherosclerotic cardiovascular disease; HDL-C, high-density lipoprotein cholesterol; LDL-C, low-density lipoprotein-cholesterol; Lp(a), lipoprotein(a); mAb, monoclonal antibody; and PCSK9, Proprotein Convertase Subtilisin/Kexin type 9.

Blumenthal, R.S., Morris, P.B., et al. 2026 ACC/AHA Guideline on the Management of Dyslipidemia. *Circulation*.

*Take home message: Start earlier, reduce Lifetime exposure to LDL

- Treat dyslipidemia earlier to reduce lifelong risk of prolonged exposure to atherogenic lipoproteins. Health behavior counseling to support lifestyle optimization should start in youth -
- Early consideration of pharmacotherapy in youth with familial hypercholesterolemia and in young adulthood in individuals with LDL-C >160 mg/dL or a strong family history of premature ASCVD.
 - Think of LDL-C >160 mg/dl in children/adolescents same as LDL 190 in adults.

Lipid Lowering to Reduce ASCVD Risk



Very high risk includes a history of multiple major ASCVD events (ACS within the past 12 months; prior myocardial infarction [other than ACS above]; prior ischemic stroke; or symptomatic peripheral artery disease) or 1 major ASCVD event and multiple high-risk conditions (age >65 years of age; prior coronary artery revascularization; current smoking; diabetes; history of heart failure; hypertension; or LDL-C >100 mg/dL despite maximally tolerated statin plus ezetimibe -

Secondary Prevention

Take home for Secondary Prevention

- In secondary prevention, a goal of LDL-C <55 mg/dL (1.4 mmol/L) and non-HDL-C <85 mg/dL (2.2 mmol/L) is recommended for those at very high risk of ASCVD events. Although a smaller number of patients with ASCVD not at very high risk have an LDL-C goal of at least <70 mg/dL, the majority of those with a history of ASCVD events will likely qualify for an LDL-C goal of <55 mg/dL.

- Goal LDL <70 for everyone at least, <55 for those that are high risk (class I)
 - Reasonable (2a) to get to 55 for those not high risk

Criteria for Defining “At Very High Risk” in ASCVD Patients

At Very High Risk

≥ 2 Major ASCVD Events

OR

**1 Major ASCVD Event
+
≥2 High Risk Conditions**

Major ASCVD Events

- Consider drug-drug interactions between lipid-lowering therapies and antiretroviral therapies.

High Risk Conditions

- Age ≥65
- Coronary bypass or percutaneous intervention
- Current smoker
- Diabetes
- Hx of congestive heart failure
- Hypertension
- LDL-C ≥ 100mg/dL despite maximally tolerated statin + ezetimibe

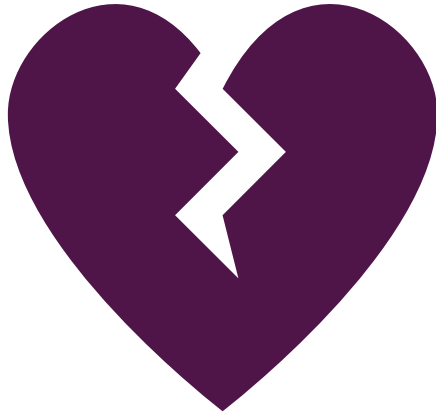
Secondary Prevention of ASCVD in Adults not at Very High Risk

Clinical ASCVD in adults not at very high risk:	
COR	RECOMMENDATIONS
1	High-intensity statin therapy should be initiated to achieve $\geq 50\%$ reduction in LDL-C and a goal of LDL-C <70 mg/dL and non-HDL-C <100 mg/dL to reduce the risk of recurrent ASCVD events.
2a	For those on maximally tolerated statin therapy, it is reasonable to add ezetimibe, a PCSK9 mAb, or bempedoic acid* to achieve a goal of LDL-C <70 mg/dL and non-HDL-C <100 mg/dL to reduce the risk of ASCVD events.
2a	For those on maximally tolerated statin therapy, it is reasonable to add ezetimibe, a PCSK9 mAb, or bempedoic acid to achieve a goal LDL-C <55 mg/dL and non-HDL-C <85 mg/dL and to reduce the risk of ASCVD events.



Abbreviations: ASCVD, atherosclerotic cardiovascular disease; LDL-C, low-density lipoprotein cholesterol; non-HDL-C, non-high-density lipoprotein cholesterol; and PCSK9, proprotein convertase subtilisin/kexin type 9.

Secondary Prevention of ASCVD in Adults at Very High Risk



Clinical ASCVD in adults at very high risk:	
COR	RECOMMENDATIONS
1	High-intensity statin therapy should be initiated to achieve $\geq 50\%$ lowering in LDL-C and a goal LDL-C < 55 mg/dL and non-HDL-C < 85 mg/dL and to reduce the risk of ASCVD events.
1	For those on maximally tolerated statin therapy, ezetimibe and/or a PCSK9 mAb should be added to achieve a goal of LDL-C < 55 mg/dL and non-HDL-C < 85 mg/dL to reduce risk of ASCVD events.
2a	For those on maximally tolerated statin, it is reasonable to add bempedoic acid to a statin, with or without ezetimibe and/or PCSK9 mAb, to reach an LDL-C goal < 55 mg/dL and non-HDL-C < 85 mg/dL to reduce the risk of ASCVD events.
2a	For those on maximally tolerated statin therapy with or without ezetimibe, it is reasonable to add inclisiran in those unable to tolerate or obtain evolocumab or alirocumab or have a strong preference for less frequent dosing to achieve an LDL-C goal < 55 mg/dL and non-HDL-C < 85 mg/dL.

Recommendations for Older Adults

COR	RECOMMENDATIONS
1	In older adults, the benefit-risk discussion should include patient priorities, functional status, multimorbidity, frailty, polypharmacy, and life expectancy, and should not be based solely on chronological age when considering the decision to discontinue LLT.
2a	In adults aged >75 years with an estimated life expectancy of at least 2.5 years, it may be reasonable to initiate moderate-intensity statin therapy after a clinician–patient discussion of potential benefits and risks to reduce ASCVD risk.
2a	In patients with a life expectancy of <1 year, it may be reasonable to discontinue LDL-lowering therapy to avoid unnecessary medication use or adverse medication effects.
2b	In adults aged >75 years with an estimated life expectancy of at least 2.5 years, and for whom the decision regarding LLT is uncertain, it may be reasonable to measure CAC to reclassify those with minimal (1-10) or no CAC to avoid LLT.



Abbreviations: ASCVD indicates atherosclerotic cardiovascular disease; CAC, coronary artery calcification; LDL, low-density lipoprotein; and LLT, lipid-lowering therapy.

Medication Safety and Therapy-Associated Side Effects

COR	RECOMMENDATIONS
3: No Benefit	In adults on statin therapy, routine use of coenzyme Q10 is not recommended to treat or prevent statin-attributed muscle symptoms.
3: No Benefit	In adults on statin therapy who do not have severe statin-attributed muscle symptoms, routine measurement of creatine kinase is not useful to assess safety.
3: No Benefit	In adults treated with statin therapy who do not have severe symptoms suggestive of hepatotoxicity (ie, jaundice, pruritus, fatigue, nausea and vomiting, abdominal pain), routine measurement of hepatic function is not useful to assess safety.

