

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

