Baptist Health
HEART INSTITUTE

Coronary Artery Disease:
A Primary Care Perspective

Faheem Beg, MD

February 28, 2025

Disclosures

- None

Overview

- Demographics
- Acute Coronary Syndrome vs Stable Ischemic Heart Disease
- Case – 1: Asymptomatic patient
- Case – 2: Symptomatic patient without medical therapy
- Case – 3: Symptomatic patient on maximally tolerated medical therapy
- Take Home Messages

Baptist Health
HEART INSTITUTE

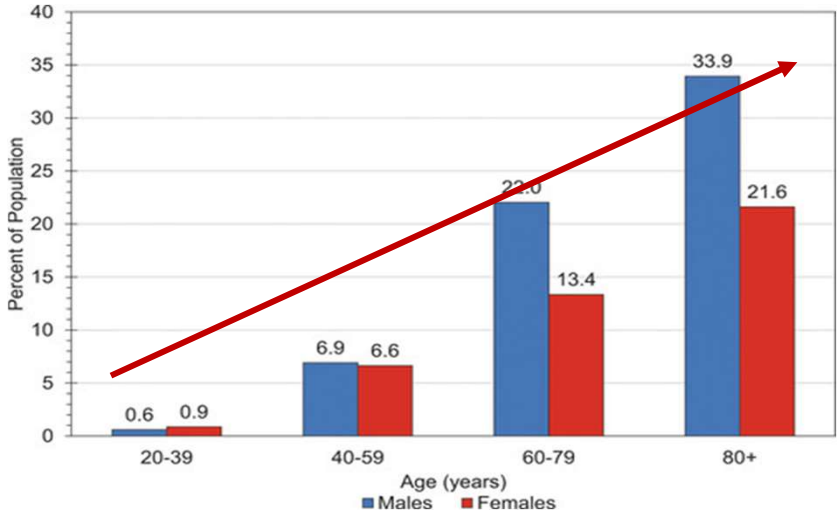
Table 4. US Heart Disease Prevalence, by Age, Race, Ethnicity, and Sex, 2015–2018

Population Group	Prevalence, CHD, 2015–2018, ≥20 y	Prevalence, MI, 2015–2018, ≥20 y	Prevalence, AP,* 2015–2018, ≥20 y
Both sexes	20.1 million (7.2% [95% CI, 6.5–7.9])	8.8 million (3.1% [95% CI, 2.7–3.6])	11 million (4.1%)
Men	11 million (8.3%)	5.8 million (4.3%)	5.3 million (4.2%)
Women	9.1 million (6.2%)	3 million (2.1%)	5.7 million (4.0%)
NH White men	8.7%	4.4%	4.5%
NH White women	6.0%	2.0%	4.0%
NH Black men	6.7%	3.9%	3.3%
NH Black women	7.2%	2.3%	4.7%

AP indicates angina pectoris; CHD, coronary heart disease; CI, confidence interval; MI, myocardial infarction; and NH, non-Hispanic.
*AP is chest pain or discomfort that results from insufficient blood flow to the heart muscle. Stable AP is predictable chest pain on exertion or under mental or emotional stress. The incidence estimate is for AP without MI.

Baptist Health
HEART INSTITUTE
4

Figure 1. US Prevalence of CHD per 100,000, by Age and Sex (NHANES 2015–2018)

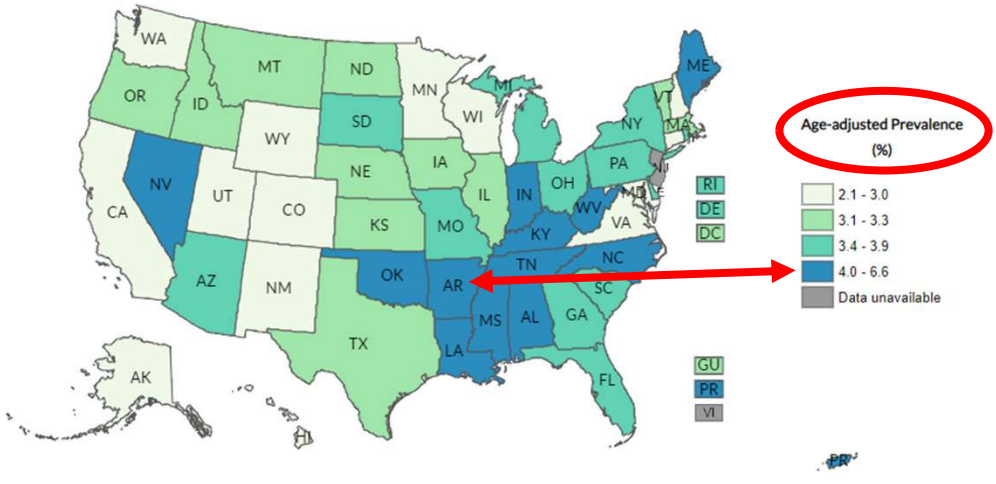


CHD indicates coronary heart disease

Baptist Health HEART INSTITUTE

5

- **Figure 2. "Ever Told You Had Angina or CHD?" Age-Adjusted US Prevalence, by State (BRFSS Prevalence and Trends Data, 2019)**



BRFSS indicates Behavioral Risk Factor Surveillance System; and CHD, coronary heart disease.

Baptist Health HEART INSTITUTE

6

Acute Coronary Syndrome vs Stable Ischemic Heart Disease

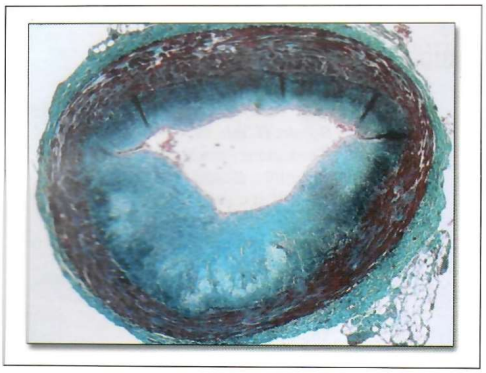


Figure 1
A Stable Coronary Plaque

Though possibly able to cause angina through supply-demand inequity related to coronary lumen obstruction, this lesion is lipid-poor and unlikely to rupture.

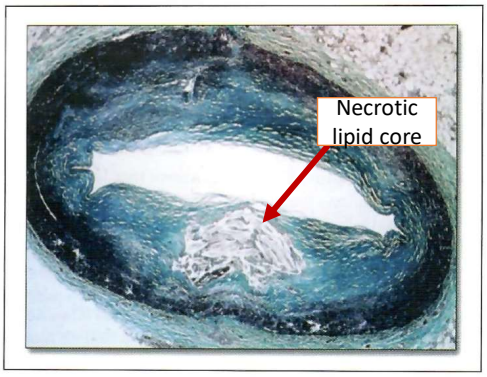


Figure 2
A Thin-Capped Fibroatheroma

Such a lesion is vulnerable to rupture, exposing its lipid-rich necrotic core to the blood stream, triggering the platelet and coagulation cascade.

Baptist Health
HEART INSTITUTE

Case 1: Asymptomatic Patient

62-year-old female patient with history of type 2 diabetes, hypertension, tobacco use underwent CT chest without contrast for lung cancer screening. While the CT was negative for any suspicious lesions, coronary artery calcifications were present. Cardiology referral was requested by the patient.