*Don't need to check LFTs or CK routinely

*Additionally, SPORT TRIAL- showed that cinnamon, garlic, turmeric, plant sterols, or red yeast rice did not meaningfully lower LDL unfortunately

A Rare Pattern of Harm: Statin-Associated Immune-Mediated Necrotizing Myopathy in Native American Populations

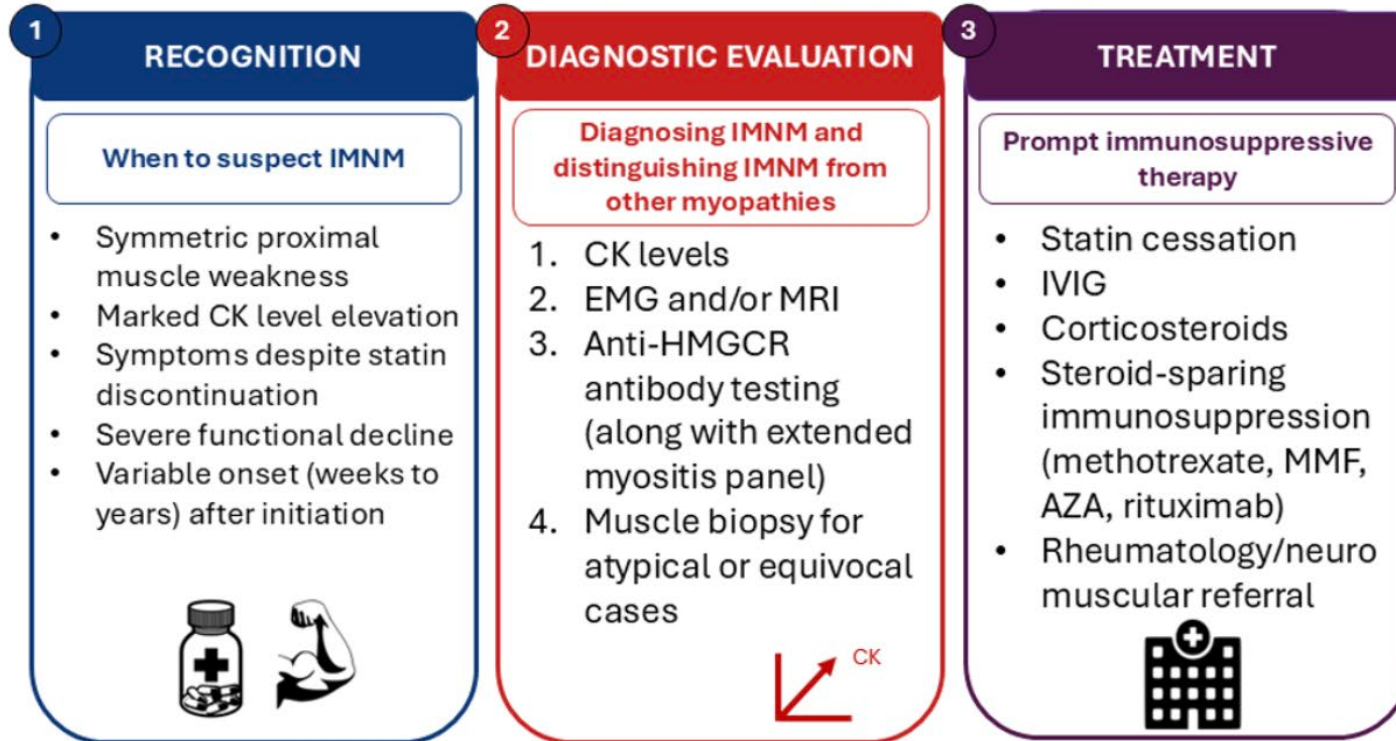
Aug 17, 2026 | [Bhavya Ancha, MD](#); [Carl E. Orringer, MD, FACC](#); [Laurence S. Sperling, MD, FACC](#); [Neil J. Stone, MD, FACC](#); [Roger S. Blumenthal, MD, FACC](#)

Expert Analysis

- Statin-associated immune-mediated necrotizing myopathy (IMNM) is rare, but higher prevalence in AIAN communities
- Pathophysiology interaction between statin exposure, immune activation, and HLA genetic susceptibility
- Notably, **atorvastatin predominates** in reported AIAN case series of IMNM, a finding also observed in larger cohorts
 - For this reason, I use Rosuvastatin predominately

Figure 1: Clinical Recognition and Management of Statin-Associated IMNM

A rare but serious autoimmune myopathy characterized by progressive weakness, markedly elevated CK levels, anti-HMGCR antibodies, and persistent symptoms despite statin withdrawal.

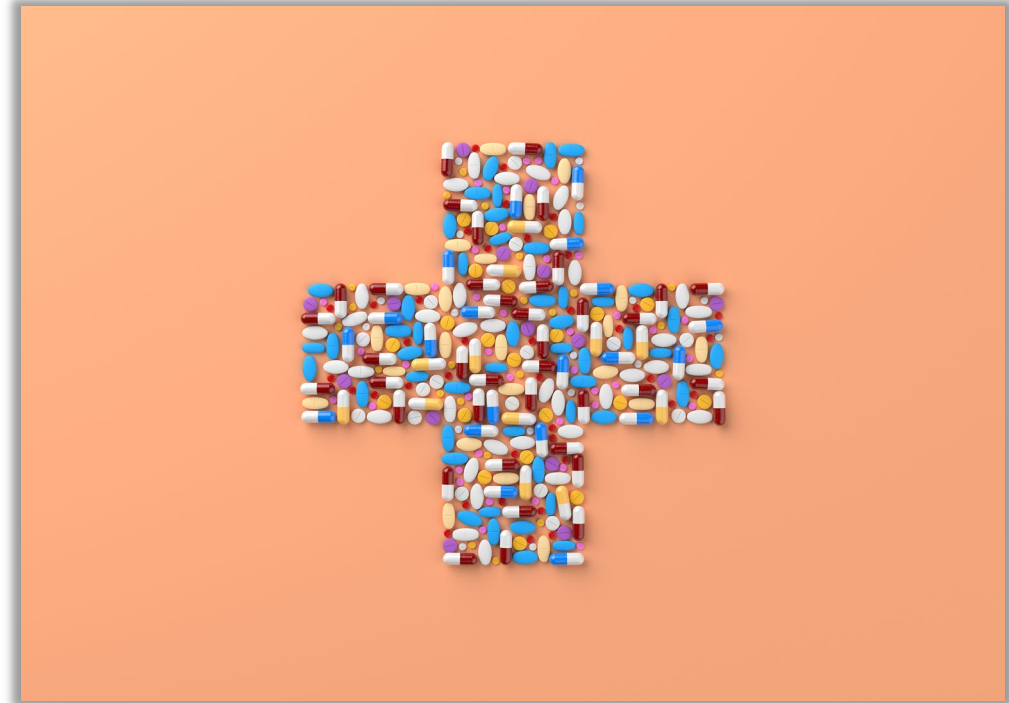
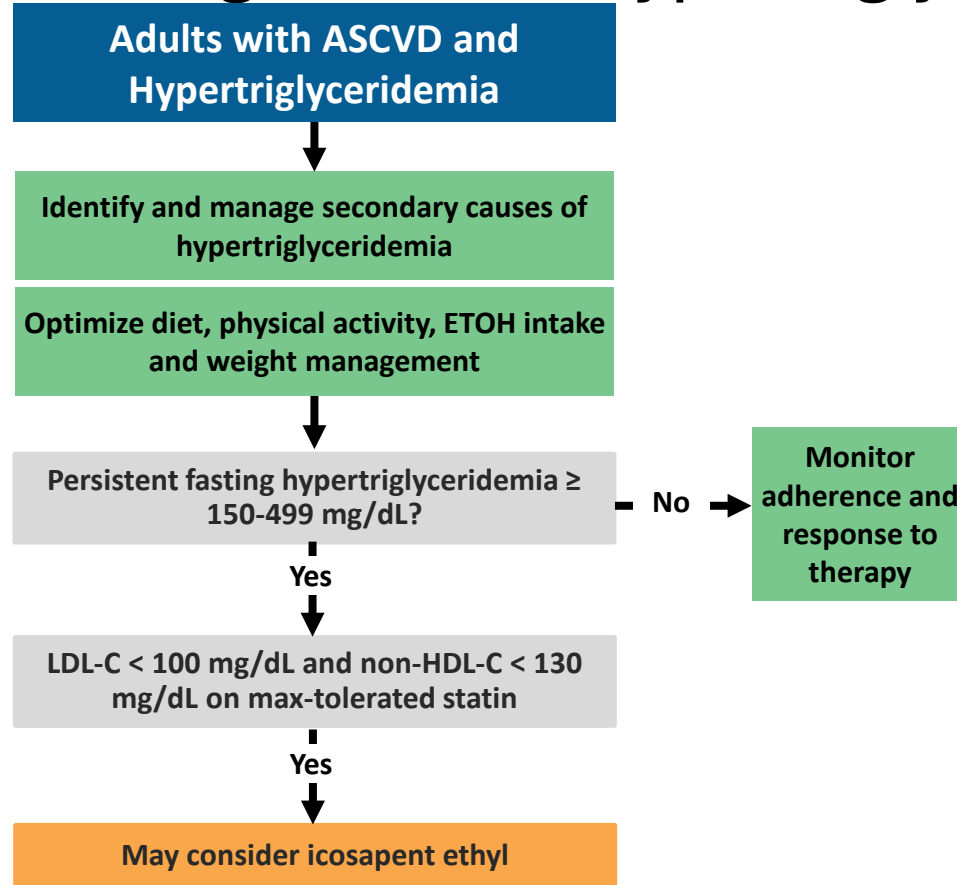


