UNDERSTANDING THE 2026 ACC/AHA UPDATE ON DYSLIPIDEMIA GUIDELINES

Ellis Medicine Medical Grand Rounds

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Ellis MEDICINE

St Peter's Health Partners
A Member of Trinity Health

NO DISCLOSURES

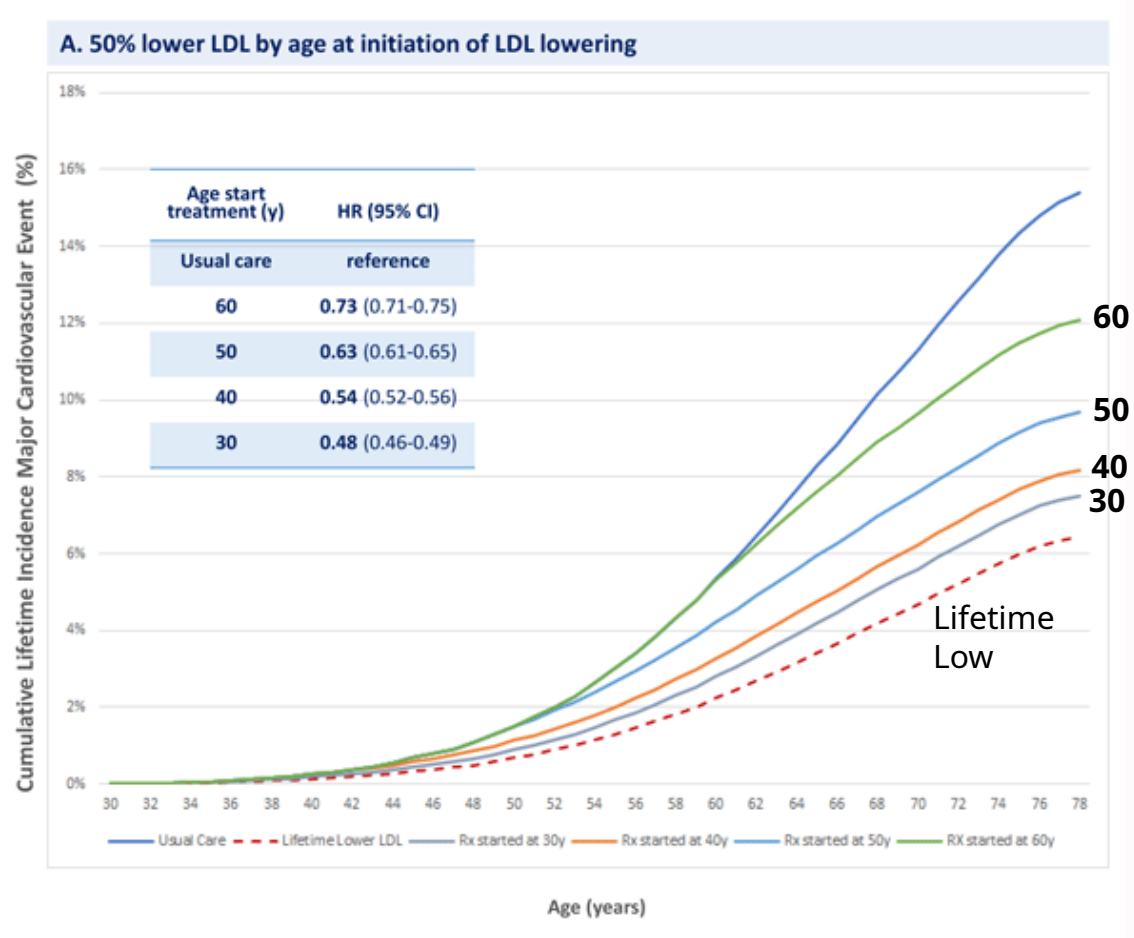
LEARNING OBJECTIVES

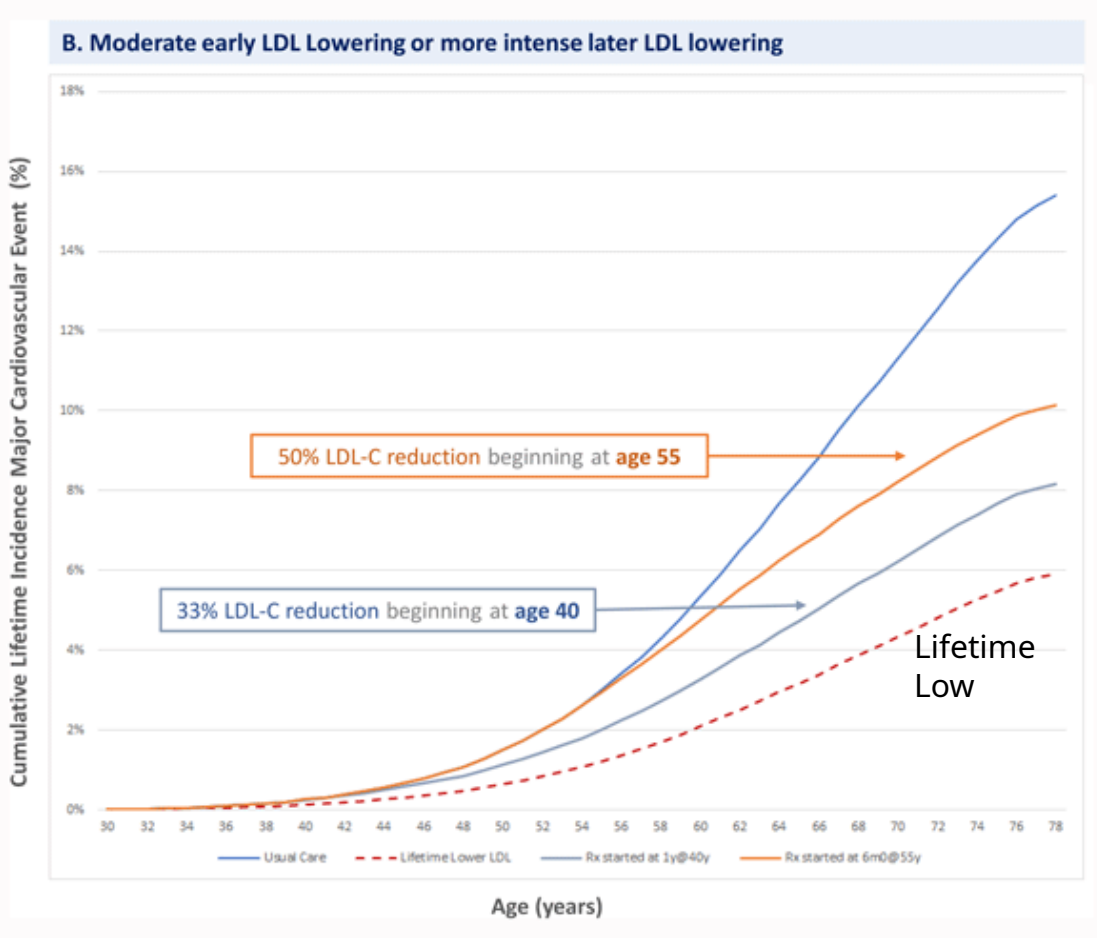
- Understand guidelines for dyslipidemia screening.
- Apply the new PREVENT-ASCVD equation to guide initiation of lipid lowering therapy.
- Identify LDL-C targets for primary and secondary prevention
- Properly utilize coronary calcium scoring for further risk stratification
- Identify high risk populations who require lipid lowering therapy:
  - FH, DM, CKD, HIV, hypertriglyceridemia

SCREENING

- Begin screening **adults at age 19** with a lipid panel and every five years after that. (Class I, level of evidence B)
- Begin screening in **children between ages 9 and 11** to identify familial hypercholesterolemia (FH) and other severe lipid disorders (Class I, level of evidence B)
- In children with first or second degree relatives with FH or other severe lipid disorders, begin screening at **age 2** (Class 2a, level of evidence B)
- **Heterozygous FH affects 1 in 250 to 300 individuals. 90% are not diagnosed.**

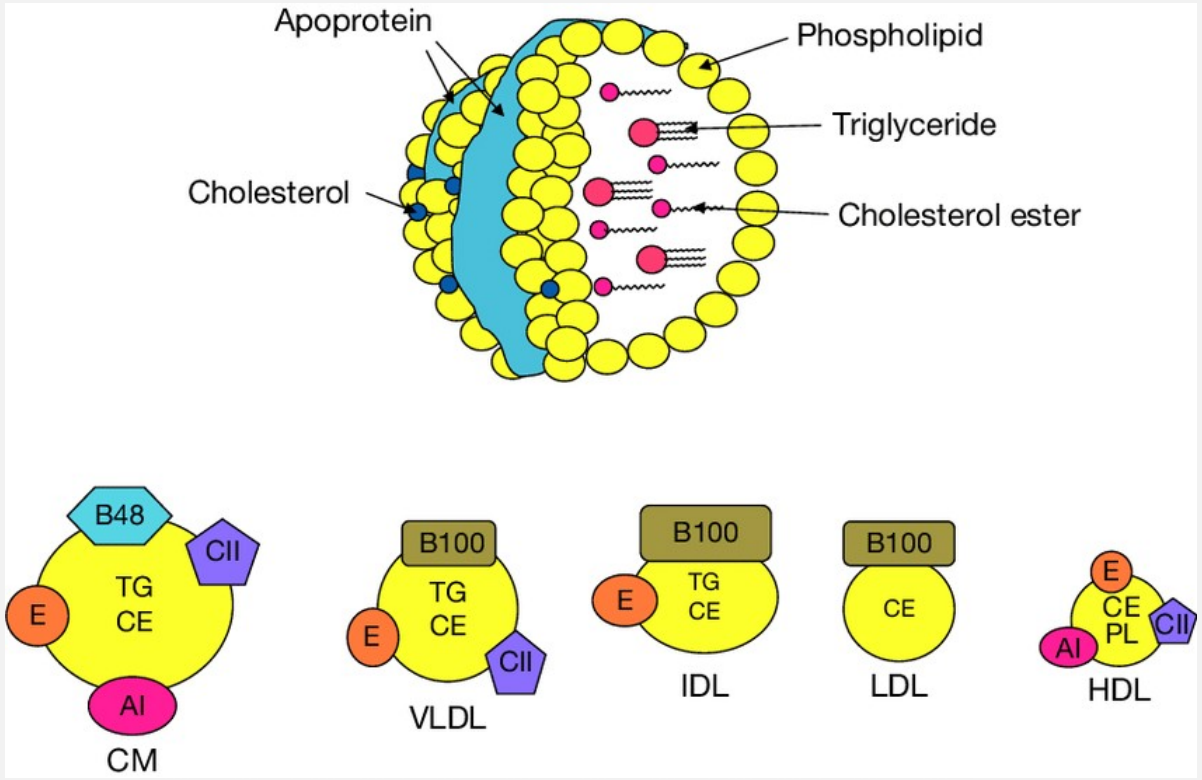
LIFETIME EXPOSURE MATTERS

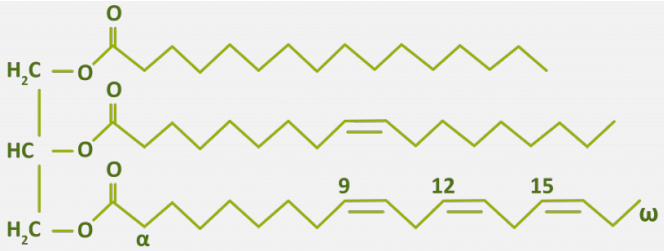




Ray KK. World Heart Federation Cholesterol Roadmap 2022. Glob Heart. 2022 Oct 14;17(1):75.

LET'S TALK ABOUT LIPIDS





TG

Structure of a typical triglyceride molecule, containing a glycerol backbone and three esterified fatty acids varying in chain length and degree of saturation

- Lipid Panel: Total Cholesterol, LDL-C, HDL-C, TG
- **All ApoB containing particles are atherogenic.**
- **LDL-C is the most atherogenic of all ApoB containing particles**
- LDL-C is a calculated value. Traditional measurement by Friedwald Equation is NOT accurate when TG is high or LDL-C is low

Metric (mg/dL): $\text{LDL-C} = \text{Total Cholesterol} - \text{HDL-C} - \left(\frac{\text{Triglycerides}}{5}\right)$.

- nonHDL-C and ApoB in conjunction with lipid panel can mitigate discrepancies in LDL measurement. Better predictor of ASCVD than LDL-C.
- ApoB takes in to account VLDL, IDL and Lp(a)
- Guidelines renamed to management of 'Dyslipidemia,' not 'Cholesterol.'

PRIMARY PREVENTION

Recommendation for PREVENT-ASCVD Equations
Referenced studies that support the recommendation are summarized in the Evidence Table.

COR	LOE	Recommendation
1	B-NR	1. In adults aged 30 to 79 y without ASCVD or subclinical atherosclerosis and with an LDL-C level between 70 and 189 mg/dL (1.8–4.9 mmol/L), the PREVENT-ASCVD equations should be used to estimate 10-y ASCVD risk,[1] with categorization as having low (<3%), borderline (3% to <5%), intermediate (5% to <10%), or high (≥10%) 10-y estimated ASCVD risk.[2]

- Use PREVENT-ASCVD equation to determine 10 year and 30 year risk
- Starting at age 30
- No clinical ASCVD
- No subclinical atherosclerosis
- LDL-C between 70 and 189

PREVENT - ASCVD

Table 12. Crosswalk Between 10-Year Risk ASCVD Estimates From PCE and PREVENT-ASCVD Equations

	Approximate Equivalent Ranges of 10-Year ASCVD Risk Estimates*	
Risk Group	**PCE**	**PREVENT-ASCVD**
Low	<5%	<3%
Borderline	5% to <7.5%	3% to <5%
Intermediate	7.5% to <20%	5% to <10%
High	≥20%	≥10%

* The PREVENT-ASCVD equations generally provide 10-year risk estimates that are 40% to 50% lower than the PCE estimates because the PCE calculator often overestimated the risk for adults.

- More accurate. PREVENT based on population studies > 3 million people. PCE overestimated risk in many individuals.
- 10 year estimates are 40-50% lower than Pooled Cohort Equation for the same risk factor profile.
- Same number of appropriate individuals identified for >3% for PREVENT and >5% for PCE when applied to large data sets.

Cardiovascular-Kidney-Metabolic Syndrome

Estimated **10-year** risk of ASCVD
3.9%

Estimated **30-year** risk of ASCVD
21.7%

Click here for more information on how to interpret the results.

The risk estimates were calculated using the full equations

Print Result View Related Content

Select another outcome

CVD | **ASCVD** | Heart Failure

Sex*
(•) Male ( ) Female

Age (years)*
45

SBP (mmHg)*
150

Total Cholesterol (mg/dL)*
250

HDL Cholesterol (mg/dL)*
40

eGFR (mL/min/1.73m²)*
75

BMI (kg/m²)*
35

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
20 mg/g

HbA1C
HbA1c is clinically indicated for individuals with diabetes, prediabetes, overweight, or obesity, or those with history of gestational diabetes
( ) No (•) Yes
5.9 %

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

90210: 20.3% Beverly Hills
12305: 23.4% City of Schenectady
12309: 20.3% Niskayuna
11373: 23.4% (Flushing, NYC)

Estimator Mode

PREVENT™ | Pooled Cohort

Respond to all questions - this calculator should be used for primary prevention patients (those without ASCVD) only.

10-year ASCVD Risk magnitude calculated using the pooled cohort equation and is no longer supported by ACC clinical policy or guidelines. Please review the current 2026 ACC/AHA/Multisociety Guideline on the Management of Dyslipidemia for information on the PREVENT model, available in this tool.

Age (years)

20-79 yrs

Sex

Female | Male

Race

White | African American | Other

Systolic Blood Pressure (mmHg)

90-200 mmHg

Diastolic Blood Pressure (mmHg)

60-130 mmHg

Unit of Measure

US | SI

Total Cholesterol (mg/dL)

130-320 mg/dL

HDL Cholesterol (mg/dL)

20-100 mg/dL

History of Diabetes

Yes | No

Smoker

Yes | No

Anti-hypertensive medication

Yes | No

ASCVD (Pooled Cohort Equations)*

Estimated **10-year** risk of ASCVD ~%

Estimated **Optimal 10-year** risk of ASCVD ~%

Estimated **Lifetime** risk of ASCVD ~%

Calculate

Reset

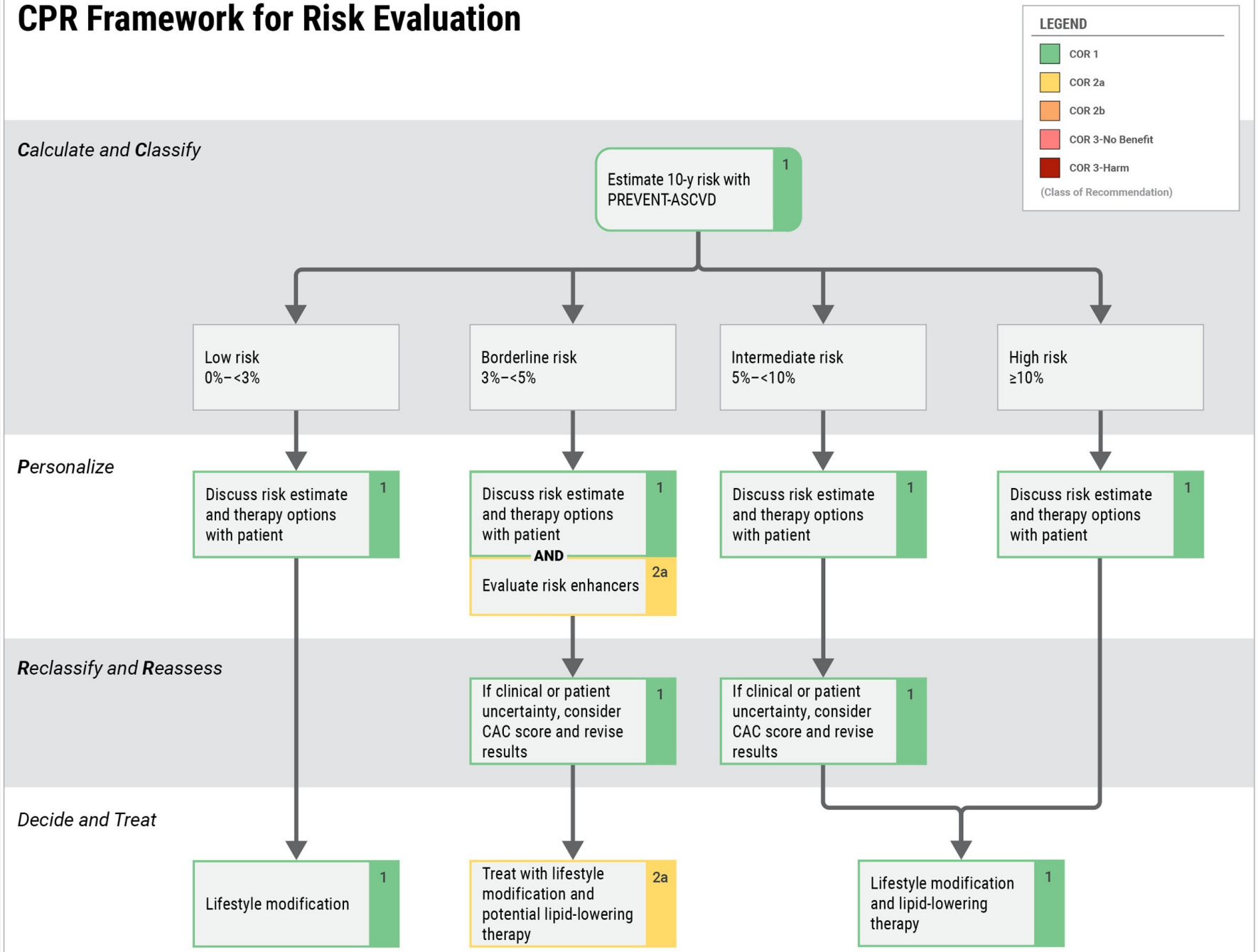
Export

Calculate

Personalize

Reclassify

CPR Framework for Risk Evaluation



2026 Dyslipidemia

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RISK ENHANCERS

For patients at borderline risk (3 to <5%)

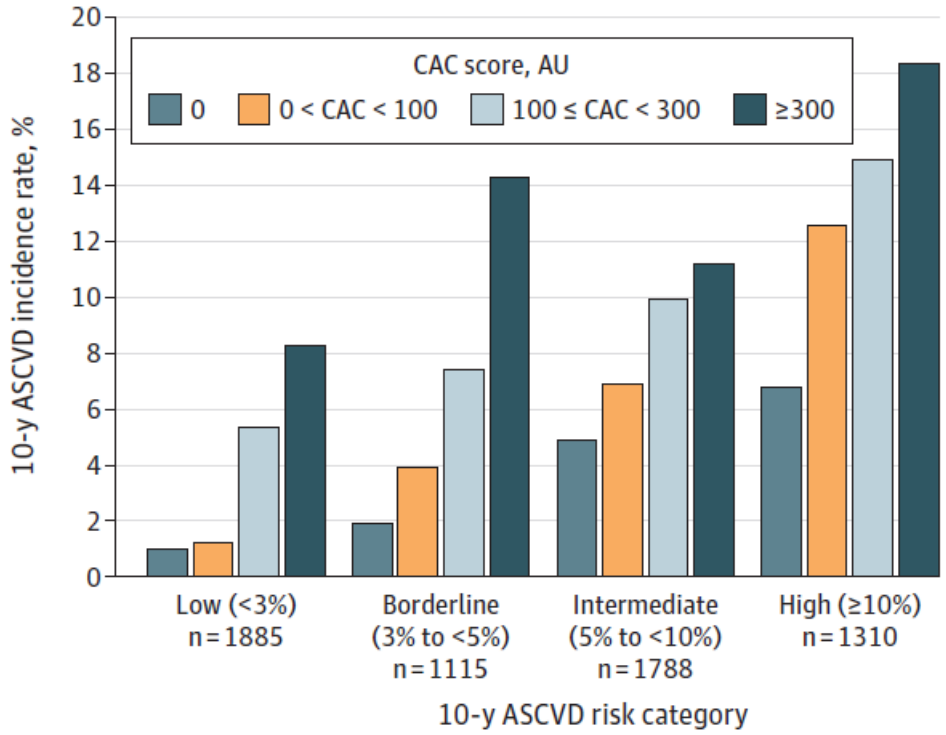
History of premature ASCVD in a parent or sibling (onset age <55 y for men, <65 y for women)
Higher risk ancestry (eg, South Asian, Filipino)
High polygenic risk (if measured) (Section 4.2.3.5, "Polygenic Risk Scores")
Chronic inflammatory diseases (eg, systemic lupus, rheumatoid arthritis, advanced 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
LDL-C persistently ≥160–189 mg/dL (4.1–4.9 mmol/L), non–HDL-C ≥190–219 mg/dL or apoB ≥120 mg/dL*
Reproductive risk markers (premature menopause, preeclampsia, gestational diabetes, gestational hypertension, preterm delivery;

CORONARY ARTERY CALCIUM SCORE (CAC)

- Can be used to further risk stratify patients at borderline/intermediate risk
- Men age >40, women age >45
- ~40% of intermediate-risk adults have CAC=0, ~25% of intermediate-risk participants may have CAC ≥100
- Not to be used in high risk populations with high burden of noncalcified plaque: diabetics, smokers, those with FH, HIV, inflammatory conditions.
- Adults with CAC ≥300 experience ASCVD event rates that are similar to adults with established, treated ASCVD. Adults with CAC ≥1000 experience event rates that were more than double those with CAC 400 to 999. (CAC consortium)
- Percentage and distribution is also important for risk stratification, not just the score
- Coronary CTA emerging imaging modality to quantify noncalcified plaque

CAC NOT A STARTING POINT FOR SCREENING

Figure 3. Bar Graph of the 10-Year ASCVD Event Rates Stratified by Risk Category by PREVENT-ASCVD Base Equations and CAC Prevalence



Participant No. (%) per risk category and CAC score

CAC score, AU				
0	1463 (77.6)	627 (56.2)	740 (41.4)	293 (22.4)
0 < CAC < 100	329 (17.5)	337 (30.2)	563 (31.5)	389 (29.7)
100 ≤ CAC < 300	57 (3.0)	95 (8.5)	243 (13.6)	261 (19.9)
≥300	36 (1.9)	56 (5.0)	242 (13.5)	367 (28.0)

Participants are stratified by 10-year atherosclerotic cardiovascular disease (ASCVD) risk category (low, borderline, intermediate, high) as calculated by the Predicting Risk of Cardiovascular Disease EVENTS (PREVENT) ASCVD base equations. AU indicates Agatston unit and CAC, coronary artery calcium.

- 6 thousand participants followed over 10 years from MESA cohort.
- CAC + PREVENT-ASCVD Risk score across all risk groups only showed modestly improved discrimination.
- With addition of CAC, 18% of sample correctly reclassified, 4% misclassified.
- CAC scoring most beneficial for patients at borderline risk for reclassification.

Huang X. Predictive Utility of Coronary Artery Calcium Score Added to the PREVENT Atherosclerotic Cardiovascular Disease Equations. JAMA. 2026 Aug 26.