Baptist Health
HEART INSTITUTE

Medical Therapy to Prevent Cardiovascular Events and Manage Symptoms

Antiplatelet Therapy and Oral Anticoagulants (OAC)

	Recommendations for Antiplatelet Therapy and OAC Referenced studies that support the recommendations are summarized in the Online Data Supplements.	
COR	**LOE**	**Recommendations**
	Antiplatelet Therapy Without OAC	
1	**A**	**1. In patients with CCD and no indication for OAC therapy, low-dose aspirin 81 mg (75-100 mg) is recommended to reduce atherosclerotic events.***
1	**A**	**2. In patients with CCD treated with PCI, dual antiplatelet therapy (DAPT) consisting of aspirin and clopidogrel for 6 months post PCI followed by single antiplatelet therapy (SAPT) is indicated to reduce MACE and bleeding events.***
2a	**A**	**3. In select patients with CCD treated with PCI and a drug-eluting stent (DES) who have completed a 1- to 3-month course of DAPT, P2Y12 inhibitor monotherapy for at least 12 months is reasonable to reduce bleeding risk.**

*Modified from the 2016 ACC/AHA Focused Update on DAPT

Baptist Health HEART INSTITUTE

9

Blood Pressure Management

	Recommendations for Blood Pressure Management Referenced studies that support the recommendations are summarized in the Online Data Supplement.	
COR	**LOE**	**Recommendations**
1	**A**	**1. In adults with CCD, nonpharmacologic strategies are recommended as first-line therapy to lower BP in those with elevated BP (120-129/<80 mm Hg) (see Table 12).***
1	**B-R**	**2. In adults with CCD who have hypertension, a BP target of <130/<80 mm Hg is recommended to reduce CVD events and all-cause death.***

*Modified from the 2017 ACC/AHA/Multisociety High Blood Pressure in Adults Guideline.

Baptist Health HEART INSTITUTE

10

Blood Pressure Management (con't.)

1	B-R	3. In adults with CCD and hypertension (systolic BP ≥130 and/or diastolic BP ≥80 mm Hg), in addition to nonpharmacological strategies, GDMT angiotensin-converting enzyme (ACE) inhibitors, angiotensin-receptor blockers (ARB), or beta blockers are recommended as first-line therapy for compelling indications (eg, recent MI or angina), with additional antihypertensive medications (eg, dihydropyridine calcium channel blockers [CCB], long-acting thiazide diuretics, and/or mineralocorticoid receptor antagonists) added as needed to optimize BP control.*

*Modified from the 2017 ACC/AHA/Multisociety High Blood Pressure in Adults Guideline.

Baptist Health Heart Institute

Lipid Management

	Recommendations for Lipid Management Referenced studies that support the recommendations are summarized in the Online Data Supplement.	
COR	LOE	Recommendations
1	A	1. In patients with CCD, high-intensity statin therapy is recommended with the aim of achieving a ≥50% reduction in LDL-C levels to reduce the risk of MACE.*
1	A	2. In patients in whom high-intensity statin therapy is contraindicated or not tolerated, moderate-intensity statin therapy is recommended with the aim of achieving a 30% to 49% reduction in LDL-C levels to reduce the risk of MACE.*
1	A	3. In patients with CCD, adherence to changes in lifestyle and effects of lipid-lowering medication should be assessed by measurement of fasting lipids in 4 to 12 weeks after statin initiation or dose adjustment and then every 3 to 12 months thereafter based on need to assess response or adherence to therapy.*

*Modified from the 2018 AHA/ACC Cholesterol Guideline

Baptist Health Heart Institute

SGLT2 Inhibitors and GLP-1 Receptor Agonists

	Recommendations for Use of SGLT2 Inhibitors and GLP-1 Receptor Agonists Referenced studies that support the recommendations are summarized in the Online Data Supplement.	
COR	**LOE**	**Recommendations**
1	**A**	**1. In patients with CCD who have type 2 diabetes, the use of either an SGLT2 inhibitor or a GLP-1 receptor agonist with proven cardiovascular benefit is recommended to reduce the risk of MACE.**
Cost Value Statement: High Value	**B-NR**	**2. In patients with CCD and type 2 diabetes, addition of a GLP-1 receptor agonist at US prices is projected to be of high value compared with standard of care.**
Cost Value Statement: Intermediate Value	**B-NR**	**3. In patients with CCD and type 2 diabetes, addition of an SGLT2 inhibitor at US prices is projected to be of intermediate value compared with standard of care.**

Baptist Health HEART INSTITUTE

SGLT2 Inhibitors and GLP-1 Receptor Agonists (con't.)