Recognition of statin-associated IMNM requires heightened vigilance, particularly in populations with disproportionate disease burden. Earlier diagnosis and individualized CV prevention strategies may reduce both

LDL monitoring

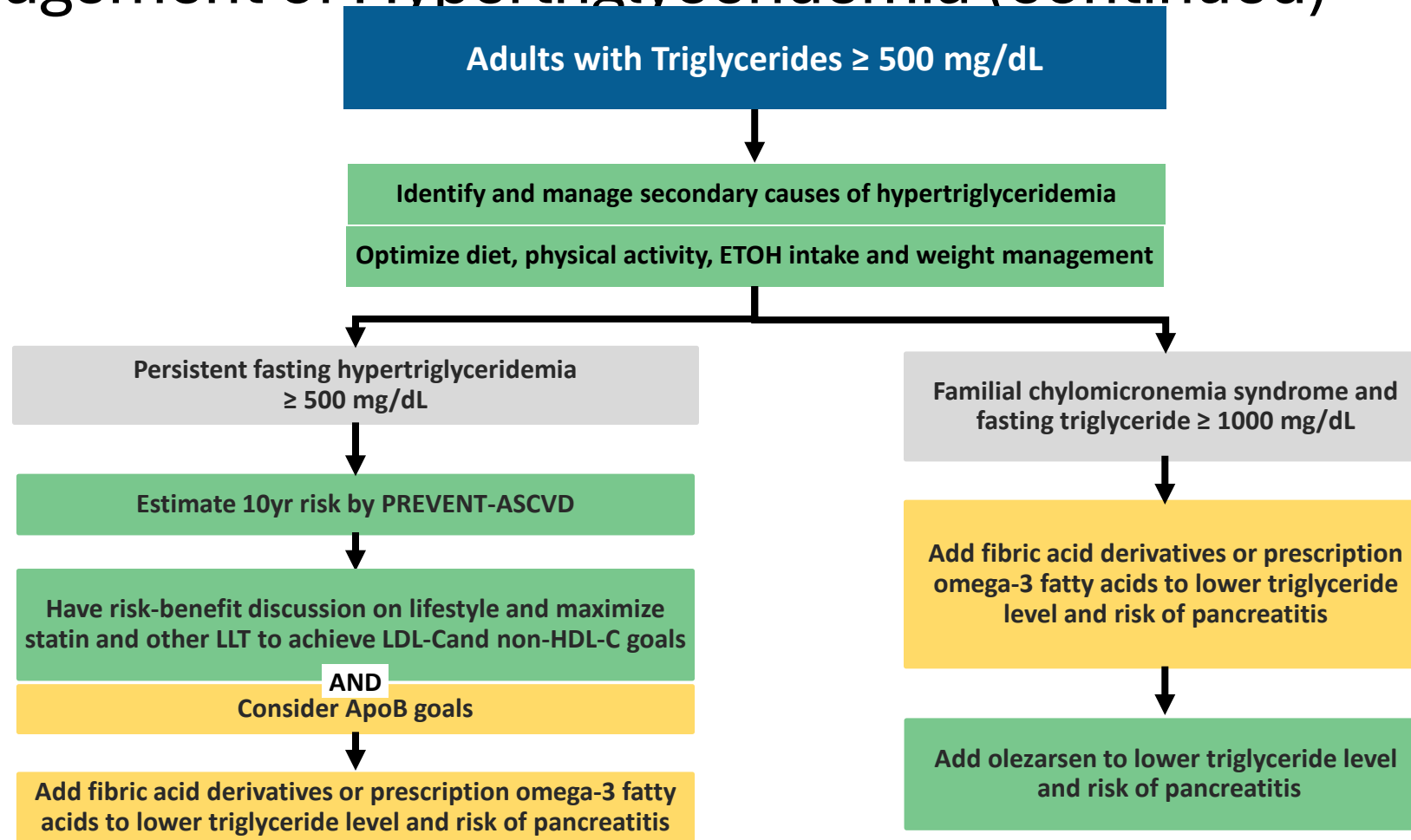
- Recommend lipid profile 4 to 12 weeks after initiation or intensification of therapy
- Every 6 to 12 months thereafter.

Management of Hypertriglyceridemia



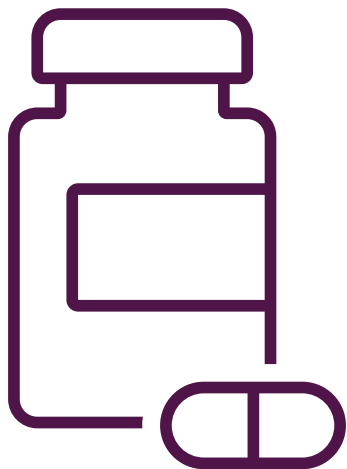
* If have ASCVD or high ASCVD risk, get statin maximized, and then if still high, add icosapent ethyl

Management of Hypertriglyceridemia (continued)



- If no ASCVD-determine PREVENT risk. If warrants statin, start statin first, maximize to goal. Can add additional therapy after that if needed
- If no statin therapy rec based on PREVENT, fibrates or omega 3

Adults with Cancer or a History of Cancer



Adults with Cancer or a History of Cancer	
COR	RECOMMENDATIONS
1	Adult cancer survivors with life expectancy of at least 2 years who otherwise qualify for LLT should be treated similarly to people without history of cancer to reduce the risk of ASCVD events.
1	In adults with active cancer currently on statin therapy, treatment should be continued to reduce ASCVD risk unless there is concern for a specific drug interaction or life expectancy is <1 year.
2b	In adults with active cancer, initiation of statin therapy may be considered to prevent anthracycline-induced cardiotoxicity.

Abbreviations: ASCVD indicates atherosclerotic cardiovascular disease; and LLT, lipid-lowering therapy.

