

Objectives

- ▶ **Describe** the functions of the three types of muscles.
- ▶ **Explain** how you can keep your muscular system healthy.

The Muscles in Your Body

- Muscles move your eyes as you read.
- Muscles in your chest allow you to breathe.
- Muscles in your heart pump your blood.
- Every time your body moves, muscles are at work.

End of
Slide

Types of Muscle

Your body has three types of muscle tissue that perform different functions.

- **Smooth muscle** is involuntary muscle that causes movements within your body.
- **Cardiac muscle** is involuntary muscle that is found only in the heart.
- **Skeletal muscles** are the muscles that you control to do activities, such as walk or play a musical instrument. A thick strand of tissue called a **tendon** attaches a muscle to a bone.

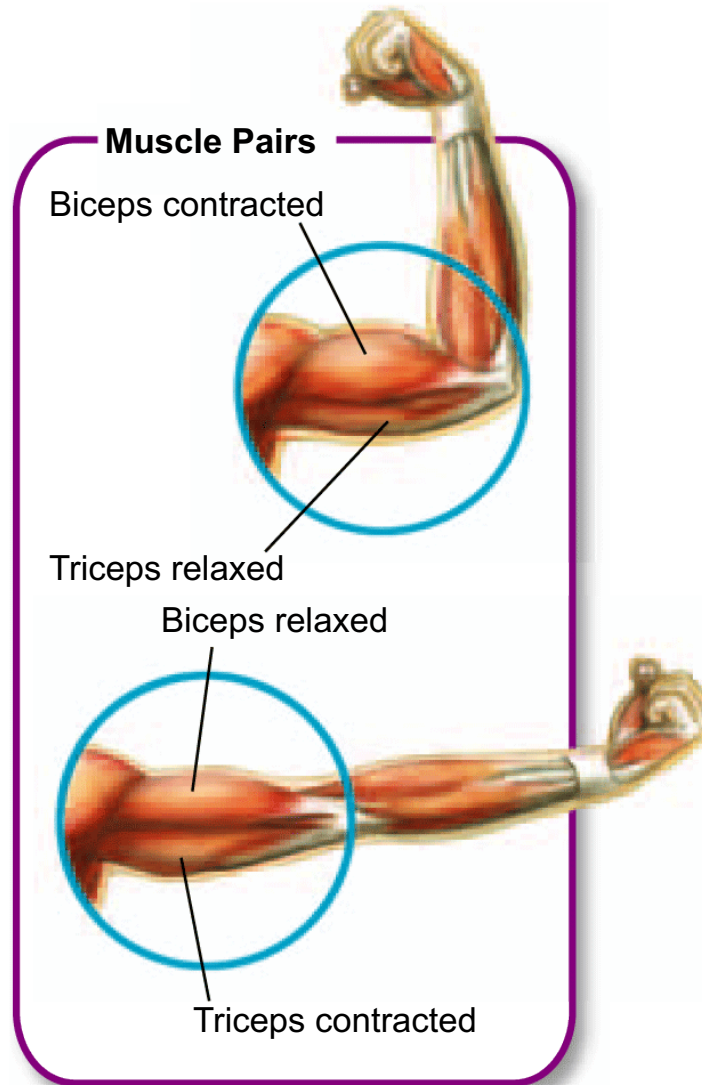
End of
Slide

How Muscles Work

- All muscles do work by contracting, or becoming shorter and thicker.
- Many skeletal muscles work in pairs.
 - One muscle in the pair contracts to move the bone in one direction.
 - Then, the other muscle in the pair contracts to move the bone back.