1	**A**	**4. In patients with CCD and heart failure with LVEF ≤40%, use of an SGLT2 inhibitor is recommended to reduce the risk of cardiovascular death and heart failure hospitalization and to improve QOL, irrespective of diabetes status.***
Cost Value Statement: Intermediate Value	**B-NR**	**5. In patients with CCD and heart failure with LVEF ≤40%, addition of an SGLT2 inhibitor to GDMT, irrespective of diabetes status, is projected to be of intermediate value at US prices.**
2a	**B-R**	**6. In patients with CCD and heart failure with LVEF >40%, use of an SGLT2 inhibitor can be beneficial in decreasing heart failure hospitalizations and to improve QOL, irrespective of diabetes status.**
Cost Value Statement: Intermediate Value	**B-NR**	**7. In patients with CCD and heart failure with LVEF >40%, addition of an SGLT2 inhibitor to GDMT, irrespective of diabetes status, is projected to be of uncertain value at US prices.**

*Modified from the 2022 AHA/ACC/HFSA Heart Failure Guideline

Baptist Health HEART INSTITUTE

Tobacco Products

Recommendations for Tobacco Products Referenced studies that support the recommendations are summarized in the Online Data Supplement.		
COR	**LOE**	**Recommendations**
1	A	1. In patients with CCD, tobacco use should be assessed at every health care visit to facilitate identification of those who may benefit from behavioral or pharmacologic interventions.*
1	A	2. Patients with CCD who regularly smoke tobacco should be advised to quit at every visit.*
1	A	3. In patients with CCD who regularly smoke tobacco, behavioral interventions are recommended to maximize cessation rates in combination with pharmacotherapy, including bupropion, varenicline, or combination long- and short-acting nicotine replacement therapy (NRT).*

*Modified from the 2019 AHA/ACC Primary Prevention of CVD Guideline

Baptist Health HEART INSTITUTE

15

Physical Activity

Recommendations for Physical Activity Referenced studies that support the recommendations are summarized in the Online Data Supplement.		
COR	**LOE**	**Recommendations**
1	A	1. For patients with CCD who do not have contraindications, an exercise regimen is recommended, including ≥150 minutes/wk of moderate-intensity aerobic activities or ≥75 minutes/wk of higher-intensity aerobic activities to improve functional capacity and QOL, and to reduce hospital admission and mortality rates.

Baptist Health HEART INSTITUTE

16

Guideline-Directed Management and Therapy

Nutrition, Including Supplements

	Recommendations for Nutrition, Including Supplements Referenced studies that support the recommendations are summarized in Online Data Supplement.	
	Recommendations	
COR	**LOE**	**Nutrition**
1	**B-R**	**1. In patients with CCD, a diet emphasizing vegetables, fruits, legumes, nuts, whole grains, and lean protein is recommended to reduce the risk of CVD events.***
2a	**B-NR**	**2. In patients with CCD, reducing the percentage of calories from saturated fat (<6% of total calories) and replacing with dietary monounsaturated and polyunsaturated fat, complex carbohydrates, and dietary fiber can be beneficial to reduce the risk of CVD events.***
2a	**B-NR**	**3. In patients with CCD, minimization of sodium (<2,300 mg/d; optimally 1,500 mg/d) and minimization of processed meats (eg, cured bacon, hot dogs) can be beneficial to reduce the risk of CVD events.***

*Modified from the 2019 ACC/AHA Primary Prevention of CVD Guideline

Baptist Health Heart Institute

17

Alcohol and Substance Use

	Recommendations for Alcohol and Substance Use Referenced studies that support the recommendations are summarized in the Online Data Supplement.	
COR	**LOE**	**Recommendations**
1	**C-LD**	**1. Patients with CCD should be routinely asked and counseled about substance use to reduce ASCVD events.**
2a	**B-NR**	**2. In patients with CCD who consume alcohol, it is reasonable to limit alcohol intake (≤1 drink/d for women, ≤2 drinks/d for men) to reduce cardiovascular and all-cause death.**
3: No Benefit	**B-NR**	**3. Patients with CCD should not be advised to consume alcohol for the purpose of cardiovascular protection.**