Medication Safety and Therapy-Associated Side Effects

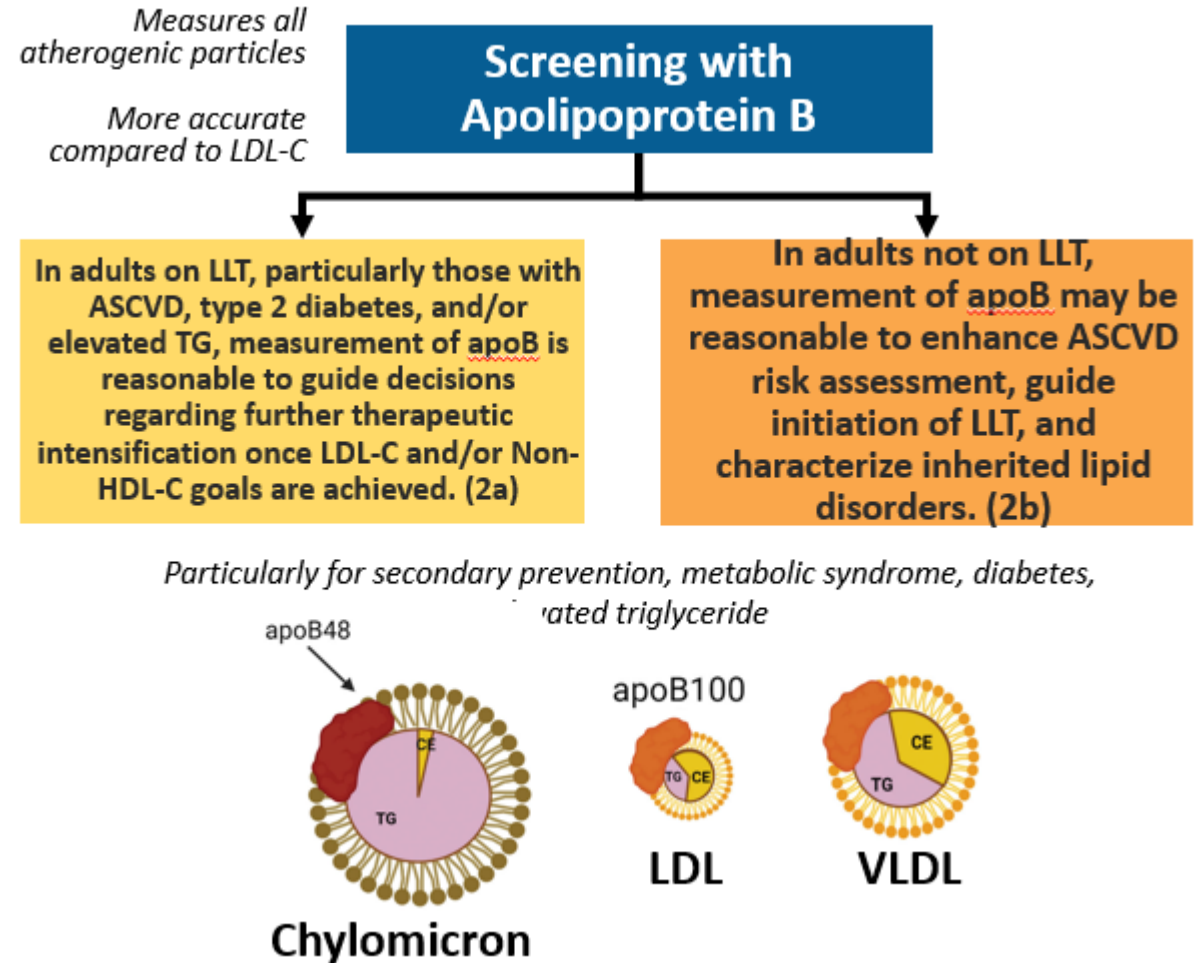
COR	RECOMMENDATIONS
1	In adults with dyslipidemia, an individualized clinician–patient discussion prior to initiating lipid-lowering medication is recommended to review the benefits and risks of pharmacotherapy to promote patient engagement and medication adherence.
2a	In adults at elevated ASCVD risk with chronic, stable liver disease (including metabolic dysfunction-associated <u>steatotic</u> liver disease), it is reasonable to treat with statin therapy to reduce ASCVD risk.

*Take home message: Apo B testing to Assess Residual Risk

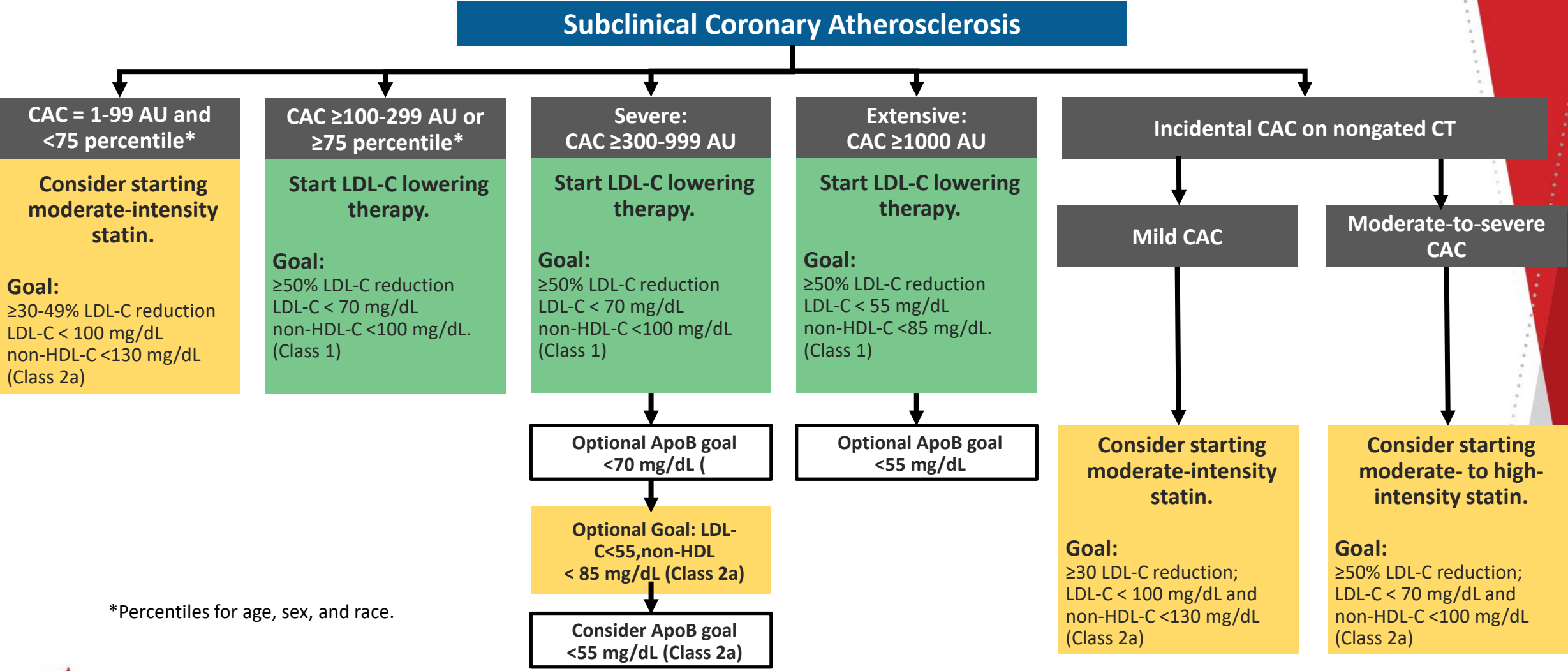
- Apolipoprotein B (ApoB) testing can be useful to improve risk assessment and guide therapy once LDL-C and non-HDL-C goals are met, particularly in those with elevated triglycerides (TG) (>200 mg/dL), diabetes, or low achieved LDL-C (<70 mg/dL). ApoB measurement helps identify adults with residual --elevated lipoprotein-related risk that may be underestimated by the standard lipid profile alone and may be useful in the diagnosis of specific lipid and lipoprotein disorders --

Apo B

- Consider Apo B when
 - LDL-C and NonHDL-C goals are met, especially in patients with
 - CKM
 - Diabetes
 - TG $\geq$ 200
 - ASCVD
- If apo above goal, Rx should be intensified (see last slide for goals summary)
 - High risk <70
 - Very high risk <55
 - Otherwise <90



Subclinical Coronary Atherosclerosis



*Percentiles for age, sex, and race.



