Fitness Evaluation: *Screening and Cardiorespiratory Fitness*

EXS 150
Chap 2

Benefits of Exercise

- How much is enough?
  - Health Vs. Fitness
    - Physical Activity
    - Fitness
  - Surgeon Generals Report (Centers for Disease Control, 1996)
- Effects of Regular Exercise
  - Improved cardiorespiratory function
  - Reduction in Heart Disease Risk Factors
  - Decreased Mortality (death) and Morbidity (disease)
  - Improved psychological functioning

What are the risks of exercise?

- Injury? _____
- Myocardial Infarction (heart attack)? _____
- Death? _____

How do you minimize risk?

- ESTABLISH A PLAN!
- Medical Clearance and Follow-up
  - Health Screening
  - Physical exam
- Proper warm-up and cool-down
- Take special consideration to the environment

How do I screen myself?

- Physical Activity Readiness Questionnaire (PAR-Q)
  - Also referred to as Health Status Questionnaire
  - See also Laboratory 2.1
- Do I need a physical exam?
- What other aspects should I consider?
  - Diagnoses
  - Hospitalizations/ Surgery
  - Medications (action, dose)
    - Taking meds regularly
  - Family History
  - Physical Activity History

Revised Physical Activity Readiness Questionnaire (PAR-Q)

Yes	No	1. Has a doctor ever said that you have a heart condition and recommended only medically supervised activity?
Yes	No	2. Do you have chest pain brought on by physical activity?
Yes	No	3. Have you developed chest pain in the past month?
Yes	No	4. Have you on one or more occasions lost consciousness or fallen over as a result of dizziness?
Yes	No	5. Do you have a bone or joint problem that could be aggravated by the proposed physical activity?
Yes	No	6. Has a doctor ever recommended medication for your blood pressure or a heart condition?
Yes	No	7. Are you aware, through your own experience or doctor's advice, of any other physical reason that would prohibit you from exercising without medical supervision?

If you answered "yes" to any of these questions, call your personal physician or healthcare provider before increasing your physical activity.

How do we measure cardiorespiratory fitness?

- Concept of VO_2max (VO_2max)
  - Criterion measure of cardiorespiratory fitness
  - "endurance capacity of the cardiorespiratory system and the exercising skeletal muscles"
- How is VO_2max measured?
  - Maximal Test – VO_2max and Stress Testing
  - Submaximal Tests – Use heart rate response to exercise (assumptions) to predict VO_2max

VO_2max and Stress Testing

- Terminology specifically refers to an exercise test usually conducted on a cycle ergometer or treadmill lasting approximately 8 to 12 minutes in length in which an individual must exercise to "maximal" point.
- VO_2 max:
  - Amount of oxygen consumed, highest heart rate reached, subjective rating of effort, amount of lactate produced
- Stress Test
  - Looking for abnormal responses in heart rate and rhythm (ECG) , blood pressure, and symptoms
  - Physician is usually present

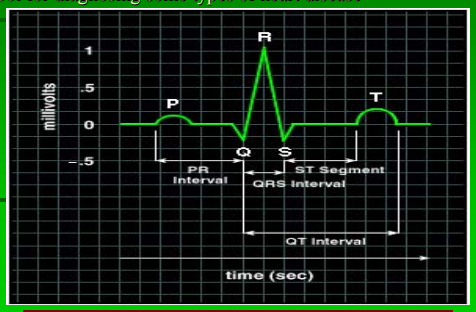
VO2max and "Stress" Testing

VO_2max and "Stress" Testing

Electrocardiogram (ECG/EKG) – tells about the electrical ...

Electrocardiogram (ECG/EKG)

- tells about the electrical activity in the heart and is used as a tool for diagnosing some types of heart disease



How exercise ECG is used in stress testing

How exercise ECG is used in stress testing

Normal

Possible Heart Disease

How do we measure cardiorespiratory fitness?

Submaximal tests for measuring cardiorespiratory fitness

- 1.5 mile run test (Table 2.1)- idea is to complete the distance in the shortest time possible
- 1 mile walk test (Table 2.2) – idea is to walk the distance as fast as possible
- Cycle ergometer tests (Table 2.3 25)- base fitness on heart rate response to exercise
- Step Test (Fig. 2.2) – fitness is based on recovery heart rate from 3 minutes of stepping

Cardiorespiratory Fitness:
What do I do with the results?

- Use normative percentile values to give you and idea of your fitness (Table 2.1 - 2.6)
- Superior rating for any of the tests equates to the top 15% for your age and gender

Discussion: *Who or what has the highest cardiorespiratory fitness?*