Baptist Health Heart Institute

18

Sexual Health and Activity

	Recommendations for Sexual Health and Activity Referenced studies that support the recommendations are summarized in the Online Data Supplement.	
COR	**LOE**	**Recommendations**
2a	**B-NR**	**1. In patients with CCD, it is reasonable to individualize resumption of sexual activity based on type of sexual activity, exercise capacity, and postprocedural healing.***
2a	**B-NR**	**2. In patients with CCD, cardiac rehabilitation and regular exercise can be useful to reduce the risk of cardiovascular complications with sexual activity.***
3: Harm	**B-NR**	**3. In patients with CCD, phosphodiesterase type 5 inhibitors should not be used concomitantly with nitrate medications because of risk for severe hypotension.***

*Modified from the 2012 AHA Scientific Statement on Sexual Activity and CVD

Baptist Health HEART INSTITUTE

19

Risk Stratification and Relationship to Treatment Selection

Recommendations for Risk Stratification and Relationship to Treatment Selection Referenced studies that support the recommendations are summarized in the Online Data Supplement.		
COR	**LOE**	**Recommendations**
Risk Stratification and Prognosis		
1	**B-NR**	**1. In patients with CCD, it is recommended that risk stratification incorporate all available information, including noninvasive, invasive, or both cardiovascular diagnostic testing results or use validated risk scores to classify patients as low (<1%), intermediate (1%-3%), or high (>3%) yearly risk for cardiovascular death or nonfatal MI.**

Baptist Health HEART INSTITUTE

20

Risk Stratification and Relationship to Treatment Selection (con't.)

1	A	2. In patients with CCD, optimization of GDMT is recommended to reduce MACE.*
1	A	3. In patients with CCD with newly reduced LV systolic function, clinical heart failure, or both, ICA is recommended to assess coronary anatomy and guide potential revascularization.
3: No benefit	A	4. In patients with CCD, ICA for risk stratification is not routinely recommended in patients without LV systolic dysfunction, heart failure, stable chest pain refractory to GDMT, and/or noninvasive testing suggestive of significant (>50%) left main disease.

*Modified from the 2021 AHA/ACC/Multisociety Chest Pain Guideline

Baptist Health HEART INSTITUTE

2
1

Case 2: Symptomatic Patient

62-year-old female patient with history of type 2 diabetes, hypertension, tobacco use underwent CT chest without contrast for lung cancer screening. While the CT was negative for any suspicious lesions, coronary artery calcifications were present. Cardiology referral was requested by the patient.

During the initial visit to cardiology clinic, patient didn't have any symptoms. She was active and part of Siler Sneakers program. CT scan showed no Left Main calcifications. Echocardiogram showed normal LV systolic function and no regional wall motion abnormalities.

On her follow up visit 6 months later, she complained of chest tightness which happens 1-2x a month primarily on climbing stairs and resolves with resting.

Baptist Health HEART INSTITUTE

Diagnostic Evaluation

Recommendations for Diagnostic Evaluation Referenced studies that support the recommendations are summarized in the Online Data Supplement.		
COR	**LOE**	**Recommendations**
1	**B-NR**	**1. In patients with CCD and a change in symptoms or functional capacity that persists despite GDMT, stress positron emission tomography/single photon emission CT myocardial perfusion imaging (PET/SPECT MPI), cardiovascular magnetic resonance (CMR) imaging, or stress echocardiography is recommended to detect the presence and extent of myocardial ischemia, estimate risk of major adverse cardiovascular events (MACE), and guide therapeutic decision-making.***