Abbreviations: ApoB indicates apolipoprotein B; LDL-C, low-density lipoprotein cholesterol; and HDL-C, high-density lipoprotein cholesterol.

4.2.8.4. Management of Dyslipidemia in Persons Planning Pregnancy, During Pregnancy, or While Lactating

Recommendations for Management of Dyslipidemia in Persons Planning Pregnancy, During Pregnancy, or While Lactating		
Referenced studies that support recommendations are summarized in the Evidence Table.		
COR	LOE	Recommendations
1	C-LD	1. Persons of childbearing age with hypercholesterolemia who are not at high risk for ASCVD and plan to become pregnant should stop statin therapy 1 to 2 mo before attempting to become pregnant or as soon as pregnancy is discovered to avoid uncertain risks to the fetus. ^{1–4}
2a	B-NR	2. In pregnant or lactating individuals with HoFH, it is reasonable to undergo lipoprotein apheresis to lower LDL-C and reduce ASCVD risk. ^{5–7}
2a	B-NR	3. In pregnant individuals with severe fasting hypertriglyceridemia (TG ≥500 mg/dL [5.7 mmol/L]), the use of fibrates (after the first trimester) or high-dose omega-3 ethyl esters is reasonable as an adjunct to lifestyle management to lower TG levels and reduce the risk of pancreatitis. ⁸
2a	C-EO	4. In pregnant or lactating individuals with hypercholesterolemia but without hypertriglyceridemia, the use of bile acid sequestrants is reasonable to lower LDL-C.
2b	C-LD	5. In pregnant individuals with FH or a history of clinical ASCVD, it may be reasonable to continue statin therapy to lower LDL-C and ASCVD risk following an individualized benefit-risk discussion. ⁹

*The use of a hydrophilic statin, such as pravastatin, should be considered if the benefit of continued statin therapy is deemed greater than potential risk based on results from available clinical trials.³

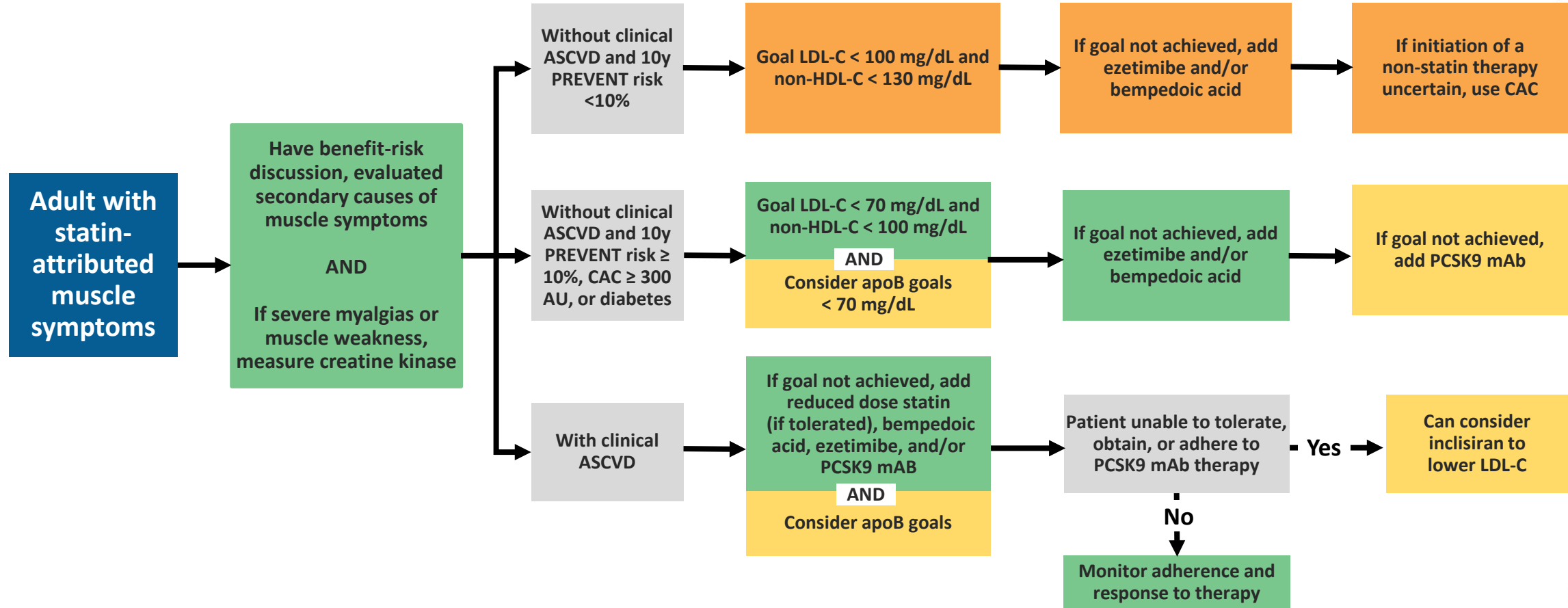
pidemia. *Circulation*.

Table 20. Lipid-Lowering Therapies During Pregnancy and Lactation ([Table view](#))

	Pregnancy	Lactation
Statins	Should be discontinued in most pregnancies Can be considered in high-risk individuals (ASCVD or FH ²⁹)	Avoid use ³⁰
Ezetimibe	Avoid use due to insufficient data regarding risk to fetus ³¹	Avoid use ³¹
Bile acid sequestrants	Safe to use. No evidence of risk in humans due to lack of systemic absorption ¹² Known to interfere with absorption of fat-soluble vitamins High rate of gastrointestinal side effects	Not excreted in human milk ¹² Caution if used—associated with malabsorption of fat-soluble vitamins (A, D, E, and K). Prenatal vitamins may not be sufficient
Niacin	Avoid use due to insufficient data regarding risk to fetus or clinical utility for the mother ¹²	Avoid use ¹²
Fibric acid derivatives	Can be considered (after the first trimester) for severe hypertriglyceridemia only if the potential benefit justifies the potential risk to the fetus ¹²	Avoid use during lactation. If taken during pregnancy, lactation can be resumed 5 days after last dose of fibric acid derivatives ¹²
Omega-3 fatty acids	Can be considered for severe hypertriglyceridemia ¹²	Known to be excreted in human milk. Effects on infants are unknown Caution if used during lactation ¹²
Bempedoic acid	Avoid use due to insufficient data regarding risk to fetus ¹²	Avoid use ¹²
PCSK9 mAb	Avoid use due to insufficient data regarding risk to fetus ¹²	Avoid use ¹²
Inclisiran	Avoid use due to insufficient data regarding risk to fetus ²⁹	Avoid use ²⁹
Evinacumab	Avoid use due to insufficient data regarding risk to fetus ³²	Avoid use ³²
Lomitapide	Avoid use due to risk of embryo-fetal toxicity ³¹	Avoid use ³³



Management of Statin-Attributed Muscle Symptoms



Abbreviations: ASCVD indicates atherosclerotic cardiovascular disease; HDL-C, high-density lipoprotein cholesterol; LDL-C, low-density lipoprotein-cholesterol; PCSK9, Proprotein Convertase Subtilisin/Kexin type 9; Lp(a), lipoprotein A; and mAb, monoclonal antibody.

