   EXS – 460,
   Chapter 2 and 3

2. Health Screening and Risk Stratification
   - ACSM, AHA, AACVPR have set specific guidelines concerning pre-participation screening and primary and secondary stratification
   - Health Concerns
     - Contraindications
     - Increased Risk
     - Medical supervision or other special needs

3. What is involved in the pre-screening process?
   - The Basic Goal –
     - To determine if it is safe for an individual to start an exercise program given initial goals,
     - what type of exercise testing is appropriate,
     - what medical supervision is necessary given type of exercise testing.

4. What is the process?
   1. If in a clinical/research setting, obtain informed consent.
   2. A form of medical and health history
   3. What goals for activity does the person have?
   4. Risk stratify based on CAD risk factors.
   5. Decide whether it is recommended to exercise test the person AND what type of test is appropriate.
   6. Decide if your facility can test the person by.....

5. Pre-participation Screening
   - Informed Consent (pg 53 example)
   - PAR-Q* - minimal standard
   - Medical History
     - Diagnoses
     - Hospitalizations/ Surgery (date, outcome)
     - Medications (action, dose)
       - Taking meds regularly
     - Family Hx
     - Risk Factors*
7 Pre-participation Screening (con’t)

- Risk Factors (Table 2-
  - Family History
  - Cigarette Smoking
  - Hypertension
  - Hypercholesterolemia
  - Impaired fasting glucose
  - Obesity
  - Sedentary lifestyle
- Negative Risk Factor
  - High serum HDL

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9 Pre-participation Screening

- Physical Exam findings Slide 9
  - Lung and heart sounds
- Laboratory Tests
  - Blood – CBC, lipids, Chemistry panel
  - Blood pressure
  - Pulmonary Function
- Current Physical Activity Hx
  - Previous exercise test findings
  - Current physical activity level – detailed
  - Veteran’s Specific Activity Questionnaire
  - Signs and symptoms (SxS) - Frequency, Type (Box 2-1)

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11 Veterans Specific Activity Questionnaire (VSAQ)

12 Physical Activity Screening - Symptoms

- Which of the following SxS do you have with exertion? (BOX 2-1)
  - Chest discomfort or pain or in surrounding area
    - Type, when, severity
  - Shortness of breath (SOB)
  - Dizziness or syncope
  - Palpitations or tachycardia
  - Claudication (pain in legs)

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- Orthopnea or paroxysmal nocturnal dyspnea
- Known heart murmur
- Unusual fatigue or shortness of breath with usual activities

14 Initial Risk Stratification (ACSM, Box 2-2)
Secondary Risk Stratification
(for those who already have a medical diagnoses)

- AACVPR
  - **Low risk** – stable, functional capacity > 6 METs, EF > 50%, symptoms may occur at high MET levels
  - **Moderate** – EF = 40 – 50%, reduced functional capacity (5-6 METs) with SxS
  - **High** – unstable, poor ventricular function, SxS below 5 METs

- AHA
  - Class A, B, C, and D

Need a physical exam and exercise test before starting and exercise program?

What type of test is recommended?

How do you determine medically and legally if it is O.K. to perform the recommended exercise test?

**Indications** for Exercise Testing-
1. Diagnosis
   - SxS
   - Exercise induced SxS
   - Angina
   - Old or new ECG abnormalities
2. Prognosis
   - Use to predict mortality
3. Exercise Capacity, Prescription
4. Evaluate Rx Outcomes

Contraindications to Exercise Testing
- Do the risks of exercise testing outweigh indications?
  - **Absolute** – under no circumstances* should the test be performed
  - **Relative** – must weigh with indications for testing to determine outcome
21 Contraindications for Exercise Testing
Absolute (KNOW!!!(Box 3-6)
- Recent MI, acute event, change in resting ECG
- Unstable Angina
- Uncontrolled arrhythmia
- Severe symptomatic aortic stenosis
- Uncontrolled symptomatic heart failure
- Acute pulmonary embolus or pulmonary infarction
- Acute myocarditis or pericarditis
- Suspected or known dissecting aneurysm
- Acute infections

22 Contraindications for Exercise Testing
Relative (Know!!!(Box 3-6)
- Left main coronary stenosis
- Moderate valvular disease
- Electrolyte abnormalities
- Arterial Hypertension
- Tach or bradarrhythmias
- Hypertrophic cardiomyopathy
- Orthopedic conditions which limit mobility
- High-degree AV block Slide 21
- Ventricular Aneurysm
- Uncontrolled metabolic disease
- Chronic infectious disease

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24 Testing Facility (Emergency Procedures)
- Need appropriate equipment (AHA)
  - Defibrillator?
  - Airway / oxygen
  - Drugs
  - Phone
- Need appropriate staff
  - Physician
  - EMT/nurse
  - Exercise Specialist or equivalent experience

25 Case Study #1 – Should we do GXT?
- John Testavoidy
  - 55 yr old Caucasian male
  - Wt = 197 lbs  Ht = 68 in  28 % Body Fat
  - Abnormal Stress Test (positive for ischemia) 2 years ago
  - Medications (Calan SR – calcium channel blocker)
- Heart Catheterization 2 years ago: results unknown
- Family Hx – Father diagnosed with CAD Disease at Age 49
- Resting BP – 128/88
- Reports being tense and overstressed often