*Modified from the recommendations in the 2021 AHA/ACC/Multisociety Chest Pain Guideline

Baptist Health Heart Institute

Medical Therapy for Relief of Angina

	Recommendations for Medical Therapy for Relief of Angina Referenced studies that support the recommendations are summarized in the Online Data Supplement.	
COR	**LOE**	**Recommendations**
1	**B-R**	**1. In patients with CCD and angina, antianginal therapy with either a beta blocker, CCB, or long-acting nitrate is recommended for relief of angina or equivalent symptoms.***
1	**B-R**	**2. In patients with CCD and angina who remain symptomatic after initial treatment, addition of a second antianginal agent from a different therapeutic class (beta blockers, CCB, long-acting nitrates) is recommended for relief of angina or equivalent symptoms.***

*Modified from the ACC/AHA/Multisociety 2012 SIHD Guideline

Baptist Health Heart Institute

Medical Therapy for Relief of Angina (con't.)

1	B-R	3. In patients with CCD, ranolazine is recommended in patients who remain symptomatic despite treatment with beta blockers, CCB, or long-acting nitrate therapies.*
1	B-NR	4. In patients with CCD, sublingual nitroglycerin or nitroglycerin spray is recommended for immediate short-term relief of angina or equivalent symptoms.*
3: Harm	B-R	5. In patients with CCD and normal LV function, the addition of ivabradine to standard anti-anginal therapy is potentially harmful.*

*Modified from the ACC/AHA 2012 SIHD Guideline

Baptist Health HEART INSTITUTE

25

Case 3: Symptomatic Patient with GDMT

62-year-old female patient with history of type 2 diabetes, hypertension, tobacco use underwent CT chest without contrast for lung cancer screening. While the CT was negative for any suspicious lesions, coronary artery calcifications were present. Cardiology referral was requested by the patient.

During the initial visit to cardiology clinic, patient didn't have any symptoms. She was active and part of Siler Sneakers program. CT scan showed no Left Main calcifications. Echocardiogram showed normal LV systolic function and no regional wall motion abnormalities.

On her follow up visit 6 months later, she complained of chest tightness which happens 1-2x a month primarily on climbing stairs and resolves with resting.

Baptist Health HEART INSTITUTE

Case 3: Symptomatic Patient with GDMT con't

Patient underwent treadmill nuclear myocardial perfusion scanning for evaluation and risk stratification. She was able to achieve 10.1 mets (9 mins on treadmill) with non-limiting angina. EKG showed no ST segment changes. Duke treadmill score (5) was consistent with low risk. Perfusion imaging showed small apical perfusion defect with reversibility and LVEF was normal on this scan.

While the chest pain initially resolved with addition of beta-blockers and then long-acting nitrates a year later. Now she is complaining of symptoms twice a week which resolve with sublingual nitroglycerin.

Baptist Health
HEART INSTITUTE

Revascularization

	Recommendations for Revascularization Referenced studies that support the recommendations are summarized in the Online Data Supplement.	
COR	**LOE**	**Recommendations**
Goals of Revascularization		
1	**A**	**1. In patients with CCD and lifestyle-limiting angina despite GDMT and with significant coronary artery stenoses amenable to revascularization, revascularization is recommended to improve symptoms.***
1	**B-R**	**2. In patients with CCD who have significant left main disease or multivessel disease with severe LV dysfunction (LVEF ≤ 35%), CABG in addition to medical therapy is recommended over medical therapy alone to improve survival.***

*Modified from the 2021 ACC/AHA/SCAI Coronary Revascularization Guideline

Baptist Health
HEART INSTITUTE

Revascularization (con't.)

