Chapter 7: Basics of Cardio Respiratory Endurance

Lesson 1: Your heart, lungs, & circulation

Aerobic activities & the body

- aerobic activity- continuous activity that requires large amounts of oxygen (aerobic means with oxygen)
- strengthen heart & lungs

Circulatory system- heart, blood & blood vessels

- Comes from the Latin root “circus” = circle

Heart- fig 7.1 p. 195

- Rt. Side pumps blood to the lungs
- Lt. side pumps oxygen rich blood to the rest of the body
- Average h.r. is 72 BPM

Blood vessels- 3 types

1. Arteries- carry blood from the heart to the major extremities
2. Capillaries- carry O2 & other nutrients to individual cells
3. Veins- deliver blood back to the heart

Heart pumps 5 liters of blood every minute at rest and 4-5 x’s more during high levels of aerobic activity

Respiratory system- exchanges gases between your body and the environment

Lungs- exchange o2 & co2

- at rest- 6 liters of air per minute
- vigorous exercise- 100 liters of air per minute

-muscles become conditioned=breathe more efficiently

Benefits of aerobic activity

- ^ stroke volume, lowers resting heart rate, conditions the muscles in breathing, ^ energy, less stress, look & feel better

C.r. test –Fitness Check- 3-minute step test, 1.5 mile run/walk

-the hardest part of starting an aerobic conditioning program is overcoming “inertia” (regular routine of inactivity)

Lesson 2: Problems and care of your heart and lungs

Lifestyle disease- heart disease, lung cancer

Risk factors- inactivity, overweight, tobacco, foods high in cholesterol & fat

CVD- leading cause of death in the U.S.= 950,000 deaths per year

Atherosclerosis- fat deposits build up inside the artery walls
-aerobic activity will lower LDL & raise HDL

**Heart attack**- 1 million people in the U.S. suffer from heart attacks

**Sudden cardiac death**- most over 35 yrs. of age / under 35yrs. of age= congenital

**Stroke**- blockage of artery to the brain

**Peripheral vascular disease**- CVD in legs & sometimes arms

**Hypertension**- high blood pressure “silent killer”

**Disease of the lungs**- 400,000 in the U.S. die each year from smoking
  -lung cancer & emphysema

**Blood pressure**- the force of blood in the main arteries
  -**systolic**- greatest point in arteries
  -**diastolic**- lowest point of pressure in the arteries

**Lesson 3: Influences on cardio-respiratory endurance**

**Measuring C.R.E.**- vo2 max= max o2 consumption
  -higher vo2 max=more aerobically fit

**Factors affecting cardio-respiratory endurance**

1. **age**- older- fitness level decreases after age 25
2. **heredity**- genetic make-up
   a. **slow twitch muscle fibers**- greater muscle endurance (contract slowly)
   b. **fast twitch muscle fibers**- little effect on aerobic levels (contract at a faster rate)

   -young adults= 50/50 slow/fast twitch muscle fibers

   -adults with high levels of C.R.E.= 70% fast twitch muscle fibers

3. **body composition**- body comp reduces aerobic capacity
4. **level of conditioning**- affects your endurance

*Benefits of aerobic activity*- fig 7.5 p. 210*

**Making the most of what you have**

-start young, stay active, pay attention to fitness factors you can control, make your body work for you rather than against you

**Lesson 4: Aerobic vs. anaerobic physical activities**

1. anaerobic requires high levels of intensity for a few seconds or minutes
2. **interval training**- alternate high intensity workouts w/ low intensity recovery bouts for several minutes at a time.
   a. Can work at ^ intensities for longer periods of time
   b. Burn more calories
   c. Improve skill-related fitness & health-related fitness