LDL & Non-HDL-C Goals are Back + Apo B goals

	Examples	LDL C goal	NonHDL C Goal	Apo B goal
Borderline to Intermediate Risk	• 3-<5% or 5-<10% • <3% 10-yr risk but LDL >160 • T2DM without risk factors or ASCVD • CAC 1-99 or mild incidental CAC	<100	<130	<90
High Risk	• >10% 10-yr ASCVD risk • T2DM + risk factors • HeFH without ASCVD • CAC 100-999 • Moderate to severe incidental CAC	<70	<100	<70
Very High Risk	• ASCVD (optional if not very-high risk) • CAC 1000+	<55	<85	<55

Lipoprotein Goals for ASCVD Risk Reduction

Patient population	LDL-C <100 mg/dL (2.6 mmol/L) Non-HDL-C <130 mg/dL (3.4 mmol/L)	LDL-C <70 mg/dL (1.8 mmol/L) Non-HDL-C <100 mg/dL (2.6 mmol/L)	LDL-C <55 mg/dL (1.4 mmol/L) Non-HDL-C <85 mg/dL (2.2 mmol/L)
Primary prevention	PREVENT-ASCVD < 10% • If TG ≥ 150 mg/dL to 499 mg/dL, apoB goal: <90 mg/dL	PREVENT-ASCVD ≥ 10% • If TG ≥ 150 mg/dL to 499 mg/dL, apoB goal: <70 mg/dL	N/A
Severe hypercholesterolemia	Without FH, ASCVD risk factors, and subclinical atherosclerosis	With FH, ASCVD risk factors, and subclinical atherosclerosis	Severe hypercholesterolemia or HeFH with clinical ASCVD
Diabetes	Without ASCVD risk factors or diabetes-specific risk modifiers • apoB goal: <90 mg/dL	Without ASCVD risk factors or diabetes-specific risk modifiers • apoB goal: <70 mg/dL	N/A
Subclinical atherosclerosis	CAC = 1-99 AU and <75 th percentile for age, sex, and race	• CAC ≥ 100 to 299 AU or ≥75 th percentile for age, sex, and race • CAC ≥ 300 to 999 AU – Optional goal: LDL-C <55 mg/dL, non-HDL-C <85 mg/dL, and consider apoB goal <55 mg/dL	CAC ≥ 1000 AU
Hypertriglyceridemia	<50 y old with no additional risk enhancers	• With clinical ASCVD not at very high risk – apoB goal: <70 mg/dL • Age 40-75 y with ≥1 ASCVD risk factor – apoB goal: <70 mg/dL	• With clinical ASCVD at very high risk – apoB goal: <55 mg/dL
Clinical ASCVD	N/A	Not at very high risk • Optional goal: LDL-C <55 mg/dL, non-HDL-C <85 mg/dL, and consider apoB goal <55 mg/dL	• At very high risk – apoB goal: <55 mg/dL • With CKD

Abbreviations: ApoB indicates apolipoprotein B; ASCVD, atherosclerotic cardiovascular disease; AU, Agatston units; CAC, coronary artery calcium; CKD, chronic kidney disease; FH, familial hypercholesterolemia; HDL-C, high-density lipoprotein-cholesterol; LDL-C, low-density lipoprotein-cholesterol; and TG, triglycerides.

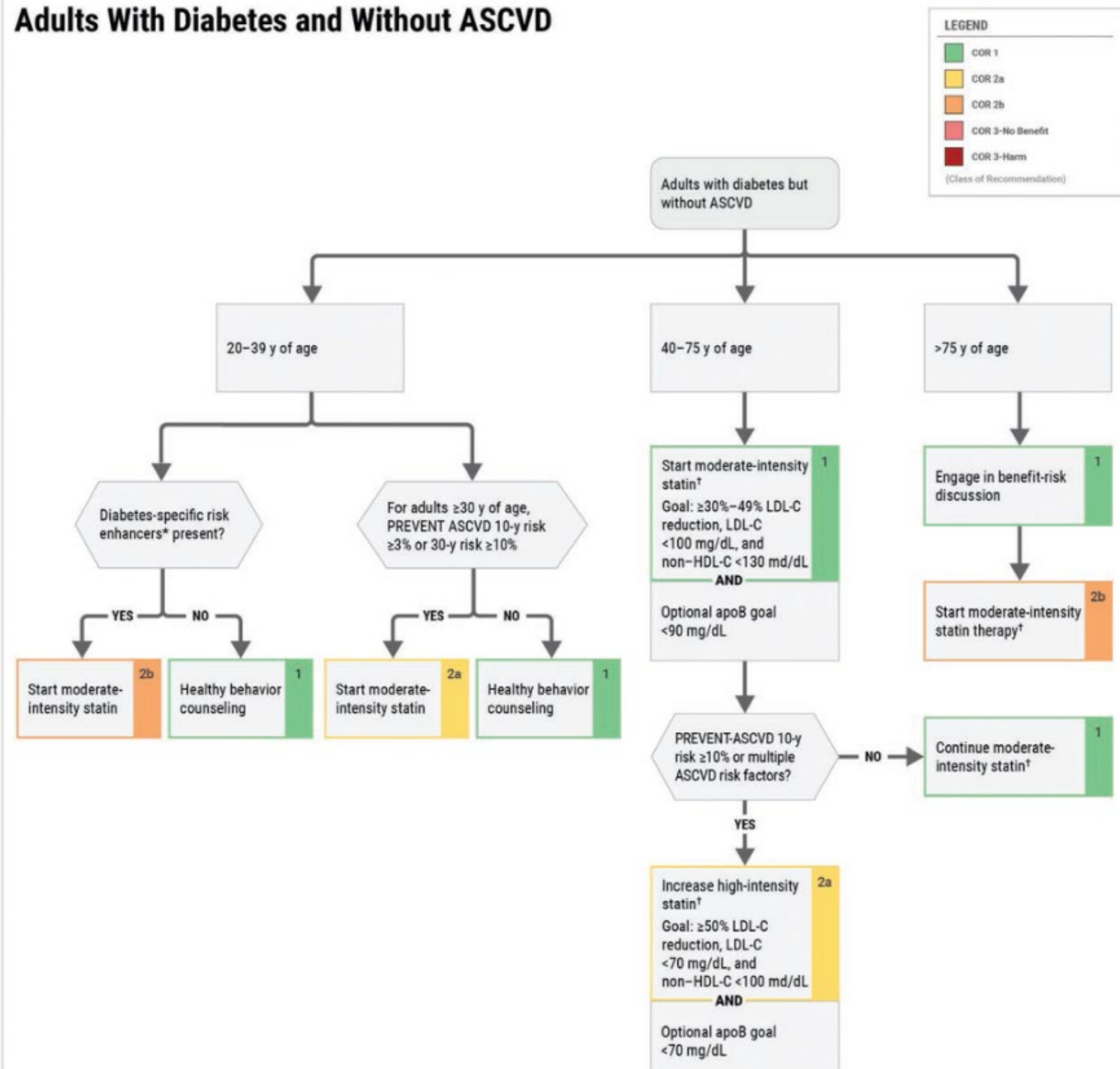
Diabetes- NO ASCVD

COR 1: In adults 40 to 75 y of age with diabetes and without clinical ASCVD, moderate-intensity statin therapy is indicated to achieve $\geq 30\%$ to 49% reduction in LDL-C and a goal of LDL-C < 100 mg/dL (2.6 mmol/L) and non-HDL-C < 130 mg/dL (3.4 mmol/L) to reduce ASCVD risk.

COR 2a: In adults 40 to 75 y of age with diabetes who have multiple ASCVD risk factors, it is reasonable to prescribe high-intensity statin therapy to achieve $\geq 50\%$ reduction in LDL-C and a goal of LDL-C < 70 mg/dL (1.8 mmol/L) and non-HDL-C < 100 mg/dL (2.6 mmol/L) to reduce ASCVD risk.