Cost Value Statement: Intermediate Value	B-NR	3. In patients with CCD and multivessel disease with severe LV dysfunction, CABG added to optimal medical therapy is of intermediate economic value compared with medical therapy alone.
2a	B-R	4. In patients with CCD and multivessel CAD appropriate for either CABG or PCI, revascularization in addition to GDMT is reasonable to lower the risk of cardiovascular events such as spontaneous MI, unplanned urgent revascularizations, or cardiac death.*
2a	B-NR	5. In selected patients with CCD and significant left main stenosis for whom PCI can provide equivalent revascularization to that possible with CABG, PCI is reasonable to improve survival.*

*Modified from the 2021 ACC/AHA/SCAI Coronary Revascularization Guideline

Baptist Health HEART INSTITUTE

Revascularization (con't.)

Decision-Making for Revascularization		
1	A	6. In patients with CCD who have angina or an anginal equivalent, no previous evaluation for ischemia, and angiographically intermediate stenoses, the use of FFR or other proven nonhyperemic pressure ratios (eg, iFR) is recommended before proceeding with PCI.*
Cost Value Statement: High Value	B-NR	7. In patients with CCD undergoing coronary angiography without previous stress testing, the use of invasive FFR to evaluate angiographically intermediate coronary stenoses before proceeding with PCI is a high economic value intervention.
1	B-NR	8. In patients with CCD with complex 3-vessel disease or for whom the optimal treatment strategy is unclear, a Heart Team approach that includes representatives from interventional cardiology and cardiac surgery is recommended to improve patient outcomes.*

*Modified from the 2021 ACC/AHA/SCAI Coronary Revascularization Guideline

Baptist Health HEART INSTITUTE

Revascularization: PCI Versus CABG

Recommendations for Revascularization: PCI Versus CABG Referenced studies that support the recommendations are summarized in the Online Data Supplement.		
COR	**LOE**	**Recommendations**
		Patients With CCD
1	B-R	1. In patients with CCD who require revascularization for significant left main involvement associated with high-complexity CAD, CABG is recommended in preference to PCI to improve survival.*
2a	B-R	2. In patients with CCD who require revascularization for multivessel CAD with complex and diffuse CAD (eg, SYNTAX score >33), it is reasonable to choose CABG over PCI to improve survival.*

*Modified from the 2021 ACC/AHA/SCAI Coronary Revascularization Guideline

Baptist Health HEART INSTITUTE

Revascularization: PCI Versus CABG (con't.)

		Patients With CCD at High Surgical Risk
2a	B-NR	3. In patients with CCD who are appropriate for revascularization but poor candidates for surgery, it is reasonable to choose PCI over CABG to improve symptoms and reduce MACE.
		Patients With CCD and Diabetes
1	A	4. In patients with CCD, diabetes, and multivessel CAD with involvement of the left anterior descending artery who are appropriate candidates for CABG, CABG (with a left internal mammary artery to the left anterior descending artery) is recommended in preference to PCI to reduce mortality and repeat revascularizations.*
2b	B-R	5. In patients with CCD and diabetes who have left main stenosis and low- or intermediate-complexity CAD (eg, SYNTAX score ≤33), PCI may be considered as an alternative to CABG to reduce MACE.*

*Modified from the 2021 ACC/AHA/SCAI Coronary Revascularization Guideline

Baptist Health HEART INSTITUTE

CONCLUSION

1. Lifestyle Changes (First-line Intervention):

Smoking cessation: Reduces CV risk by 50% in 1 year.
Diet: Mediterranean diet improves CV outcomes (PREDIMED Trial).
Exercise: At least **150 min/week moderate activity**.

2. Pharmacologic Therapy:

Antiplatelets: Aspirin for secondary prevention; Clopidogrel if aspirin-intolerant.
Statins: Aim for **LDL < 70 mg/dL** in high-risk patients (ACC 2019).
ACE inhibitors/ARBs: Especially for **diabetics and hypertensive patients**.
Beta-blockers/CCBs: If angina symptoms persist.

3. When to Refer for Revascularization (PCI vs. CABG):

Left main disease or multivessel CAD → CABG preferred.
Single-vessel CAD with symptoms → PCI considered.

Baptist Health
HEART INSTITUTE

QUESTIONS

THANK YOU

Baptist Health
HEART INSTITUTE