STRESS TEST CHOICES
FOR THE EVALUATION OF CHEST PAIN

1. Exercise targets: Rate: 85% max. predicted; duration (Bruce): 5 min
   Unlikely to reach above targets:
   • ortho problems • PVD • COPD
   • CHF • obesity • advanced age
   • poor motivation • pacemaker

2. Imaging (echo, SPECT) needed
   • sign. baseline ECG abnormality
   • need higher diagnostic certainty
   • need info on location of ischemia
   • prior exerc. ECG non-diagnostic

3. Contraindications to dobutamine
   • IHSS • severe AS • severe HTN
   • malignant arrhythmia
   • high-risk patient (↑ troponin)
   • patient on β-blocker • pacemaker

4. Contraindications to adenosine
   • h/o severe asthma
   • active bronchospasm
   • caffeine, theophylline in last 24 hrs
   • Aggrenox in last 24-36 hrs

5. Good candidate echo imaging
   • good echo windows
   • no sign. wall motion abnormality

ECHO = echocardiogram
SPECT = single photon emission computed tomography (nuclear perfusion heart scan)

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CMC Observation stress test options & consent counseling

**Contraindications for most stress testing include:**
- Acute MI
- Sustained ventricular arrhythmias, SVT, high-grade heart block
- Wellens syndrome- flipped or biphasic T wave in anterior precordial leads (highly correlated with CAD and sudden death)
- Aortic stenosis (hemodynamically significant)
- Severe hypertension (systolic >160 despite treatment)
- Serious coexisting illness (eg, pneumonia, DKA)
- Symptomatic CHF
- Active venous thromboembolic disease (DVT, PE)
- Pericarditis, myocarditis, endocarditis, aortic dissection (could consider Trans-thoracic echocardiogram)
- Atrial fibrillation (myocardial perfusion testing MAY be considered by cardiology if chronic & stable)

**Test options and patient selection:**

**Treadmill EKG stress test:**
The best for most patients: healthy, otherwise low risk patients able to walk the equivalent of several flights of stairs. Patients should have normal or near normal ECGs without significant ST or T wave abnormalities which would complicate stress EKG evaluation.

**Treadmill or “exercise” stress echocardiogram:**
Provides an exercise treadmill with echocardiogram to evaluate cardiac wall motion & EF. Cardiologists like it because it provides a second evaluation modality when EKG alone may be non-diagnostic.

**Dobutamine stress echocardiogram:**
Best for patients unable to exercise due to physical limitations & not markedly hypertensive at rest. About 75% of patients have some nausea, headache, or flushing. Must be NPO for 6 hours pre-test due to nausea risk from medication.

**Adenosine or Lexiscan Myoview:**
Evaluates myocardial perfusion and motion, with a calculated EF. Only choice for patients with marked resting hypertension, and dysrhythmias such as atrial fibrillation. Best choice for known CAD, or when other tests have been done or are inconclusive. Must be NPO 6 hours pre-test. Not available on weekends or after ~1500 hrs, unless specially arranged because interpretation may be delayed. Consider it carefully versus admitting the patient for management of baseline issues before testing.

**Consent counseling (Risk / Benefit explanation):**

**Risks:** Very safe: less than 1 complication per 1,000 patients
- Nausea & headache (common with Dobutamine & Adenosine, treatable, keep NPO)
- Chest pain (test can be stopped for cardiac significant pain)
- Flushing sensation (with Dobutamine)
- Palpitations, arrhythmias, heart block (medical team in test lab can stop & treat if needed)
- Very rare incidence of heart attack (<1%),

**Benefits:** Provides thorough evaluation of heart function
- Safe, with on-going monitoring and providers present during testing
- 85 – 90% confidence that “negative” test outcome means very low risk of acute heart artery blockage. Chest pain likely to be from some other source

List CMC Emergency/Sanger Cardiology as physicians providing procedure.