- **EVERYONE ≥ 40 YO: GETS AT LEAST MODERATE INTENSITY STATIN**
 - Calculate ASCVD risk and up to HIGH intensity if high risk ($\geq 10\%$ PREVENT)
- **20-39y: Moderate intensity if risk factors or PREVENT $\geq 3\%$ 10 yr, $\geq 10\%$ 30 yr**

Adults With Diabetes and Without ASCVD

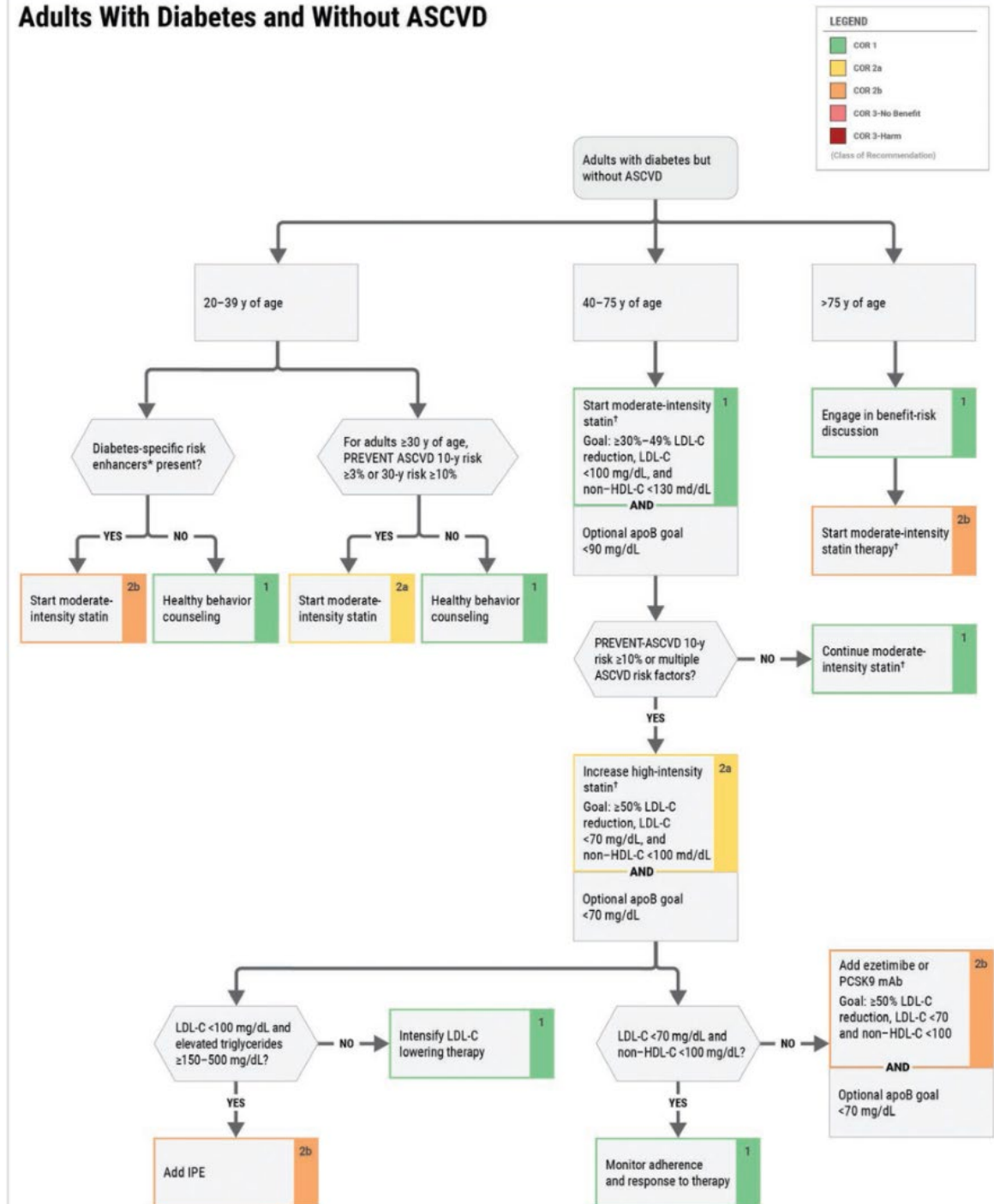


Diabetes

COR 1: In adults 40 to 75 y of age with diabetes and without clinical ASCVD, moderate-intensity statin therapy is indicated to achieve $\geq 30\%$ to 49% reduction in LDL-C and a goal of LDL-C < 100 mg/dL (2.6 mmol/L) and non-HDL-C < 130 mg/dL (3.4 mmol/L) to reduce ASCVD risk.

COR 2a: In adults 40 to 75 y of age with diabetes who have multiple ASCVD risk factors, it is reasonable to prescribe high-intensity statin therapy to achieve $\geq 50\%$ reduction in LDL-C and a goal of LDL-C < 70 mg/dL (1.8 mmol/L) and non-HDL-C < 100 mg/dL (2.6 mmol/L) to reduce ASCVD risk.

Adults With Diabetes and Without ASCVD



Recommendations for Management of Hypertriglyceridemia

COR	RECOMMENDATIONS
1	In adults with persistently elevated triglyceride levels ≥ 150 mg/dL (1.7 mmol/L), after evaluation and management of secondary causes, lifestyle management (consuming a diet that consists of low added sugars, as well as reduced alcohol and saturated fat intake, routine exercise, and weight loss of 5-10% of body weight if overweight or obese) is recommended as first-line approach to reduce triglyceride levels.
1	In adults with clinical ASCVD and LDL-C ≥ 55 mg/dL (1.4 mmol/L) and non-HDL-C ≥ 85 mg/dL on maximally tolerated statin with persistently elevated triglyceride levels ≥ 150 to 999 mg/dL (1.7 to 11.3 mmol/L), intensification of LDL-C lowering therapy is recommended to reduce ASCVD risk.
1	In adults aged 40 to 75 years without a history of ASCVD or diabetes who have persistently elevated triglyceride levels ≥ 150 to 499 mg/dL (1.7 to 5.6 mmol/L), it is recommended to estimate 10-year ASCVD risk by the PREVENT-ASCVD equations to guide the benefit-risk discussion regarding further optimization of diet and lifestyle management as well as the potential initiation of statin therapy to reduce ASCVD risk.

Recommendations for Management of Hypertriglyceridemia (continued)

COR	RECOMMENDATIONS
2b	In adults with clinical ASCVD or with diabetes ≥ 50 years of age and 1 or more ASCVD risk factors, with persistently elevated triglyceride levels ≥ 150 to 499 mg/dL (1.7 to 5.6 mmol/L), and LDL-C < 100 mg/dL (2.6 mmol/L) on maximally tolerated statin, the addition of icosapent ethyl may be reasonable to lower ASCVD risk.
1	In adults aged 40 to 75 years without a history of ASCVD or diabetes who have persistently elevated triglyceride levels ≥ 150 to 499 mg/dL (1.7 to 5.6 mmol/L), it is recommended to estimate 10-year ASCVD risk by the PREVENT-ASCVD equations to guide the benefit-risk discussion regarding further optimization of diet and lifestyle management as well as the potential initiation of statin therapy to reduce ASCVD risk.
2a	In adults with severe hypertriglyceridemia (persistently elevated triglyceride levels ≥ 500 - 999 mg/dL (5.7 to 11.3 mmol/L) and especially with triglyceride levels $\geq 1,000$ mg/dL (11.3 mmol/L) despite dietary intervention, the use of fibric acid derivatives or prescription omega-3 fatty acids is reasonable to lower triglyceride levels and reduce the risk of pancreatitis.
2a	In adults with hypertriglyceridemia (TG ≥ 150 mg/dL), measurement of non-HDL-C or apoB is preferred over LDL-C to guide clinical decision-making.

