

Primary Prevention of CVD • Algorithm

Lifestyle, lipids, BP, diabetes & aspirin for primary ASCVD prevention · point-of-care reference for internal medicine

- Class I – recommended
- IIa – reasonable
- IIb – may consider
- III: Harm – do not use

1 First: Estimate 10-year ASCVD risk adults 40–75 y · race/sex-specific Pooled Cohort Equations

▲ **Risk discussion before pharmacotherapy.** PCE may over- or under-estimate risk (e.g. South Asian ancestry, HIV, autoimmune disease, lower SES). Always pair with a clinician–patient discussion. **Age 20–39:** assess risk factors q4–6 y, emphasise lifestyle, estimate lifetime risk. **Age >75:** individualised discussion, comorbidities & life-expectancy guide statin continuation/initiation.

LOW <5% Emphasise healthy lifestyle. I	BORDERLINE 5 to <7.5% Risk discussion; risk-enhancers may justify moderate-intensity statin. IIb	INTERMEDIATE ≥7.5 to <20% Moderate-intensity statin to ↓LDL 30–49%. I · Risk-enhancers favour statin IIa	HIGH ≥20% High-intensity statin to ↓LDL ≥50%. I
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RISK-ENHANCING FACTORS FH premature ASCVD (M<55, F<65) · primary LDL 160–189 · CKD (eGFR 15–59) · metabolic syndrome · chronic inflammatory dz (psoriasis, RA, lupus, HIV) · premature menopause · preeclampsia · South Asian ancestry · persistently ↑TG ≥175 · hs-CRP ≥2.0 · Lp(a) ≥50 mg/dL or ≥125 nmol/L · apoB ≥130 · ABI <0.9	CAC FOR BORDERLINE / INTERMEDIATE – IF DECISION UNCERTAIN IIA CAC = 0: withhold statin, reassess in 5–10 y (unless DM, FH premature CHD, or current smoker). CAC 1–99: favours statin, especially age ≥55. CAC ≥100 or ≥75th centile: initiate statin.
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2 Lifestyle — foundation for all adults single most important intervention

DOMAIN	TARGET / WHAT TO DO	RECOMMEND	AVOID / III: HARM
Diet	Vegetables, fruits, legumes, nuts, whole grains, fish. Replace SFA with MUFA/PUFA. Reduce cholesterol & sodium. Minimise processed meats, refined carbs & sweetened beverages.	I diet pattern · IIa fat swap, ↓sodium, ↓processed	III: Harm Trans fats
Physical activity	≥150 min/wk moderate or ≥75 min/wk vigorous aerobic activity. Counsel at routine visits.	I counsel · I meet target · IIa some > none	IIb ↓sedentary time
Weight	BMI & weight loss in overweight (25–29.9) / obesity (≥30). Counselling + calorie restriction; comprehensive lifestyle program ≥6 mo.	I weight loss · I lifestyle program · I annual BMI	IIa Waist circumference (M ≥102 cm, F ≥88 cm)
Tobacco	Assess at every visit. Firmly advise to quit. Behavioural intervention + pharmacotherapy (NRT, bupropion, varenicline). ENDS not recommended as cessation aid.	I assess · I advise · I combo Rx · I cessation ↓ASCVD	III: Harm 2nd-hand smoke

3 Cholesterol — statin algorithm adults 20–75 y · adapted from 2018 Cholesterol Guideline

LDL-C ≥190 MG/DL (≥4.9 MMOL/L) I Maximally tolerated statin at any age 20–75 – no risk assessment needed. Severe hypercholesterolaemia phenotype; consider FH workup.	DIABETES MELLITUS 40–75 Y I IIA Moderate-intensity statin regardless of 10-yr risk. High-intensity (↓LDL ≥50%) if multiple ASCVD risk factors or DM-specific enhancers (≥10 y duration T2DM, albuminuria, eGFR <60, retinopathy, neuropathy, ABI <0.9). IIa
ADULTS 40–75 Y, LDL 70–<190, NO DM – BY 10-YEAR ASCVD RISK Intermediate (7.5–<20%): moderate-intensity statin, ↓LDL ≥30% I ; risk-enhancers favour initiation or intensification IIa . High (≥20%): high-intensity statin, ↓LDL ≥50% I . Borderline (5–<7.5%): risk discussion; if risk-enhancers present, moderate-intensity statin IIb . CAC if uncertain: 0 → withhold (unless DM, FH, smoker); 1–99 → favours statin (esp. ≥55 y); ≥100 / ≥75th centile → initiate. IIa	
HIGH-INTENSITY STATIN (↓LDL ≥50%) Atorvastatin 40–80 mg · Rosuvastatin 20–40 mg	MODERATE-INTENSITY STATIN (↓LDL 30–49%) Atorvastatin 10–20 mg · Rosuvastatin 5–10 mg · Simvastatin 20–40 mg · Pravastatin 40–80 mg · Lovastatin 40 mg · Pitavastatin 1–4 mg

4 Blood pressure — thresholds & targets adapted from 2017 Hypertension Guideline

NORMAL <120/80 Promote optimal lifestyle habits.	ELEVATED 120–129 / <80 Nonpharmacological therapy. I	STAGE 1 130–139 / 80–89 Nonpharm; add drug if ASCVD risk ≥10% (or CKD, DM, age ≥65). I	STAGE 2 ≥140/90 Nonpharm + BP-lowering drug. I
TARGET BP I <130/80 mm Hg if ASCVD risk ≥10%, CKD, T2DM, or established CVD. Same target reasonable for confirmed hypertension without other markers of risk IIb .		NONPHARMACOLOGICAL INTERVENTIONS I Weight loss · DASH diet · sodium <1500 mg/d · potassium 3500–5000 mg/d · aerobic 90–150 min/wk · ↓alcohol (M ≤2/d, F ≤1/d).	

5 Type 2 DM HbA1c ≥6.5%

- Heart-healthy diet (Mediterranean, DASH, vegetarian) **I**
- ≥150 min/wk moderate (or 75 min/wk vigorous) activity **I**
- Aggressive Rx of other ASCVD risk factors (BP, lipids, tobacco) **I**
- Metformin first-line at diagnosis **IIa** – caution in CKD (lactic acidosis)
- If HbA1c >7% & additional ASCVD risk factors → add SGLT-2 inhibitor (↓HF, ↓ASCVD) or GLP-1 RA (↓ASCVD) **IIb**

6 Aspirin — primary prevention use sparingly

- Age 40–70 y, higher ASCVD risk & not at increased bleeding risk → low-dose ASA 75–100 mg may be considered **IIb**
- Age >70 y → do not routinely use **III: Harm**
- Any age with ↑ bleeding risk → do not use **III: Harm**
- Bleeding risk: prior GI bleed/PUD, age >70, thrombocytopenia, coagulopathy, CKD, NSAIDs, steroids, DOAC/warfarin

Remember

Healthy lifestyle is the most important intervention for ASCVD, heart failure & atrial fibrillation – at every age. Team-based care **I** and shared decision-making **I** outperform usual care. Always assess social determinants of health (food insecurity, housing, literacy, transport) **I** – they affect adherence and outcomes. Treat tobacco use as a vital sign – abstinence has the highest impact. PCE risk is a starting point for the conversation, not the sole decision-maker.