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FITT Principle for Cardiovascular Fitness

Cardiovascular fitness relates to the body’s ability to generate energy and deliver oxygen to working muscles. It is considered the most important component of physical fitness and is one of the best indicators of overall health.

Aerobic exercises are best for developing cardiovascular fitness. **Aerobic** means “with oxygen” and includes continuous activities that use oxygen. Walking, biking, jogging, skating, or rowing are just a few examples of aerobic activities. Aerobic activities strengthen the heart and lungs, and make your working muscles more efficient at using oxygen. They also increase stroke volume (amount of blood pumped per heartbeat) and lower your resting heart rate to an average of 72 BPM (beats per minute). A resting heart rate varies. However, the lower your resting heart rate, the more efficient your heart is working.

One long-term result of regular aerobic activity is **cardiovascular endurance**, sometimes called **cardio-respiratory endurance**. This is the ability of the body to work continuously for extended periods of time. Those who have a high level of cardiovascular fitness have lowered risks of adult lifestyle diseases, such as cardiovascular disease, type 2 diabetes, and obesity.

Cardiovascular endurance increases your chances for living a longer and healthier life. It is important to know your FITT Principles so that you gain health benefits for your heart. **Figure 3.1** illustrates the different FITT Principles.

Figure 3.1

FITT Principle Table				
F	Frequency of exercise	How Often	Beginner	3–5 days per week
			Moderate to High	5–7 days per week
I	Intensity of exercise	How Hard	Beginner	Less than 145 BPM
			Moderate to High	145–186 BPM
T	Time of exercise	How Long	Beginner	20–30 minutes
			Moderate to High	30–60 minutes
T	Type of exercise	Which Exercises	A continuous activity that is aerobic (requires oxygen)	

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Cardiovascular Fitness—Activity 1

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Frequency of Exercise Maximum cardiovascular benefits are achieved when you engage in exercise three to five times per week. You may gain additional benefits if you engage in an activity more frequently, but three to five times is the recommended range to improve general fitness.

Intensity of Exercise Intensity refers to how hard you are working. Intensity is one of the most important ways to determine if you are exercising at a level that benefits your heart. This level is called your **Target Heart Rate (THR) Zone**. In general, this means exercising at a level where the heart is beating between 50% and 85% of a person's maximum heart rate (220 minus age) or approximately 142–186 BPM (average for youth).

Charts have been developed so that you do not need to calculate your own Target Heart Rate Zones. These charts are developed using your age and average resting heart rate information. **Figure 3.2** is an example of a Heart Rate Percentage chart. Your own Target Heart Rate Zone may vary. However, using this chart will give you heart rate numbers for a Target Heart Rate Zone that can be used as a guide.

For cardiovascular activities, intensity is monitored by heart rate. Intensity is directly related to how difficult an activity is and how much energy the body needs to sustain an activity. Every activity requires energy, and when exercising, intensity is often measured by how hard and fast the heart is pumping to deliver oxygen to the working muscles. As exercise intensity increases, the heart must work harder to get more oxygen to the muscles.

Exercise designed to improve cardiovascular fitness works to improve the heart's ability to pump blood and the muscle's ability to pull oxygen from the blood. To improve cardiovascular fitness, it is necessary that you exercise at your Target Heart Rate Zone.

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Figure 3.2

Heart Rate Percentages							
Age	MHR	50%	60%	70%	80%	85%	90%
11	209	147	160	172	185	190	197
12	208	146	159	171	183	190	196
13	207	146	158	170	183	189	194
14	206	146	158	170	182	188	194
15	205	139	152	165	178	185	192
16	204	138	151	164	178	184	191
17	203	138	151	164	177	183	190
18	202	137	150	163	176	183	190

Time (Duration) of Exercise Time refers to how long you should exercise in your Target Heart Rate Zone. To achieve the greatest cardiovascular benefit, a workout should be at least 20 minutes of continuous or intermittent aerobic activity per exercise session. Intermittent means that the activity should be done in blocks of time that are 10 minutes or longer. Cardiovascular benefits continue to increase as the exercise duration is extended to 60 minutes. Beyond 60 minutes of activity, cardiovascular benefits start to level off, and the risk of injury increases.

Type of Exercise Types of cardiovascular fitness exercises include rhythmical, repetitive activities that involve large muscle groups and are performed over prolonged periods. These types of activities provide the greatest improvements in cardiovascular fitness. The list of activities that fall into this category include walking, cycling, swimming, jogging, and aerobic class type activities.

In summary, to improve cardiovascular fitness, a regular aerobic exercise program, repeated 3–5 times per week for 20–60 minutes and at an intensity of 142–186 BPM (50%–85% of the maximum heart rate for youth), is ideal.

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Minimal Aerobic Workout Activity

You will work out for 20 minutes and stay at the lower limits of your Target Heart Rate Zone (around 155 BPM). This is the minimum amount of time recommended, and you will record what happens to your heart rate when you are working at a low to moderate intensity.

- Warm up and perform dynamic stretching (stay below 142 BPM).
- Begin aerobic workout of your choice (speed walking, jogging, biking, stair climber, etc.). You must try to keep your heart rate between the lower limits of your target heart rate zone, or between 142 and 160. Exercise for 20 minutes.
- Cool down and perform stretching (get heart rate between 100 and 125 BPM).

How did you feel during the aerobic workout?

How quickly did you recover during the cool-down? Why?

Evaluation

1. What does aerobic mean?

2. If you are aerobically fit, what health risks are decreased?

3. What types of activities are aerobic?

4. If you have a low resting heart rate, what does that mean?