Lifestyle Management of Hypertriglyceridemia

Recommendations for Lifestyle Management of Hypertriglyceridemia		
Referenced studies that support recommendations are summarized in the Evidence Table.		
COR	LOE	Recommendations
1	A	1. In adults with fasting TG levels of 150 to 499 mg/dL (1.7-5.6 mmol/L), a diet that is low in added sugar, refined carbohydrates, and saturated fat, and that minimizes alcohol (Figure 2) is beneficial to reduce TG and ASCVD risk.
1	B-NR	2. In adults with fasting TG levels of 500 to 999 mg/dL (5.7-11.3 mmol/L), a diet that is low in added sugar, refined carbohydrates, and saturated fat, with no alcohol and individualized limitation of total fat (Figure 2) is beneficial to reduce TG for the reduction of ASCVD risk and risk of pancreatitis.
1	B-NR	3. In adults with fasting TG levels of ≥ 1000 mg/dL (11.3 mmol/L), a diet that is very low in total fat and refined carbohydrates, with elimination of alcohol and added sugars (Figure 2) is beneficial to reduce TG and risk for pancreatitis.
1	B-NR	4. In adults with fasting TG levels ≥ 150 mg/dL (1.7 mmol/L) or nonfasting TG levels ≥ 175 mg/dL (2 mmol/L), improvement in lifestyle factors related to overweight/obesity and CKM syndrome, weight loss of 5% to 10%, moderate-to-vigorous intensity physical activity of ≥ 150 minutes a week, and upper and lower body resistance exercise 2 days/week (Figure 2) are beneficial to reduce TG.

Figure 2. Health Behavior Interventions in Patients With Hypertriglyceridemia.

*Referral to an RDN and lipid specialist advised.
†Referral to an RDN necessary.
‡Clinicians may opt to reduce total fat as a percent of calories in some patients to 10% to 15% (examples include those with a history of pancreatitis or those at the higher end of this range).
§Limitation of total fat to 10% to 15% of total daily intake, with guidance from an RDN is essential for patients with FCS.
¶For those with TG disorders outside of FCS, individually tailored total fat limitation under the guidance of an RDN can be beneficial due to variable response to diet.
|| Although clinicians should aim for a patient to achieve the guideline-directed amount of physical activity, any physical activity is likely beneficial in sedentary individuals and should be encouraged to reduce cardiometabolic risk.

Health Behavior Interventions in Patients With Hypertriglyceridemia

Implemented shared decision-making intervention	TG ≥150 to 499 mg/dL* (1.7 to <5.7 mmol/L)	TG ≥500 to 999 mg/dL* (5.7 to <11.3 mmol/L)	TG ≥1000 mg/dL† (≥11.3 mmol/L)
Added sugars (percent calories)	<6%	<5%	Eliminate
Total fat (percent calories)	30%–35%	20%–25%‡	10%–15%§¶
Alcohol	Avoid	Abstain completely	Abstain completely
Physical activity	At least 150 minutes/week of accumulated moderate-intensity or 75 minutes/week of vigorous intensity aerobic activity (or equivalent combination of both) and 2 days/week of upper and lower body resistance exercise		
Weight loss (percent body weight)	Recommended weight loss goal of 5%–10% for patients who are overweight or obese with elevated TG		



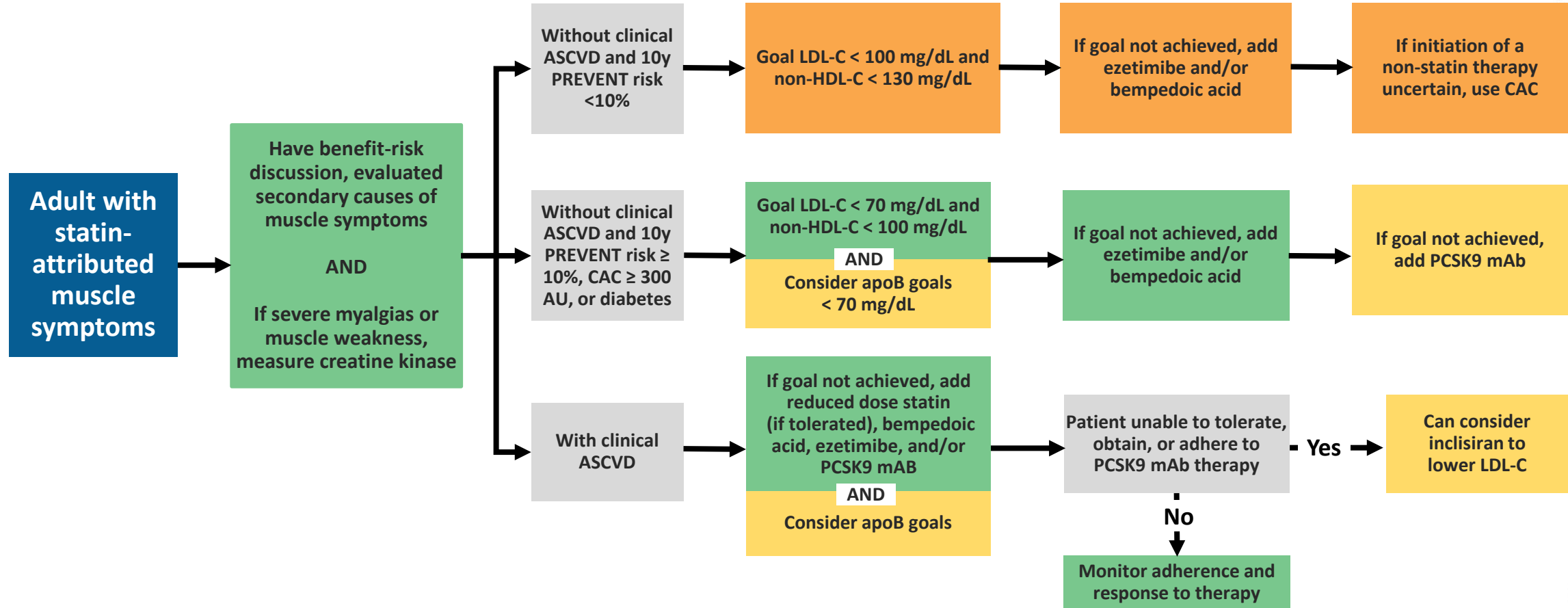
2026 Dyslipidemia

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FCS indicates familial chylomicronemia syndrome; RDN, registered dietitian nutritionist; and TG, triglycerides.

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Management of Statin-Attributed Muscle Symptoms



Abbreviations: ASCVD indicates atherosclerotic cardiovascular disease; HDL-C, high-density lipoprotein cholesterol; LDL-C, low-density lipoprotein-cholesterol; PCSK9, Proprotein Convertase Subtilisin/Kexin type 9; Lp(a), lipoprotein A; and mAb, monoclonal antibody.

PREVENT vs. Pooled Cohort Equation (PCE)

Feature	PCE	PREVENT
Race	Included	Removed (replaced by socioeconomic measures)
Age range	40-75 years	30-79 years
Outcomes	ASCVD	ASCVD+HF+ total CVD
Risk factors	Traditional (cholesterol, BP, diabetes, smoking)	+ BMI, HbA1c, urine albumin-creatinine ratio, social deprivation index, kidney function
Data source	Historical cohorts (~12,500 people)	Contemporary data from more than 6.5 million diverse U.S. adults
Calibration	Tends to overestimate risk in modern populations	Much better calibration, especially in women, nonsmokers, CKD patients, and socially deprived populations