## Pre-Exercise Cardiovascular Risk Stratification

### 1. Unstable Disease?
- Ischemia
- Uncompensated heart failure
- Uncontrolled arrhythmias
- Severe or symptomatic aortic stenosis
- Other conditions aggravated by exercise.

**NO**

**YES**

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

### 2. Moderate to High Risk Individual?
- 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**

**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)

### 3. Lower Risk Individual?
- 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**

**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 session until safety is established (usually in 6-12 sessions).
- 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)

### 4. Individual without known CAD?
- Male > 45 y or Female >55 y
- Any age with Diabetes or ≥ 2 cardiac risk factors

**NO**

**YES**

**Class A2 A3**
- EST* recommended prior to vigorous ‡ activity
- No monitoring or supervision during exercise is required

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

**NO**

**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:
