Refer Wisely

Management and Testing of Ischemic Heart Disease

Symptomatic (Sudden worsening of symptoms could represent ACS and should be referred to the ED)

No known IHD → **Assess symptoms** → **Assess exercise capacity**

Classification of chest pain
- Characteristics
  - Substernal chest pain
  - Brought on by exertion
  - Relieved with rest
- 0 or 1 characteristics = non-cardiac chest pain
- 2 characteristics = atypical chest pain
- 3 characteristics = typical chest pain/angina

Age (years)	Sex	Typical/Definite Angina Pectoris	Atypical/Probable Angina Pectoris	Nonanginal Chest Pain
≤39	Men	Intermediate	Intermidiate	Low
	Women	Intermediate	Very Low	Very Low
40-49	Men	High	Intermediate	Intermediate
	Women	Intermediate	Low	Very Low
50-59	Men	High	Intermediate	Intermediate
	Women	Intermediate	Intermediate	Low
>60	Men	High	Intermediate	Intermediate
	Women	High	Intermediate	Intermediate

	ETT	CTA	MPI
Low likelihood, can exercise	A	R	R
Low likelihood, cannot exercise	N/A	M	A
Intermediate likelihood, can exercise	A	M	A
Intermediate likelihood, cannot exercise	N/A	A	A
High likelihood, can exercise	M	M	A
High likelihood, cannot exercise	N/A	M	A

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Don't perform cardiac imaging for patients who are at low risk.

Known IHD (MI, stent, bypass) → **Assess symptoms** → **Review medical management** → **Consider antianginals**

IHD medical management
1. Aspirin
   - 81 mg daily is adequate
2. Statins
   - Rosuvastatin - 20-40 mg
   - Atorvastatin - 40-80 mg
3. Beta blockers
   - Not required for all patients
   - Needed if low LVEF (≤40% with heart failure) or recent MI
4. Blood pressure control
5. Glucose control
6. Tobacco cessation
7. Regular exercise

Antianginal drug management
1. Beta blockers
   - Carvedilol - 25 mg bid
   - Metoprolol - 50 mg bid
   - Nitrates - goal dose >60 mg
2. Calcium channel blockers
   - Amlodipine - 10 mg daily
   - Side effects: edema
3. Nitrates
   - Short acting for acute symptoms
   - Long acting, prescribe ONCE daily
     - Goal dose >60 mg
     - Headache common side effect
4. Ranolazine
   - For refractory angina
   - Monitor QT

Known IHD, Symptomatic

ETT	CTA	MPI
M	M	A

Asymptomatic

No known IHD → **Testing generally not indicated** → **Assess CV risk** → **Risk factor modification** → **Medications (ASA, statin) if indicated**

Known IHD (prior MI, stent, bypass) → **Testing generally not indicated** → **Review medical management**

Risk factor modification: recommendations
- Physical activity
- Weight management
- Tobacco counseling
- Diet
  - Reduce intake of saturated fat (<7% of total calories); trans fatty acids (<1% of total calories); total cholesterol (<200 mg/dL)
  - Limit alcohol consumption
- Blood pressure control (<140/90 mm Hg)
- Patients with diabetes: HbA1C ≤7%

IHD medical management
- Aspirin
  - 81 mg daily is adequate
- Statins
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- Beta blockers
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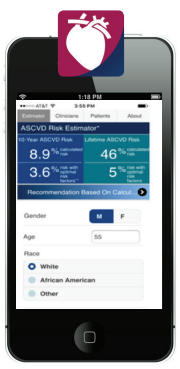
- Blood pressure control
- Glucose control
- Tobacco cessation
- Regular exercise

Assess CV risk on the web or your smartphone with the ASCVD Risk Estimator



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Don't perform stress cardiac imaging or coronary angiography in patients without cardiac symptoms unless high-risk markers are present.

Don't perform radionuclide imaging as part of routine follow-up in asymptomatic patients.

Preoperative Assessment

Assess exercise capacity → **Assess for surgical risk factors** → **Optimize medical therapy** → **Testing rarely indicated**

Example METs
- 3-6 METs
  - Brisk walking >4 mph
  - Bicycling <10 mph
  - Dancing
  - Climb stairs
  - Yard chores
- > 6 METs
  - Push mower
  - Running
  - Heavy loads (>20 kg)
  - Aerobics

Surgical risk factors
1. Prior MI/CAD
2. Heart failure
3. Diabetes on insulin
4. CKD (Creat >2 mg/dL)
5. Stroke/TIA

Medical therapy
1. Control BP
2. Quit smoking
3. Control blood glucose

	ETT	CTA	MPI
4 METs or No risks factors	R	R	R
No symptoms <1 year after NL test	R	R	R
Unknown METs + RFs Low risk surgery	R	R	R
Unknown METs + RFs Intermediate risk surgery	M	R	M
Unknown METs + RFs High risk surgery	M	R	A

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Don't perform cardiac imaging as a pre-operative assessment in patients scheduled to undergo low- or intermediate-risk non-cardiac surgery.

Legend

A = appropriate • **M** = maybe appropriate

R = rarely appropriate • **ETT** = exercise treadmill test

CTA = computed tomography angiography

MPI = myocardial perfusion imaging

Suggested Reading

Fihn SD, et al. 2012 ACCF/AHA/ACP/AATS/PCNA/SCAI/STS Guideline for the diagnosis and management of patients with stable ischemic heart disease. Circulation. 2012;126:e354-e471.

Fleisher LA, et al. 2014 ACC/AHA Guideline on perioperative cardiovascular evaluation and management of patients undergoing noncardiac surgery. J Am Coll Cardiol. 2014;64:e77–137.

Wolk MJ, et al. ACCF/AHA/ASE/ASNC/HFSA/HRS/SCAI/SCCT/SCMR/STS 2013 multimodality appropriate use criteria for the detection and risk assessment of stable ischemic heart disease. J Am Coll Cardiol. 2014;63:380-406.

ASNC — American Society of Nuclear Cardiology

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