Aerobic Fitness


Lesson Goal & Objectives

- **Lesson Goal:** To summarize the factors contributing to an individualized cardiovascular fitness program

- **Lesson Objectives:** Following the completion of this lecture the student will be able to discuss:
  - the structure/functions of the cardiovascular system
  - the health-related benefits of cardiovascular activity
  - a model for a personalized physical activity program

Related Terminology (Howley & Franks, 1997)

- **Cardio:** heart
- **Vascular:** blood vessels
- **Respiratory:** lungs and ventilation
- **Aerobic:** working with oxygen

Structure & Functions of the Cardiovascular System

- “The heart and lungs work together to supply oxygen-rich blood to the muscles and the tissues of the internal organs in the body” (NASPE, 1998).

- “Regular exercise makes the heart and lungs work hard; it conditions them. The primary goal of aerobic activity is to raise the heart rate to the training level appropriate for the age group and to maintain it at that level or better” (NASPE, 1998).

Benefits of Participation in Cardiovascular Activities

- **Psychological Health**
  - Stress management
  - Reduced nervous tension

- **Increased Cardiovascular System Efficiency**
  - Control of various chronic degenerative diseases:
    - Adult-onset diabetes
    - Asthma
    - Hypertension
    - Obesit
    - CVD

Components of Cardiovascular Training Session

- **Warm-up prior to physical activity**
  - Prepare heart & other muscles for more intense activity
  - Raise core body temperature

- **Physical activity participation**
  - Principles of Fitness (FITT)
    - Frequency
    - Intensity
    - Time (duration)
    - Type (mode)

- **Cool-down after physical activity**
Developmentally Appropriate Guidelines

- Table 6.2 (p. 89):
  - Primary Ss (K-2): Introduce concept of feeling heart rate and noticing changes with activity levels
  - MHR and THRZ (60-75% MHR)

- Table 6.4 (p. 91):
  - Primary Ss (K-2): 3-5 minutes
  - Intermediate (3-5): 10 minutes
  - MS/HS: 20+ minutes

Personalized Physical Activity Recommendations

- Model for Making Personalized Physical Activity Recommendations (Franks, 1999):
  LPAM
  - Level 1: Activities for Everyone
  - Level 2: Activities for Sedentary People
  - Level 3: Activities for Moderately Active People (Health)
  - Level 4: Activities for Moderately Active People (Fitness)
  - Level 5: Activities for Vigorously Active People (Performance)

Activities for Everyone

"Activities for everyone should be of the type that can be done as part of an individual’s routines at home, work, and during leisure time" (Franks, 1999).

- Walk or ride your bike to school rather than take the bus
- Climb stairs rather than using the elevator
- Park farther away from the store and walk
- Perform daily stretching to prevent low back problems

Activities for Sedentary People

- Sedentary: Cannot walk for 30 minutes continuously without discomfort or pain

  "Inactive individuals should continue to find ways to include activity in their daily routine and should accumulate at least 30 minutes of moderate-intensity activity daily" (Franks, 1999).

- Walking, yard work, cycling, slow dancing, low-impact aerobics
- Physical activity periods broken into 2-4 segments daily
- Emphasis on the accumulation of daily physical activity rather than intensity

Activities for Moderately Active People With Health Goals

- Moderately active: Accumulate 30 minutes of activity daily, or who can walk 30 minutes continuously without pain or discomfort, but could not jog 3 miles (or walk 6 miles at a brisk pace, cycle 12 miles or swim ¾ mile) continuously without discomfort and undue fatigue

- Individuals with specific health goals should perform the following activities (Franks, 1999):
  - Cardiovascular
    - Accumulate at least 30 minutes of moderate-intensity activity
    - Include longer duration and/or higher intensity

Activities for Moderately Active People With Fitness Goals

- Individuals with specific fitness goals should perform the following activities (Franks, 1999):
  - Aerobic Fitness
    - 20-40 minutes of vigorous-intensity activity, 3-5 days/week
    - THRZ 70-85% for adults
    - Fast walking, jogging, cycling, fast dancing, low- to moderate-impact exercise to music, swimming
Activities for Vigorously Active People With Performance Goals

- Vigorously active: Can run 3 miles continuously (or walk fast 6 miles, cycle 12 miles or swim ¾ mile) within the THRZ 3-4 times a week without discomfort or pain
- Individuals who are vigorously active and who have specific performance goals should perform the following activities (Franks, 1999):
  - Sport or Physical Task(s)
    - Develop and/or maintain fitness levels
    - Interval training
    - Motor tasks related to performance
    - Specific skills related to performance
    - Strategy and mental readiness

Lesson Preview

- Cardiovascular scaffolding:
  - Review pp. 76-96
  - Read WV Content Standards
  - Develop some global ideas for K-2 and 3-6 SPARK concepts