

**CCN CATH REFERRAL FORM: NEW/REVISED DATA DEFINITIONS**

CCS/ACS Symptom Classification Scales: The following changes have been made to the CCS classification to update risk stratification for both stable CAD and acute coronary syndrome patients (ACS= unstable angina (UA), non-ST segment elevation MI (NSTEMI) and ST-segment elevation MI (STEMI)).

Use Table 1: CCS Angina classification for stable CAD patients, Table 2: ACS risk classification for ACS patients (UA, NSTEMI and STEMI), and Table 3 for Emergent Patients

TABLE 1: CCS CLASSIFICATION FOR STABLE CAD	
CCS ANGINA CLASS	CRITERIA
0	Asymptomatic
I	Ordinary physical activity such as walking or climbing stairs does not cause angina. Angina with strenuous, rapid, or prolonged exertion at work or recreation.
II	Slight limitation of ordinary activity. Walking or climbing stairs rapidly, walking uphill, walking or stair climbing after meals, or in cold, or in wind or under emotional stress, or during the few hours after awakening. Walking more than 2 blocks on the level and climbing more than one flight of stairs at a normal pace and in normal conditions.
III	Marked limitation of ordinary physical activity. Walking one or two blocks on the level or climbing one flight of stairs in normal conditions and at a normal pace.
IV	Inability to carry out any physical activity without discomfort – anginal syndrome may be present at rest.

TIMI RISK SCORE CALCULATIONS			
TIMI RISK SCORE FOR UA & STEMI		TIMI RISK SCORE AFTER STEMI	
CRITERIA	POINTS	CRITERIA	POINTS
<b>HISTORICAL</b>		<b>HISTORICAL</b>	
<input type="checkbox"/> Age ≥65 years	1	<input type="checkbox"/> Age 65-74	2
<input type="checkbox"/> ≥3 Risk Factors for CAD	1	<input type="checkbox"/> Age >75	3
<input type="checkbox"/> Known CAD (stenosis ≥50%)	1	<input type="checkbox"/> DM/HTN or Angina	1
<input type="checkbox"/> Aspirin use in past 7 days	1	<b>EXAM</b>	
<b>PRESENTATION</b>		<input type="checkbox"/> SBP <100	3
<input type="checkbox"/> Recent (≤24 hrs) severe angina	1	<input type="checkbox"/> HR >100	2
<input type="checkbox"/> ST segment deviation ≥0.5 mm	1	<input type="checkbox"/> Killip (NYHA) II-IV	2
<input type="checkbox"/> Elevated Cardiac Markers	1	<input type="checkbox"/> Weight < 67 kg	1
<b>RISK SCORE = TOTAL</b>		0-7	<b>PRESENTATION</b>
<i>Check the criteria that applies to this patient and apply the risk score to the CCS/ACS Angina Class Risk Category in Table 2.</i>		<input type="checkbox"/> Anterior STE or LBBB	1
		<input type="checkbox"/> Time to rx > 4 hrs.	1
<b>RISK SCORE = TOTAL</b>		0-14	

Use the criteria in Section A for unstable angina or NSTEMI patients. Use the criteria in Section B for STEMI patients not treated by Primary PCI.