LIPOPROTEIN (A)

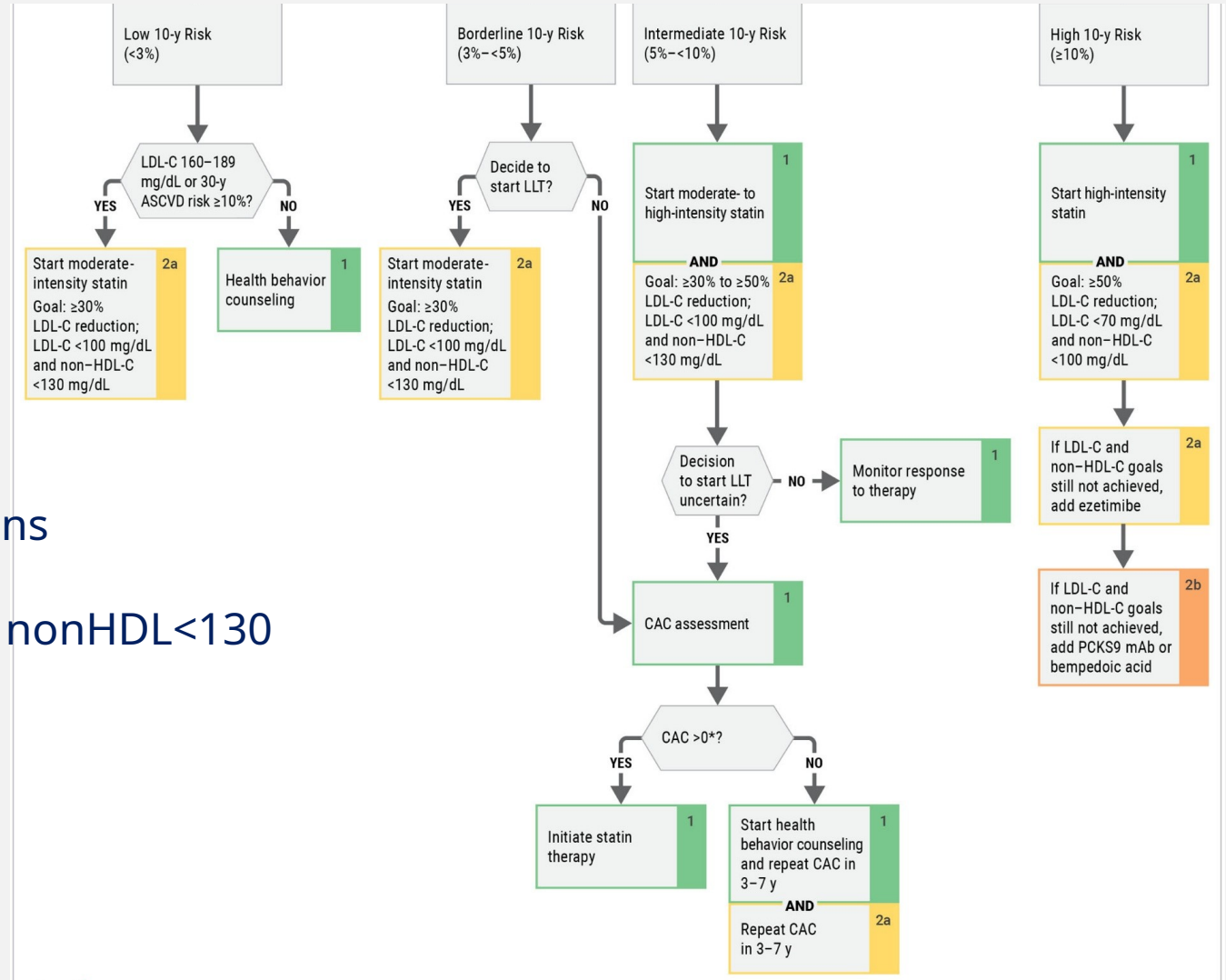
- Atherogenic, prothrombotic, pro-inflammatory
- Everyone should get Lp(a) measured once in their lifetime (Class I,B)

Lp(a) concentration nmol/L (mg/dL)	ASCVD Relative Risk: Increase Compared With Population Median (20 nmol/L, 7 mg/dL)
430 nmol/L (180 mg/dL)	4-fold
350 nmol/L (150 mg/dL)	3-fold
250 nmol/L (100 mg/dL)	2 -fold
125 nmol/L (50 mg/dL)	1.4-fold
75–124 nmol/L (30-49 mg/dL)	1.2-fold
<75 nmol/L (<30 mg/dL)	Reference

PRIMARY PREVENTION: AGE30-79, LDL 70-189

- Consider 30 yr risk

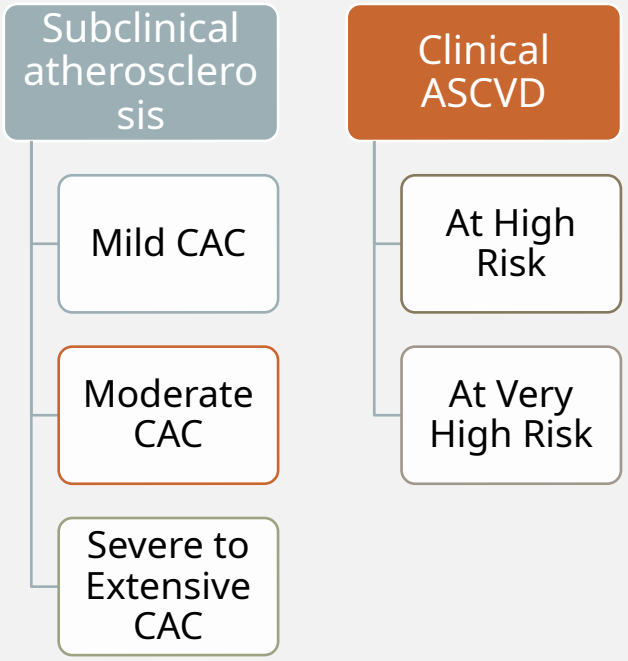
- LDL>160, start statins
- 3 to <10% risk
  - goal LDL <100, nonHDL<130



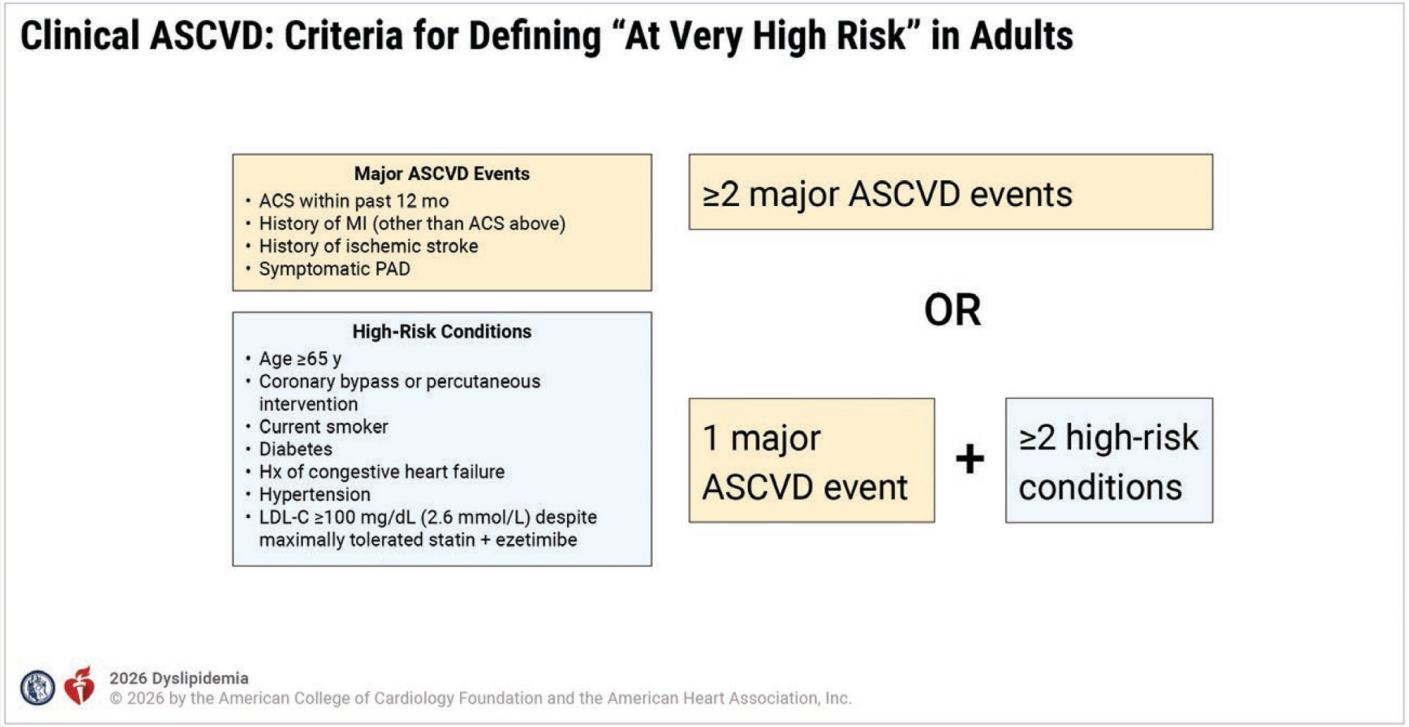
- High risk, goal >50% LDL reduction or LDL-C <70, nonHDL-C <100

- Add on nonstatin therapies including ezetimibe, PCSK9 inhibitors or bempedoic acid to achieve goal

