How to make a referral to Cardiology for a new diagnosis of chest pain

All stable outpatients who have **not been previously assessed by Cardiology** and who are referred with **new onset chest pain** require the following to be sent with the referral:

☐ Clinical history and medication list

☐ Physical exam including listening for any heart murmurs

☐ Bloodwork including a CBC and renal function

☐ Baseline 12 lead ECG (12 lead ECG can be requested at Pulse Complete Cardiac Care)

The referral will not be considered as accepted until this information is present.

Examples of Urgent, Semi-Urgent and Elective Chest Pain Referrals to Cardiology for Stable Outpatients

Urgent (< 2 weeks)	Semi-Urgent (< 6 weeks)	Elective
Chest pain/angina with minimal exertion (CCS class 3 or higher)	New onset or worsening chest pain/angina less than CCS class 3	Stable chronic angina
Rapidly progressive exertional chest pain over 2 weeks	Severe or large amount of ischemia on ischemia testing that does not involve anterior wall	Coronary calcifications on CT scan
Severe valvular disease	> 70% stenosis on CTCA that does not involve the left main or proximal LAD	
Left main disease > 50% or proximal LAD disease > 70% on CTCA	Recent Acute Coronary Syndrome or MI (< 6 months)	
Severe or large amount of anterior ischemia on ischemia testing		

** Patients who have been **previously seen** by Cardiology and have a **known diagnosis** and are being sent for repeat reassessment do not necessarily need all of the above as part of the referral. They should have updated investigations as felt appropriate by the referring physician instead.**

You may also request treadmill testing without a Cardiology consultation as part of your diagnostic investigations. As part of patient safety, you should perform a physical examination to rule out any heart murmurs before a treadmill test is ordered on a patient. If you are ordering a treadmill test this is your responsibility.

If you need further cardiac advice on the investigations and management of your patient, please consider contacting the RACE line.

For further information on the assessment of stable outpatients with chest pain:

Patients with an acute episode of chest pain or who are considered high risk for an ACS should be sent directly to the ER for initial assessment. Features of acute coronary syndromes or unstable angina include (but are not limited to): chest pain accelerating in frequency and/or severity over the past 2 weeks, ongoing chest pain, hemodynamic instability or ECG findings compatible with ischemia, or if there is reasonable suspicion from the physician or patient that this acute cardiac chest pain.

Chest pain can have multiple causes as listed below. Typical cardiac chest pain has all 3 of the following qualities;

    1) increased with exertion or emotional stress,
    2) relieved with rest or nitroglycerin, and
    3) typical central chest pressure/pain that can radiate into the arms or neck and lasts for 5 minutes or longer.

Potential Causes of Chest Pain				
Cardiac	**Pulmonary**	**Gastrointestinal**	**Musculoskeletal**	**Miscellaneous**
Myocardial Infarction	Asthma exacerbation	GERD	Costochondritis	Shingles
Aortic Stenosis or other valvular heart disease	Pleuritis	Esophagitis	Rib fractures	Cocaine
Pericarditis	Pulmonary embolism	Esophageal spasm		Panic attacks
Hypertensive emergency	Pneumonia	Peptic ulcer disease		
Tachyarrhythmias	Pneumothorax	Gastritis		
Aortic Dissection	Lung cancer			

As part of your assessment, you may consider using a validated Chest Pain Clinical Decision Rule such as the one from INTERCHEST developed for outpatients.

INTERCHEST Collaboration Chest Pain Clinical Decision Rule	
Clinical Predictor	Points
Pain reproduced by palpating the chest wall	-1
Older age (men ≥55 years, women ≥65 years)	1
Physician initially suspected a serious condition	1
Chest discomfort feels like "pressure"	1
Chest pain related to effort	1
History of coronary artery disease	1

Adapted from the INTERCHEST Collaboration - Applying a Clinical Decision Rule of CAD in Primary Care to Select a Diagnostic Test and Interpret the Results. Am Fam Physician. 2019;99(9):584

