

Pre-Exercise Cardiovascular Risk Stratification

1. Unstable Disease?

→ YES

Class D

- ✓ No activity recommended for conditioning purposes
- ✓ Treat subject and restore to class C or higher

- Ischemia
- Uncompensated heart failure
- Uncontrolled arrhythmias
- Severe or symptomatic aortic stenosis
- Other conditions aggravated by exercise.

↓ NO

2. Moderate to High Risk Individual?

→ YES

Class C

- ✓ EST* required† for safety and prescriptive purposes.
- ✓ Activity should be individualized with exercise prescription by qualified personnel.
- ✓ Continuous ECG and BP monitoring during exercise session until safety is established (usually in 6-12 sessions).
- ✓ Medical supervision during all exercise session until safety is established. (i.e. formal rehabilitation program)

- Cardiomyopathy or low LV ejection fraction (< 30%)
- Moderate valvular heart disease
- Non-ischemic EST* abnormalities
- Ventricular fibrillation or cardiac arrest that did not occur during acute ischemic event
- Complex ventricular arrhythmias that are uncontrolled at mild to moderate work intensities with medication
- Three vessel or left main disease
- CAD with the following characteristics:
 - 2 or more MIs
 - NYHA Class 3 or higher
 - Exercise capacity < 6 METs
 - Horizontal or downsloping ST depression of 4mm or more
 - Angina or fall in SBP during exercise
 - Previous episode of primary cardiac arrest
 - Ventricular tachycardia at a workload of < 6 METs
 - Other associated problems that may be life-threatening
- Lower risk individuals who are unable to self-regulate activity or to understand recommended activity level

↓ NO

3. Lower Risk Individual?

→ YES

Class B

- ✓ EST* required† for safety and prescriptive purposes.
- ✓ Activity should be individualized with exercise prescription by qualified personnel.
- ✓ Continuous ECG and BP monitoring during exercise may be used during the early prescription phase.
- ✓ Medical supervision during the prescription phase, non-medical supervision for other exercise sessions until the individual understands how to monitor his or her activity. (i.e formal cardiac rehabilitation program at least initially)

- Stable CAD with the following characteristics:
 - NYHA Class 1 or 2
 - Exercise capacity > 6 METs
 - No evidence of heart failure
 - Ischemia free at rest and with exercise ≤ 6 METs
 - Appropriate SBP rise with exercise
 - No sequential ectopic ventricular contractions
 - Ability to self-monitor intensity of activity
- Stable cardiomyopathy, congenital heart and valvular disease
- EST* abnormalities that don't meet Class C

↓ NO

4. Individual without known CAD?

→ YES

Class A2
A3

- ✓ EST* recommended prior to vigorous‡ activity
- ✓ No monitoring or supervision during exercise is required

- Male ≥ 45 y or Female ≥ 55 y
- Any age with Diabetes or ≥ 2 cardiac risk factors

↓ NO

5. Apparently Healthy Younger Individual with no more than 1 cardiac risk factor.

→ YES

Class A1

- ✓ No EST required prior to moderate or vigorous‡ activity
- ✓ No monitoring or supervision is required

* EST = exercise stress test

† Within the past year

‡ Vigorous defined as activities ≥ 6 METS or exercise intense enough to represent a substantial cardiorespiratory challenge. Moderate activities defined as the equivalent of brisk walking (~3-4 MPH)

From:

ACSM's Guidelines for Exercise Testing and Prescription 6th Ed. American College of Sports Medicine. Lippincott, Williams & Wilkins. Philadelphia, PA. 2000. and Balady GJ et al. Recommendations for Cardiovascular Screening, Staffing, and Emergency Policies at Health/Fitness Facilities. AHA/ACSM Scientific Statement. Circulation. 1998;97: 2283-2293.

ACC/AHA 2002 guideline update for exercise testing: summary article: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Committee to Update the 1997 Exercise Testing Guidelines). Circulation. 2002 Oct 1; 106(14):1883-92..