SECONDARY PREVENTION



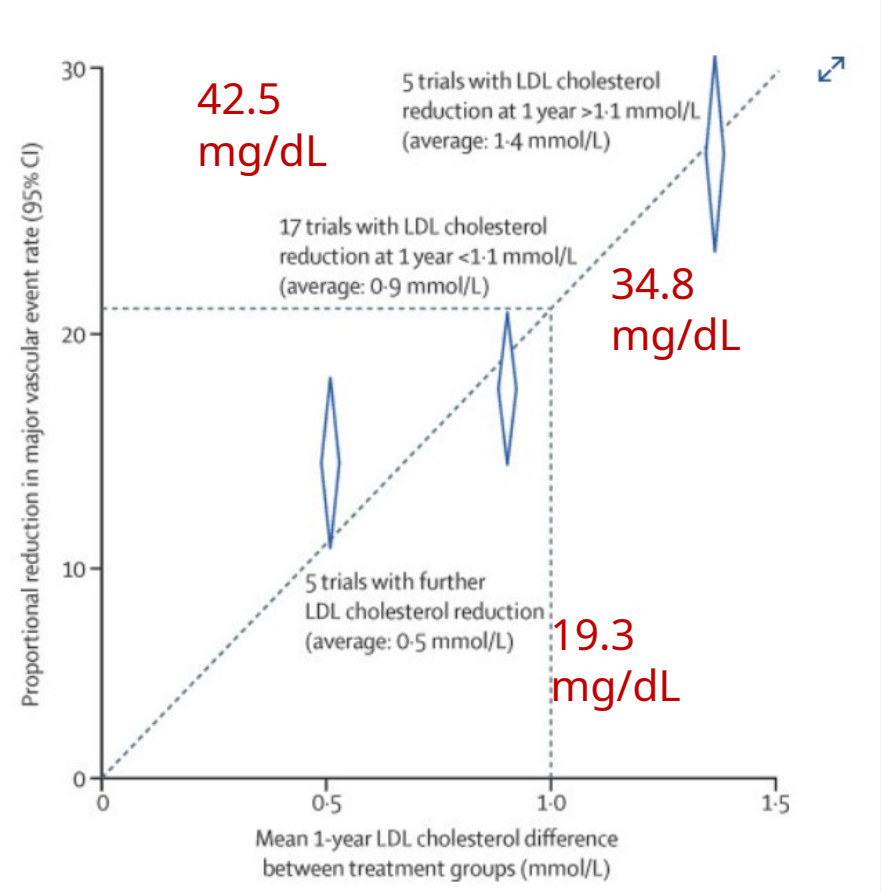
CLINICAL ASCVD

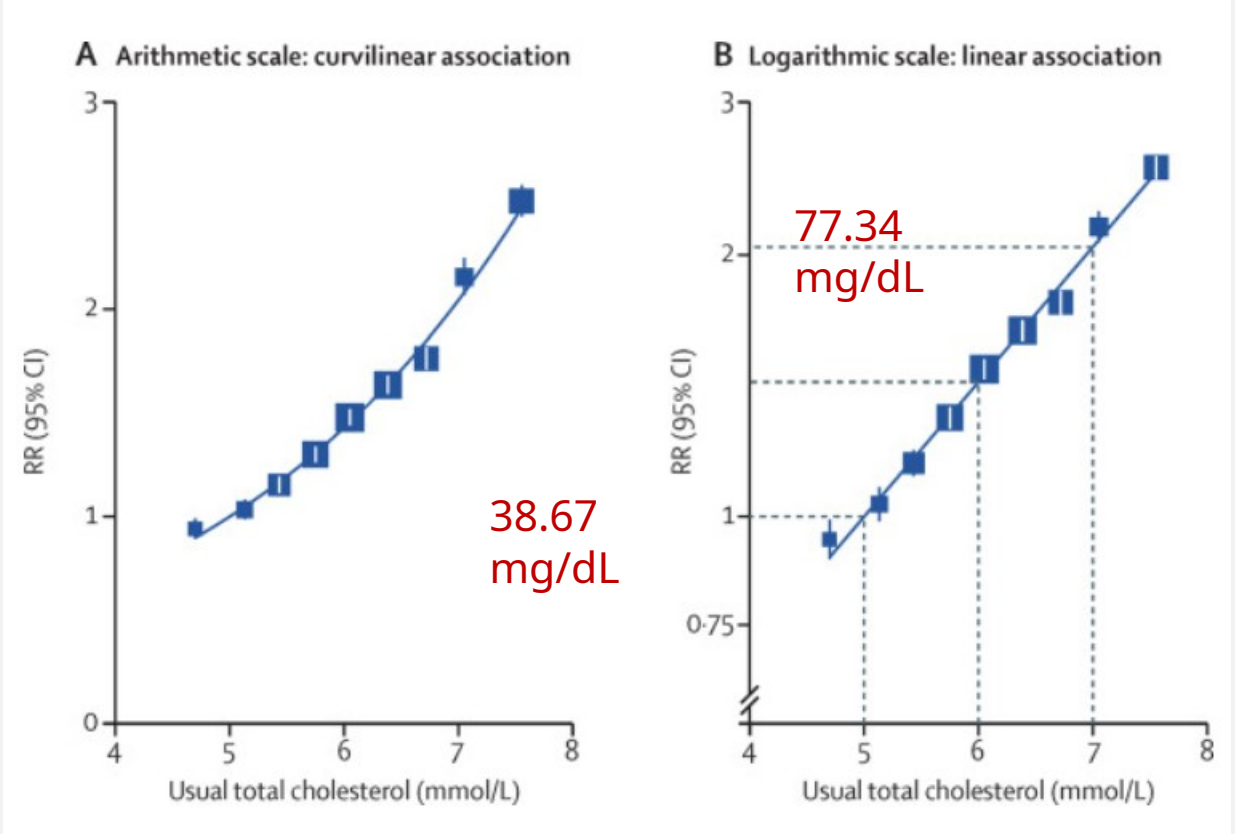


High Risk	Very High Risk
LDL-C < 70	LDL-C < 55
Apo B < 70	Apo B < 55
nonHDL-C < 100	nonHDL-C < 85

LDL-C targets take in to account multiple RCTs with outcome benefits.
Class IA

STATIN TRIALS

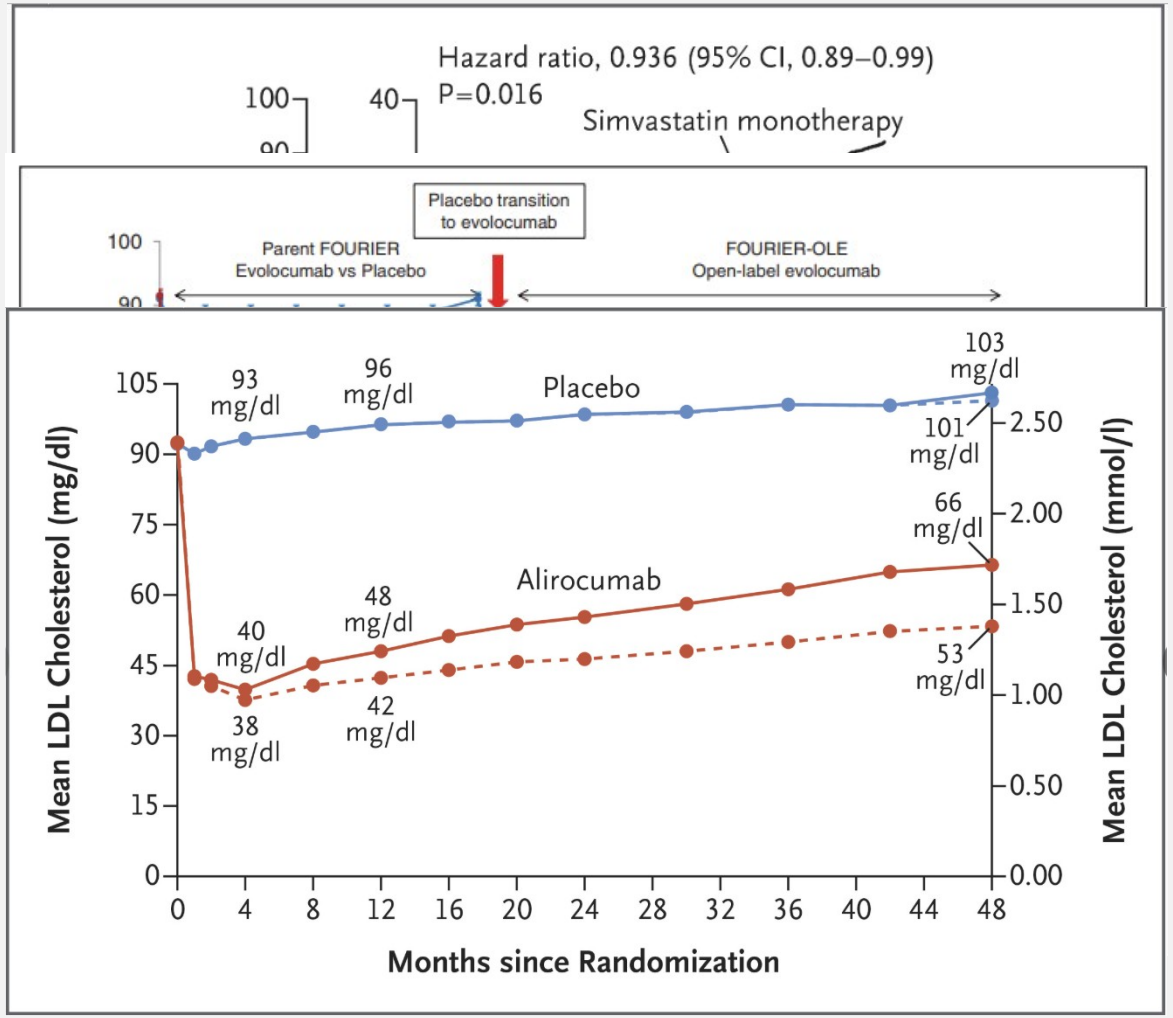




Consistent linear reduction in MACE as LDL-C decreases.

Collins R, Reith C, Emberson J et al. **Interpretation of the evidence for the efficacy and safety of statin therapy.** The Lancet, 2016; 388, 2532-2561

NON-STATIN TRIALS

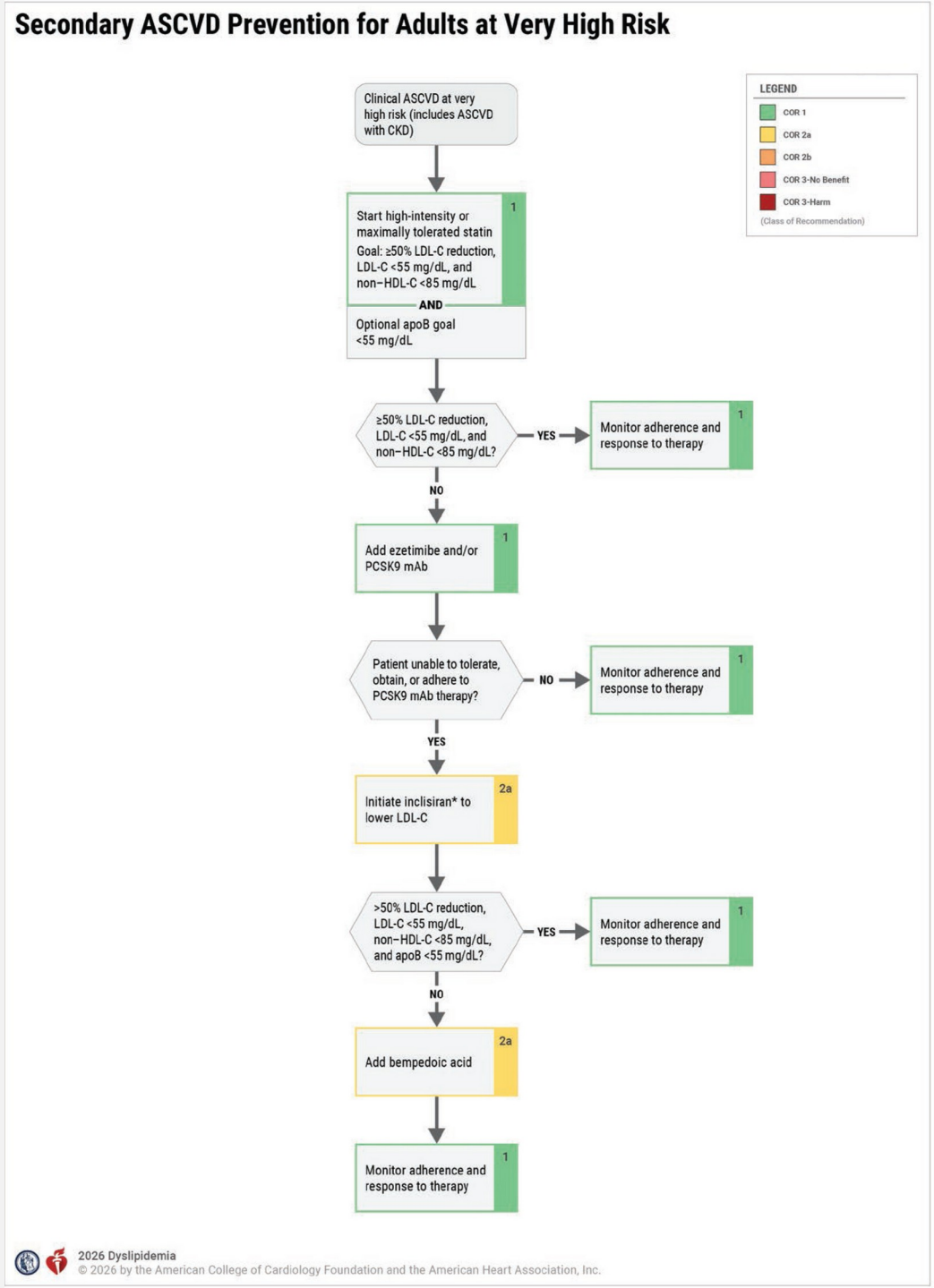


- IMPROVE-IT: Ezetimibe + simvastatin. Average LDL 53.7. With simvastatin alone, average LDL 70
- FOURIER: Evolocumab + standard therapy. Average LDL ~30
- ODYSSEY-OUTCOMES: Alirocumab + standard therapy. Average LDL ~38 to 53

Cannon CP. Ezetimibe Added to Statin Therapy after Acute Coronary Syndromes. N Engl J Med. 2015 Jun 18;372(25):2387-97.

O'Donoghue ML. Long-Term Evolocumab in Patients With Established Atherosclerotic Cardiovascular Disease. Circulation. 2022 Oct 11;146(15):1109-1119.

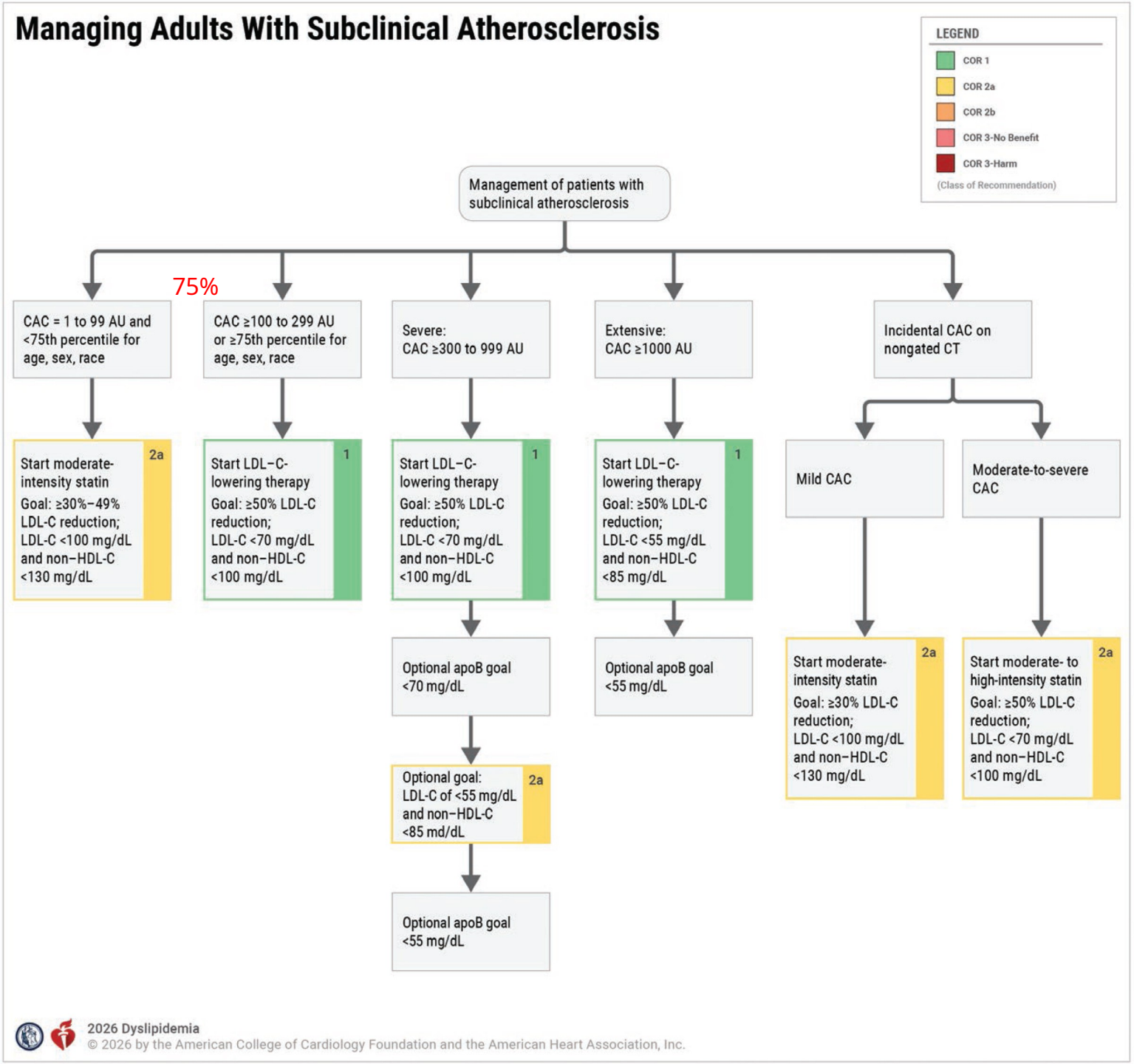
Schwartz GG. Alirocumab and Cardiovascular Outcomes after Acute Coronary Syndrome. N Engl J Med. 2018 Nov 29;379(22):2097-2107.