TABLE 2: ACS RISK STRATIFICATION				
RISK CATEGORY <sup>1</sup>	SECTION A For UA or NSTEMI		SECTION B For STEMI not treated by Primary PCI	
	Use either TIMI Risk Score OR ACC/AHA Criteria for UA or NSTEMI			
	TIMI Risk Score for UA/NSTEMI	ACC/AHA Criteria (any one of the following)	TIMI Risk Score after STEMI	ACC/AHA Criteria (any one of the following)
<input type="checkbox"/> Low	TIMI Risk Score 1-2 <input type="checkbox"/>	<input type="checkbox"/> No or minimum troponin rise (<1.0 ng/ml) <sup>2</sup> <input type="checkbox"/> No further Chest pain <input type="checkbox"/> Inducible ischemia ≥ 7 MET's workload <input type="checkbox"/> Age < 65 years <sup>3</sup>	TIMI Risk Score 0-3 <input type="checkbox"/>	<input type="checkbox"/> LVEF ≥ 40% <input type="checkbox"/> Low risk on non-invasive assessment such as: Duke treadmill score ≥5.
<input type="checkbox"/> Intermediate	TIMI Risk Score 3-4 <input type="checkbox"/>	<input type="checkbox"/> NSTEMI with small troponin rise (≥1<5 ng/ml) <sup>2</sup> <input type="checkbox"/> Worst ECG T wave inversion or flattening <input type="checkbox"/> Significant LV dysfunction (EF<40%) <input type="checkbox"/> Previous documented CAD, MI or CABG, PCI	TIMI Risk Score 4-5 <input type="checkbox"/>	<input type="checkbox"/> Absence of high risk predictors (above) <input type="checkbox"/> LVEF < 40% <input type="checkbox"/> High or intermediate risk on non-invasive assessment such as: Duke treadmill score < 5, stress-induced large anterior or multiple perfusion defects.
<input type="checkbox"/> High	TIMI Risk Score 5-7 <input type="checkbox"/>	<input type="checkbox"/> Persistent or recurrent chest pain <input type="checkbox"/> Dynamic ECG changes with chest pain <input type="checkbox"/> CHF, hypotension, arrhythmias with C/p <input type="checkbox"/> Moderate or high (>5 ng/ml) Troponin Rise <sup>2</sup> <input type="checkbox"/> Age > 75 years <sup>3</sup>	TIMI Risk Score >5 <input type="checkbox"/>	<input type="checkbox"/> Failed reperfusion (recurrent chest pain, persistent ECG findings of infarction) <input type="checkbox"/> Mechanical complications (sudden heart failure, new murmur) <input type="checkbox"/> Change in clinical status (shock)

- Notes:** 1. If clinical parameters result in two different risk classifications (e.g. high risk and emergent for shock) then the higher classification takes precedent.  
 2. Troponin I levels are institution dependent based upon the assay used and must be used and interpreted accordingly. Troponin T levels are universal due to a single system of standards.  
 3. Age is not to be used alone to determine risk category.

TABLE 3	
<input type="checkbox"/> Emergent	Shock, primary PCI, rescue PCI and facilitated PCI for STEMI.

**HEART FAILURE CLASSIFICATION (NYHA FUNCTIONAL CLASS)**

- CLASS I - No symptoms with ordinary physical activity.
- CLASS II - Symptoms with ordinary activity. Slight limitations of activity.
- CLASS III - Symptoms with less than ordinary activity. Marked limitation of activity.
- CLASS IV - Symptoms with any physical activity or even at rest.

**REST ECG (ISCHEMIC CHANGES AT REST)**

UNINTERPRETABLE: Significant resting ST segment depression, or Left bundle Branch Block, or LVH, or Digoxin therapy, or paced Vrhythm or WPW.

**FUNCTIONAL IMAGING RISK**

HIGH RISK - clear evidence of multi-vessel disease OR single vessel disease involving a large segment of the anterior wall OR summed stress score > 12 segments OR transient ischemia LV cavity dilation.  
 LOW RISK - Absence of high risk criteria.

**EXERCISE ECG RISK**

HIGH RISK – patient demonstrates any of the following: a) ≥ 2.5mm ST depression or ST elevation > 1mm in leads without q waves at low workloads (heart rate < 120); OR b) early onset ST segment changes or angina in 1st stage (3 min); OR c) ST segment depression lasting longer than 8 minutes into recovery stage; OR d) max HR < 120 on no cardio-inhibitory medication; or e) SBP lowered at least by 10mm Hg; OR f) 3 or more beats of ventricular tachycardia; OR g) Duke treadmill score < 10.  
 LOW RISK - Absence of high risk criteria.  
 UNINTERPRETABLE – Significant resting ST segment depression, or Left bundle branch block, or LVH, or Digoxin therapy, or paced Vrhythm or WPW.

**Functional imaging includes exercise or pharmacological stress (either dipyridamole/ Persantine or adenosine or dobutamin/Dobutrex) with either 1) nuclear/PET perfusion imaging (thallium, MIBI or rubidium) or 2) nuclear ventriculography (MUGA); or 3) echocardiography.**