End of
Slide

Section 11.2 Your Muscular System



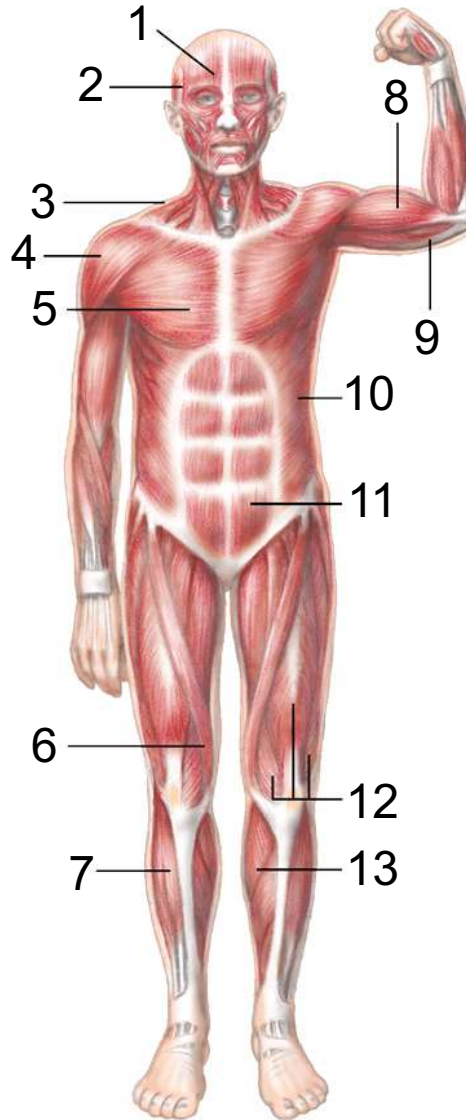
Muscle Tone

- Even when a skeletal muscle is not contracting to cause movement, a few of its individual muscle fibers are still contracting.
- Contractions tense and firm the muscle.
- This slight tension is called **muscle tone**.
- Muscles that cannot contract due to injury, or are not used often, will weaken and shrink, a condition known as **atrophy**.

End of
Slide

The Muscular System

- 1) Frontalis
- 2) Temporalis
- 3) Trapezius
- 4) Deltoid
- 5) Pectoralis major
- 6) Sartorius
- 7) Tibialis anterior



- 8) Biceps
- 9) Triceps
- 10) External oblique
- 11) Rectus abdominus
- 12) Quadriceps muscles
- 13) Gastrocnemius

End of
Slide

Keeping Healthy

- You can maintain a healthy muscular system by regularly participating in different types of exercise.
- To help prevent injuries, exercise sessions should include a warm-up and cool-down period.

End of
Slide

Working Your Muscles

- Some types of exercise increase a muscle's endurance—how long it can contract without tiring.
- Other exercises make individual fibers grow, which causes the muscles to thicken and increase in strength.
- **Anabolic steroids** are artificial forms of the male hormone testosterone.

End of
Slide

Avoiding Muscle Injuries

- **Strains** A muscle **strain**, or a pulled muscle, is a painful injury that may happen when muscles are overworked or stretched too much or too quickly.
- **Tendonitis** Overuse of tendons may lead to painful swelling and irritation called **tendonitis** (ten duh NY tis).
- Prevent injuries
 - regular strengthening and stretching exercises
 - vary your exercise routine
 - warm up and cool down
 - stop exercising if you feel a sharp or sudden pain

End of
Slide

Preventing Muscle Cramps

- A muscle cramp is a strong, uncontrolled muscle contraction.
- To relieve a cramp, try massaging the affected area and exercising the limb gently.
- Stretching and drinking plenty of water before and during exercise can help you avoid muscle cramps.

End of
Slide

Vocabulary

smooth muscle	Involuntary muscle that causes movements inside your body, such as those involved in breathing and digestion.
cardiac muscle	Involuntary muscle that is found only in the heart.
skeletal muscle	Voluntary muscle that is attached to and moves your bones.
tendon	A thick strand of tissue that attaches a muscle to a bone.
muscle tone	Contractions of limited muscle fibers that keep a muscle tense, but do not produce movement.

Vocabulary

atrophy A condition in which muscles that cannot contract or are not used often weaken and shrink.

anabolic steroid An artificial form of the male hormone testosterone that is used to increase muscle size and strength.

strain A pulled muscle.

tendonitis Painful swelling and irritation of a tendon, often caused by overuse.

End of
Slide