MEDICATION STEPS

- Outcome trials with inclisiran have not been published yet (results of ORION-4 expected in early 2027)
- Clear OUTCOMES trial did not combine statin and bempedoic acid (administered to statin intolerant patients). Lowers LDL about 20%
- Clinical practice:

Statin → Ezetimibe → Bempedoic Acid → PCSK9i (inj/oral) → Inclisiran



SUBCLINICAL ATHEROSCLEROSIS

- ≥ 300 Agatston Units in SEVERE
- ≥1000 Agatston Units is EXTENSIVE

Medication Management:

- Severe CAC = High Risk ASCVD
- Extensive CAC = At Very High Risk ASCVD

SEVERE HYPERCHOLESTEROLEMIA

- LDL-C > 189? Clinical heterozygous familial hypercholesterolemia, especially if noted in young adults
- Careful evaluation of secondary causes (diet, metabolic factors, medications)
- Using PREVENT-ASCVD equation is CLASS 3 = HARM
- Heterozygous FH increases ASCVD risk 2-4 fold in the general population. Diagnosed at age < 35? 17 fold increased risk!
- Start statin therapy
- No clinical ASCVD events: Goal LDL-C <100
- Subclinical atherosclerosis or ASCVD risk factors: Goal LDL-C < 70
- Clinical ASCVD: Goal LDL-C < 55
- Low threshold for referring to a lipid specialist

HYPERTRIGLYCERIDEMIA

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		

Lifestyle changes can lower TG from 20% to 50% !!!

2026 Dyslipidemia
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MANAGEMENT

- Identify secondary causes of elevated triglycerides (DM, drugs, alcohol, hypothyroid, nephrotic syndrome, lipodystrophy)
- Risk stratify according to PREVENT - ASCVD calculator
- Statins first
- If ASCVD, Icosapentethyl next
- Use Apo B and non HDL-C as targets (more accurate)
- If persistent TG > 500 - 999, add fibrates to reduce risk of pancreatitis
- Refer to lipid specialist!
- Olezarsen and plozasiran – new medications for Familial Chylomicronemia Syndrome (for TG >1000)

ELEVATED LP(A)

COR	LOE	Recommendations
1	B-NR	1. In all individuals with elevated Lp(a) (≥125 nmol/L or ≥50 mg/dL), optimal early control of modifiable cardiovascular risk factors is recommended to reduce ASCVD risk.[1–4]
1	B-R	2. In individuals with clinical ASCVD and elevated Lp(a) who have not achieved LDL-C and non–HDL-C treatment goals on maximally tolerated statin therapy, the addition of a PCSK9 mAb with proven cardiovascular benefit is recommended to achieve treatment goals and reduce ASCVD risk.[4–7]

- LDL lowering therapy remains the cornerstone of treatment
- If clinical ASCVD, consider PCSK9i after statin therapy.
- Pelacarsan (reduces Lp(a) by 80%) did not reduce MACE. Full trial results have not been published.
- Multiple other Lp(a) lowering agents in clinical trials right now.

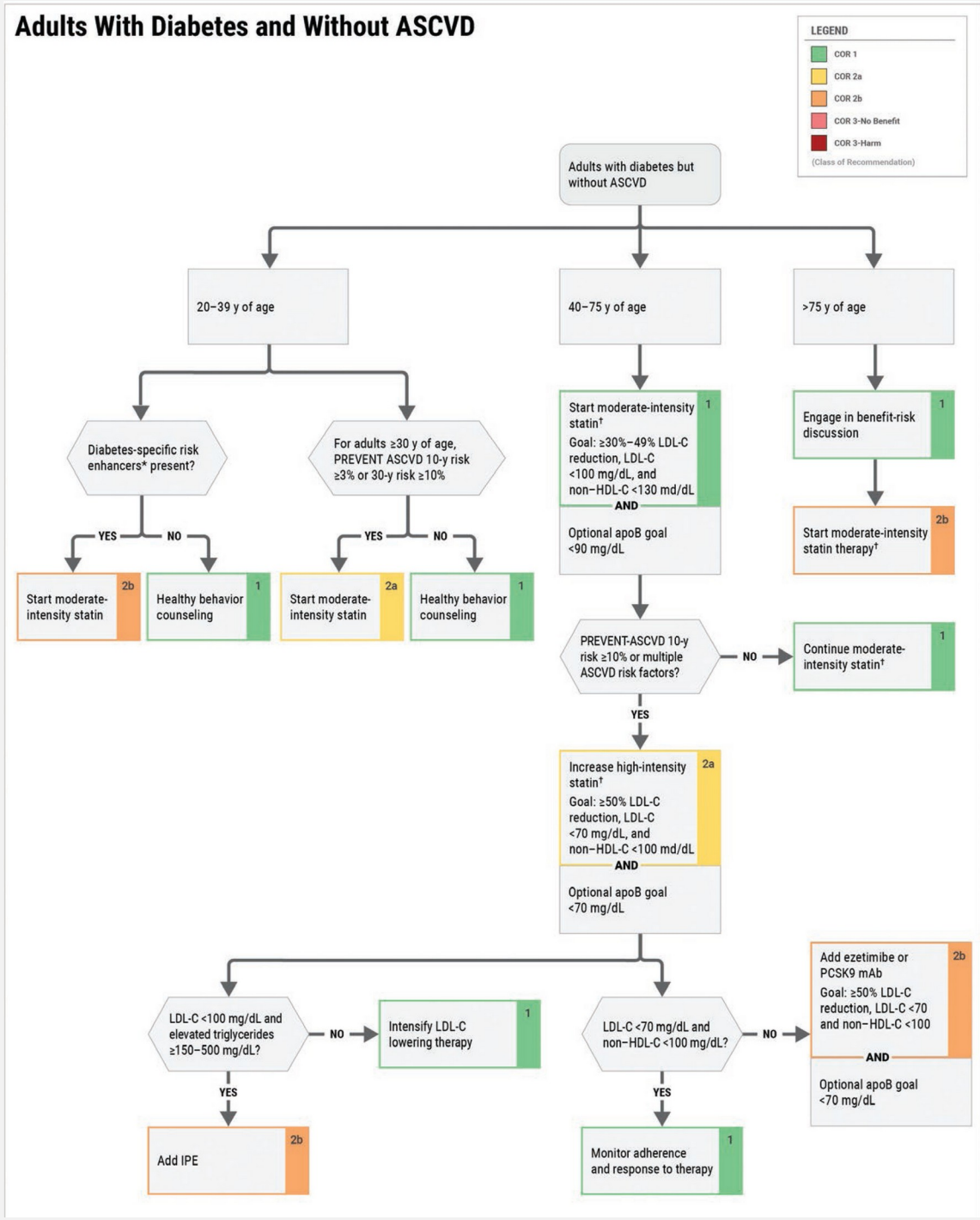
COMMON CHRONIC CONDITIONS

- Diabetes Mellitus
- Chronic Kidney Disease
- HIV

All recommended to be treated with statins/lipid lowering therapy

DIABETES

- Consider statins from age 20 if presence of risk enhancers.(2b)
- Age 30 – 39
  - ≥ 3% - consider statin therapy
- Age ≥ 40
  - Everyone should be on statin therapy
  - <10% Risk: LDL-C <100, ApoB<90
  - ≥10% Risk: LDL-C <70, Apo B <70
  - Add nonstatin therapies to achieve goal



DIABETES SPECIFIC RISK ENHANCERS

Risk Enhancers
Long duration (≥10 y for type 2 diabetes or ≥20 y for type 1 diabetes)
Albuminuria ≥30 μg of albumin/mg creatinine
eGFR <60 mL/min/1.73 m^2
Retinopathy
Neuropathy
ABI <0.9

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ABI indicates ankle-brachial index; and eGFR, estimated glomerular filtration rate.