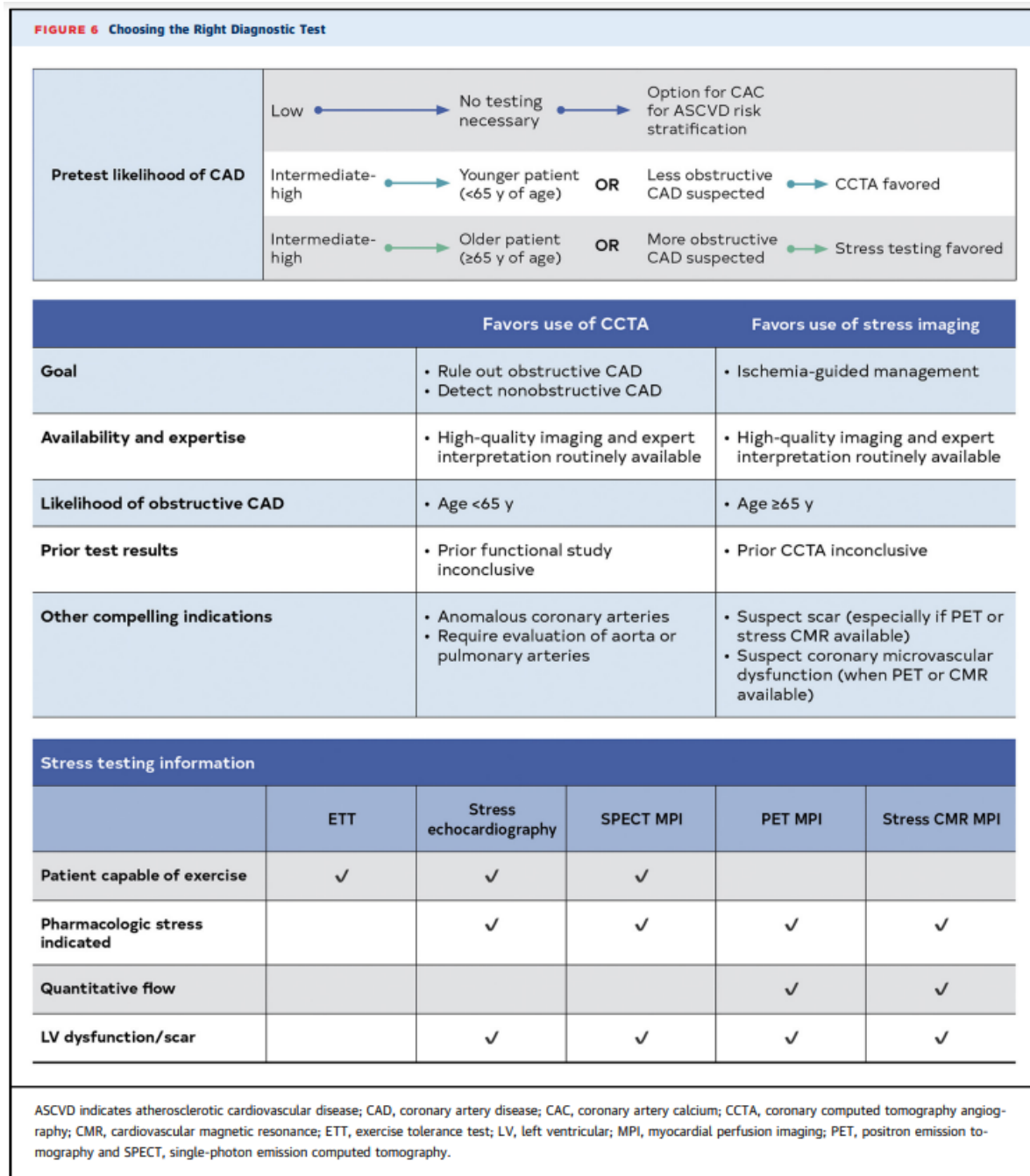| Probability of CAD When Using INTERCHEST Collaboration Chest Pain Clinical Decision Rule		
Score	CAD prevalence (patients with CAD/total patients)	Probability (95% CI)
-1	0/87	0.00 (0.00 to 0.03)
0	1/208	0.00 (0.00 to 0.02)
1	6/160	0.04 (0.01 to 0.07)
2	11/85	0.13 (0.07 to 0.21)
3	29/53	0.55 (0.41 to 0.67)
4	21/32	0.66 (0.49 to 0.80)
5	17/19	0.89 (0.71 to 0.98)

Adapted from the INTERCHEST Collaboration - Applying a Clinical Decision Rule of CAD in Primary Care to Select a Diagnostic Test and Interpret the Results. Am Fam Physician. 2019;99(9):584

Further investigations should be considered based upon the pre-test probability of coronary artery disease, and whether functional vs anatomical testing is preferred.

FIGURE 6 Choosing the Right Diagnostic Test

Pretest likelihood of CAD				
Low	→ No testing necessary	→	Option for CAC for ASCVD risk stratification	
Intermediate-high	→ Younger patient (<65 y of age)	OR	Less obstructive CAD suspected	→ CCTA favored
Intermediate-high	→ Older patient (≥65 y of age)	OR	More obstructive CAD suspected	→ Stress testing favored

	Favors use of CCTA	Favors use of stress imaging
Goal	• Rule out obstructive CAD • Detect nonobstructive CAD	• Ischemia-guided management
Availability and expertise	• High-quality imaging and expert interpretation routinely available	• High-quality imaging and expert interpretation routinely available
Likelihood of obstructive CAD	• Age <65 y	• Age ≥65 y
Prior test results	• Prior functional study inconclusive	• Prior CCTA inconclusive
Other compelling indications	• Anomalous coronary arteries • Require evaluation of aorta or pulmonary arteries	• Suspect scar (especially if PET or stress CMR available) • Suspect coronary microvascular dysfunction (when PET or CMR available)

Stress testing information

	ETT	Stress echocardiography	SPECT MPI	PET MPI	Stress CMR MPI
Patient capable of exercise	✓	✓	✓		
Pharmacologic stress indicated		✓	✓	✓	✓
Quantitative flow				✓	✓
LV dysfunction/scar		✓	✓	✓	✓

ASCVD indicates atherosclerotic cardiovascular disease; CAD, coronary artery disease; CAC, coronary artery calcium; CCTA, coronary computed tomography angiography; CMR, cardiovascular magnetic resonance; ETT, exercise tolerance test; LV, left ventricular; MPI, myocardial perfusion imaging; PET, positron emission tomography and SPECT, single-photon emission computed tomography.

If your patient has an intermediate or high likelihood of cardiac chest pain, initial treatments should be considered including aspirin 81 mg daily, beta-blockers, calcium channel blockers, nitrates, and/or statins. **Treatment should not be delayed until consultation if cardiac chest pain is suspected.**

If you have a low suspicion of cardiac chest pain, the patient may not require further cardiac testing, or may only require a treadmill test without Cardiology consultation. A treadmill test can be ordered by itself without requesting a Cardiology consultation.

If you have questions about how to arrange further investigations or management for your patient, you may consider contacting the RACE line for further advice.

References:

1. American Family Physician 2019;99(9):584
2. Journal of the American College of Cardiology 2021;78(22):e187