

CHAPTER 7 Basics of Cardiorespiratory Endurance

Lesson 2 Problems and Care of Your Heart and Lungs

What You Will Do

- Identify changeable risk factors that can lead to diseases of the heart and lungs.
- Explain diseases that can result from certain lifestyles.
- Apply healthy behaviors that can reduce the risk of developing lifestyle diseases.



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Terms to Know

- | | |
|--------------------------|-------------------------------|
| ■ lifestyle diseases | ■ peripheral vascular disease |
| ■ cardiovascular disease | ■ hypertension |
| ■ atherosclerosis | ■ emphysema |
| ■ stroke | ■ blood pressure |



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Problems and Care of Your Heart and Lungs

Maintaining the health of your heart and lungs requires an awareness of health risk factors and a lifestyle that reduces your risks.



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Problems and Care of Your Heart and Lungs

Heart disease, lung cancer, and other illnesses of the circulatory and respiratory systems are sometimes referred to as **lifestyle diseases**.



Term to Know

Lifestyle diseases

Diseases that are the result of certain lifestyle choices.

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Problems and Care of Your Heart and Lungs

Some risk factors for heart and lung disease are:

inactivity

being overweight

smoking and using other forms of tobacco

eating foods that are high in fat and cholesterol

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In addition to being a lifestyle disease, heart disease is also considered a **cardiovascular disease**, or **CVD**.

Term to Know

Cardiovascular disease

Any medical disorder that affects the heart or blood vessels.

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One condition that is present in virtually all individuals diagnosed with CVD is **atherosclerosis**.

Atherosclerosis is linked to a person's cholesterol levels.



Term to Know

Atherosclerosis

A condition in which a fatty deposit called plaque builds up inside arteries, restricting or cutting off blood flow.

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A heart attack results from blockage of a blood vessel that feeds the heart muscle.

The symptoms of heart attack include:

- Tingling or pain in the left arm
- Sweating
- Nausea
- Shortness of breath



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Sudden death from cardiac arrest is referred to as sudden cardiac death.

In people under 35, sudden cardiac death is rare and is usually the result of a congenital heart defect. In people over 35, it is usually caused by atherosclerosis.



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The building up of deposits in the arteries poses a risk of **stroke** to the brain.



Term to Know

Stroke

When blood flow to a person's brain is interrupted or cut off entirely by the blockage of an artery.

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Problems and Care of Your Heart and Lungs

Some warning signs of stroke include:

Sudden numbness or weakness of the face, arm, or leg, especially on one side of the body

Sudden confusion, trouble speaking or understanding

Sudden trouble seeing in one or both eyes

Sudden trouble walking, dizziness, or loss of balance or coordination

Sudden, severe headache with no known cause

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Peripheral vascular disease causes pain during physical activity.

Risk factors include cigarette smoking and type 2 diabetes, which frequently occurs in overweight people.

Term to Know

Peripheral vascular disease
A CVD that occurs mainly in the legs and, less frequently, in the arms.

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Problems and Care of Your Heart and Lungs

Hypertension is a key risk factor in heart attacks, stroke, and heart failure.

It rarely has symptoms.



Term to Know

Hypertension

High blood pressure.

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Lung cancer causes 200,000 deaths each year.

Half of these deaths are directly linked to cigarette smoking.

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Problems and Care of Your Heart and Lungs

People with **emphysema** have difficulty breathing and develop a chronic cough.

In nearly all cases, the disease is caused by cigarette smoking.



Term to Know

Emphysema

A disease in which the small airways of the lungs lose their normal elasticity, making them less efficient in helping to move air in and out of the lungs.

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Problems and Care of Your Heart and Lungs

To keep your heart and lungs healthy:

Maintain a program of aerobic activity

Avoid tobacco

Maintain a healthy weight

Eat right

Have regular medical checkups



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Problems and Care of Your Heart and Lungs

As part of a regular checkup, your health care professional checks your **blood pressure**.



Term to Know

Blood pressure

The force of the blood in the main arteries.

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Lesson 2 Problems and Care of Your Heart and Lungs

- 1. Vocabulary** What is blood pressure?
- 2. Recall** What are some symptoms of heart attack?
- 3. Recall** Explain sudden cardiac death from exercise. What can cause it in individuals under age 35? In those over age 35?

3. Recall

Death from cardiac arrest; under 35: congenital defects. Over 35: atherosclerosis.

CHAPTER 7 Basics of Cardiorespiratory Endurance

Lesson 3 Influences on Cardiorespiratory Endurance

What You Will Do

- Describe how cardiorespiratory endurance is measured.
- Identify factors that influence cardiorespiratory endurance.
- Evaluate the effect of added weight on aerobic performance.
- Explain the physical, mental, and emotional benefits of cardiorespiratory endurance.

CHAPTER 7 Basics of Cardiorespiratory Endurance

Lesson 3 Influences on Cardiorespiratory Endurance

Terms to Know

- maximal oxygen consumption (VO_{2max})
- fast-twitch muscle fibers
- slow-twitch muscle fibers

CHAPTER 7 Basics of Cardiorespiratory Endurance

Lesson 3 Influences on Cardiorespiratory Endurance

Influences on Cardiorespiratory Endurance

It is possible to maintain high levels of cardiorespiratory endurance, regardless of age.

Cardiorespiratory endurance is the ability of the body to work continuously for extended periods of time.

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Influences on Cardiorespiratory Endurance

Fitness experts generally measure cardiorespiratory endurance in terms of **maximal oxygen consumption**, or VO_{2max} .



Term to Know

maximal oxygen consumption (VO_{2max})

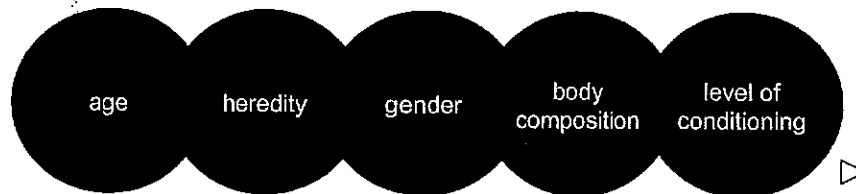
The largest amount of oxygen your body is able to process during strenuous aerobic exercise.

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Lesson 3 Influences on Cardiorespiratory Endurance

Factors Affecting Cardiorespiratory Endurance

Factors that affect cardiorespiratory endurance include:



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Factors Affecting Cardiorespiratory Endurance

As a person ages, he or she loses cardiorespiratory endurance.

Generally, one's fitness begins a gradual decline after age 25.

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Factors Affecting Cardiorespiratory Endurance

Your genetic makeup affects both your initial levels of cardiorespiratory endurance and your capacity to improve it.

An individual's ratio of slow- to fast-twitch muscle fibers can make a difference in his or her fitness level.



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Factors Affecting Cardiorespiratory Endurance

Found in higher proportion in long-distance runners, **slow-twitch muscle fibers** are associated with greater muscle endurance and an increased ability to do aerobic work.



Term to Know

Slow-twitch muscle fibers

Muscle fibers that contract at a slow rate.

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Factors Affecting Cardiorespiratory Endurance

Fast-twitch muscle fibers are found in greater proportion in weight lifters.

They have little bearing on aerobic levels.



Term to Know

Fast-twitch muscle fibers

Muscle fibers that contract rapidly, thus allowing for greater muscle strength.

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Factors Affecting Cardiorespiratory Endurance

Gender has an effect on cardiorespiratory endurance.

After puberty, males on average retain higher cardiorespiratory fitness levels than females because they have higher hemoglobin levels and carry less body fat than females.



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Factors Affecting Cardiorespiratory Endurance

Your percentage of body fat influences your cardiorespiratory endurance.

Carrying high amounts of body fat reduces aerobic capacity because fat is “extra baggage” that does not help you burn calories.



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Factors Affecting Cardiorespiratory Endurance

Your level of conditioning can affect your cardiorespiratory endurance.

If you are currently doing no aerobic activity at all, you can improve your fitness level by beginning a personal fitness program that includes aerobic exercise.



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Factors Affecting Cardiorespiratory Endurance

Benefits of cardiorespiratory fitness

Reduced anxiety

Improved concentration

Improved self-image

Decreased stress

Enhanced energy levels

Reduced risk of illness and disease

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Factors Affecting Cardiorespiratory Endurance

Anyone can sustain a high level of fitness, regardless of age, gender, and heredity.

To do so:

- Start while you're young.
- Stay active.
- Pay attention to the fitness factors you can control.
- Make your body work *for* you, rather than *against* you.

CHAPTER 7 Basics of Cardiorespiratory Endurance

Lesson 3 Influences on Cardiorespiratory Endurance

1. **Vocabulary** What is VO_{2max} ?
2. **Recall** Explain why males on average have higher VO_{2max} levels than females.
3. **Recall** Name two factors that influence a person's cardiorespiratory endurance level. Name two benefits of maintaining a high cardiorespiratory endurance level.

3. Recall

Heredity, gender, age, body composition, level of conditioning, and lifestyle. Benefits include: concentration, self image, and stress.