CHRONIC KIDNEY DISEASE

COR	LOE	Recommendations
1	B-R	1. In adults 40 to 75 y of age with CKD stage 3 or higher and an LDL-C of 70 to 189 mg/dL (1.8–4.9 mmol/L), moderate-intensity statin therapy or moderate-intensity statin combined with ezetimibe is recommended to reduce ASCVD risk.[1,2]
1	B-R	2. In adults with CKD stage 3 or higher and clinical ASCVD, LLT with high-intensity statin therapy, with or without ezetimibe and/or a PCSK9 mAb, is recommended to achieve a ≥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.[1,3]
2b	C-LD	3. 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 with consideration of expected survival, other comorbidities, and severity of ASCVD.[1]

- People with moderate CKD (GFR < 60) not on dialysis have a similar risk of ASCVD events as those with established ASCVD.
- CKD 3 and higher -> moderate intensity statin
- CKD 3 and clinical ASCVD -> goal LDL-C < 55
- Atorvastatin preferred, since rosuvastatin in renally cleared.
- Initiation of statin on dialysis patients – no proven benefit.
  If already on statins, continue. Consider age, life expectancy, reason for kidney disease and other co-morbidities.

HIV

COR	LOE	Recommendation
1	B-R	1. In people living with HIV aged 40 to 75 y 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.[1]

- People living with HIV are more prone to insulin resistance, lipodystrophy, dyslipidemia.
- Pitavastatin does not require dose adjustments.
- Lovastatin/simvastatin contraindicated with all protease inhibitors.

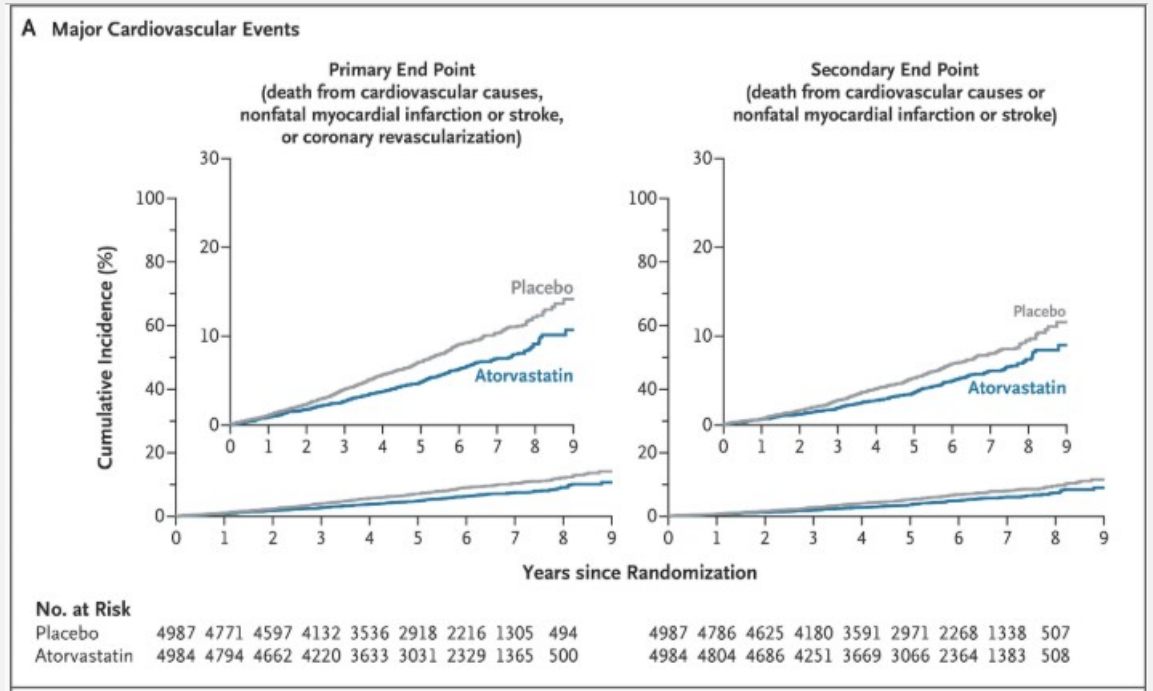
CANCER

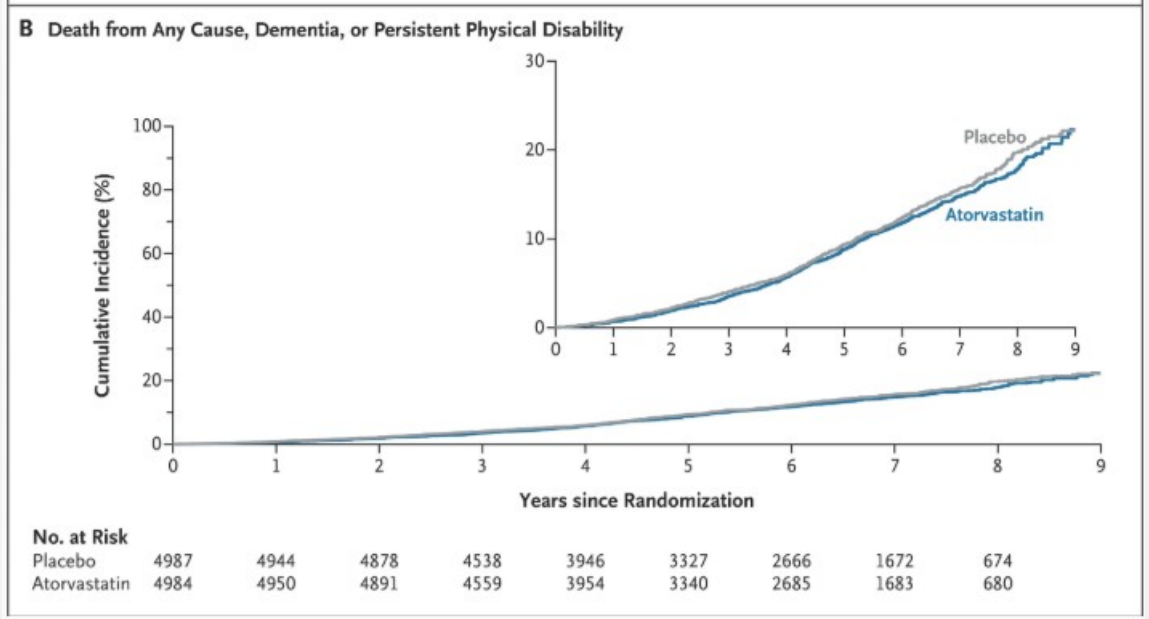
1	B-NR	1. Adult cancer survivors with life expectancy of at least 2 y who otherwise qualify for LLT should be treated similarly to people without history of cancer to reduce the risk of ASCVD events.[1–6]
1	B-NR	2. In adults with active cancer currently on statin therapy, treatment should be continued to reduce ASCVD risk unless there is concern for a specific drug interaction or life expectancy is <1 y.[7–9]
2b	B-R	3. In adults with active cancer, initiation of statin therapy may be considered to prevent anthracycline-induced cardiotoxicity.[10]

- People with cancer or history of cancer are more likely to discontinue statins

OLDER ADULTS (>75 YRS)

- Lack of robust RCT data at time of guideline publication
- Risk-benefit discussion considering functional status, life expectancy, polypharmacy, patient preference
- Typically need to treat someone for 2.5 years to decrease MACE in primary prevention
- Available data shows decreased event rate but not decreased mortality
- If life expectancy > 2.5 years, reasonable to initiate lipid lowering therapy (2b)
- If life expectancy < 1 year, from nonatherosclerotic conditions, ok to discontinue lipid lowering therapy. (2b)





STAREE TRIAL

- Statins in Reducing Events in the Elderly (STAREE)
- ~10,000 participants in Australia ≥ age 70 followed for about 6 years.
- Randomized control trial – atorvastatin 40mg v. placebo
- Significant decrease in MACE, including death from cardiovascular causes
- NO difference in All cause death, dementia, or persistent physical disability

Zoungas, S. Atorvastatin, Cardiovascular Events, and Disability-free Survival in Older Adults. N Engl J Med. 2026 Aug 29.

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, or subclinical atherosclerosis	Severe hypercholesterolemia or HeFH with clinical ASCVD
Diabetes	**Without** ASCVD risk factors or diabetes-specific risk modifiers • apoB goal: <90 mg/dL	**With** ASCVD risk factors or diabetes-specific risk factors • apoB goal: <70 mg/dL	N/A
Subclinical atherosclerosis	CAC = 1–99 AU and <75th percentile for age, sex, and race	• CAC ≥100 to 299 AU or ≥75th percentile for age, sex, 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

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KEY TAKEAWAYS

- Start earlier and treat longer to lower lifetime LDL exposure
- Apply PREVENT-ASCVD equation as a starting point for primary prevention
- Further risk stratification with Apo B, Lipo (a) and coronary calcium score
- LDL-C targets are back! Lower LDL targets for primary prevention and ASCVD
- Stratification of ASCVD into sub groups: subclinical, high risk, very high risk
- Emphasize lifestyle when managing hypertriglyceridemia. LDL-C still the first target.
- Universal Lp(a) screening once in a lifetime – LDL remains target of therapy
- DM, CKD, HIV – always treat with statins if baseline LDL level > 70mg/dL

QUESTIONS?

If in doubt,
refer to your friendly, neighborhood lipid specialist!