# The Muscular System

## Learning Exercises

Class ___________________________ Name ___________________________

### Matching Word Parts 1
Write the correct answer in the middle column.

<table>
<thead>
<tr>
<th>Definition</th>
<th>Correct Answer</th>
<th>Possible Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1. condition</td>
<td></td>
<td>-cele</td>
</tr>
<tr>
<td>4.2. fascia</td>
<td></td>
<td>fasci/o</td>
</tr>
<tr>
<td>4.3. fibrous connective tissue</td>
<td></td>
<td>fibr/o</td>
</tr>
<tr>
<td>4.4. hernia, swelling</td>
<td></td>
<td>-ia</td>
</tr>
<tr>
<td>4.5. movement, motion</td>
<td></td>
<td>kines/o, kinesi/o</td>
</tr>
</tbody>
</table>

### Matching Word Parts 2
Write the correct answer in the middle column.

<table>
<thead>
<tr>
<th>Definition</th>
<th>Correct Answer</th>
<th>Possible Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.6. coordination</td>
<td></td>
<td>my/o</td>
</tr>
<tr>
<td>4.7. muscle</td>
<td></td>
<td>-rrhexis</td>
</tr>
<tr>
<td>4.8. rupture</td>
<td></td>
<td>tax/o</td>
</tr>
<tr>
<td>4.9. tendon</td>
<td></td>
<td>tend/o</td>
</tr>
<tr>
<td>4.10. tone</td>
<td></td>
<td>ton/o</td>
</tr>
</tbody>
</table>

### Matching Muscle Directions and Positions
Write the correct answer in the middle column.

<table>
<thead>
<tr>
<th>Definition</th>
<th>Correct Answer</th>
<th>Possible Answers</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.11. cross-wise</td>
<td></td>
<td>lateralis</td>
</tr>
<tr>
<td>4.12. ring-like</td>
<td></td>
<td>oblique</td>
</tr>
<tr>
<td>4.13. slanted at an angle</td>
<td></td>
<td>rectus</td>
</tr>
<tr>
<td>4.14. straight</td>
<td></td>
<td>sphincter</td>
</tr>
<tr>
<td>4.15. toward the side</td>
<td></td>
<td>transverse</td>
</tr>
</tbody>
</table>
Definitions

Select the correct answer and write it on the line provided.

4.16. The ___________ muscles are under voluntary control.
    involuntary    nonstriated    skeletal    visceral

4.17. A/An ___________ is thickening on the surface of the
    calcaneus bone.    heel spur    impingement syndrome    overuse injury    shin splint

4.18. Turning the hand so the palm is upward is called ___________.
    extension    flexion    pronation    supination

4.19. One of the symptoms of Parkinson's disease is ___________, which is extreme slowness
    of movement.
    bradykinesia    dyskinesia    hypotonia    myotonia

4.20. A/An ___________ is a physician who specializes in physical
    medicine and rehabilitation with the focus on restoring function.
    exercise physiologist    physiatrist    physiologist    rheumatologist

4.21. The term ___________ means pertaining to muscle tissue and
    fascia.
    aponeurosis    fibrous sheath    myocardium    myofascial

4.22. A/An ___________ is a narrow band of nonelastic, fibrous tissue that attaches a muscle to
    bone.
    aponeurosis    fascia    ligament    tendon

4.23. A band of fibers that holds structures together abnormally is a/an ___________.
    These bands can form as the result of an injury or surgery.
    adhesion    aponeurosis    atrophy    contracture

4.24. The paralysis of both legs and the lower part of the body is known as ___________.
    hemiparesis    hemiplegia    paraplegia    quadriplegia

4.25. The medical term meaning pain in a tendon is ___________ or tenalgia.
    tenodesis    tenodynia    tendinosis    tenolysis

Abbreviation Identification

Write the correct answer on the line provided.

4.26. CTS
4.27. DTR
4.28. ROM
4.29. RSD
4.30. SCI
Which Word?
Select the correct answer and write it on the line provided.

4.31. An injury to the body of the muscle or the attachment of a tendon is known as a/an _____________. These are usually associated with overuse injuries that involve a stretched or torn muscle or tendon attachment.
   sprain    strain

4.32. A ________________ is a drug that causes temporary muscle paralysis by blocking the transmission of nerve stimuli to the muscles.
   neuromuscular blocker    skeletal muscle relaxant

4.33. The condition of abnormal muscle tone that results in impairment of voluntary muscle movement is known as ________________.
   dystaxia    dystonia

4.34. Inflamed and swollen tendons caught in the narrow space between the bones within the shoulder joint cause the condition known as ________________.
   impingement syndrome    intermittent claudication

4.35. The study of the human factors that affect the design and operation of tools and the work environment is known as ________________.
   ergonomics    kinesiology

Spelling Counts
Find the misspelled word in each sentence. Then write that word, spelled correctly, on the line provided.

4.36. An antispasmydic is administered to suppress smooth muscle contractions of the stomach, intestine or bladder. ________________

4.37. The medical term for hiccups is singultas. ________________

4.38. Myasthenia gravis is a chronic autoimmune disease that affects the neuromuscular junction and produces serious weakness of voluntary muscles. ________________

4.39. A ganglionic cyst is a harmless fluid-filled swelling that occurs most commonly on the outer surface of the wrist. ________________

4.40. Pronation is the movement that turns the palm of the hand downward or backward. ________________

Term Selection
Select the correct answer and write it on the line provided.

4.41. The term ________________ means the rupture of a muscle is.
   myocole    myorrhaphy    myorhexis    myotomy

4.42. The term meaning the breaking down of muscle tissue is ________________.
   myoclonus    myolysis    myomalacia    myoparesis
4.43. The term ________________ means abnormally decreased muscle function or activity.

hyperkinesia  hypotonia  hypokinesia  hypotonia

4.44. A/An ________________ injury can be a strain or tear on any of the three muscles that straighten the hip and bend the knee.

Achilles tendon  hamstring  myofascial  shin splint

4.45. The specialized soft tissue manipulation technique used to ease the pain of conditions such as fibromyalgia, movement restrictions, and temporomandibular joint disorders is known as

________________________________________

myofascial release  occupational therapy  RICE  therapeutic ultrasound

**Sentence Completion**

Write the correct term on the line provided.

4.46. The process of recording the strength of muscle contractions as the result of electrical stimulation is called ________________ (EMG).

4.47. An inflammation of the tissues surrounding the elbow is known as ________________.

4.48. The debilitating chronic condition characterized by fatigue, diffuse and specific muscle, joint, or bone pain, and a wide range of other symptoms is known as ________________ syndrome (FMS).

4.49. The movement during which the knees or elbows are bent to decrease the angle of the joints is known as ________________.

4.50. An inflammation of the plantar fascia that causes foot or heel pain when walking or running is known as ________________.

4.51. Pain in the leg muscles that occurs during exercise and is relieved by rest is known as ________________. This condition is due to poor circulation and is associated with peripheral vascular disease.

4.52. The release of a tendon from adhesions is known as ________________. This procedure is the opposite of tenodesis.

4.53. A/An ________________ is a physician who specializes in the diagnosis and treatment of arthritis and other diseases of the joints that are characterized by inflammation in the connective tissues.

4.54. A weakness or slight muscular paralysis is known as ________________.

4.55. A stiff neck due to spasmodic contraction of the neck muscles that pull the head toward the affected side is known as ________________ or wryneck.

**Word Surgery**

Divide each term into its component word parts. Write these word parts, in sequence, on the lines provided. When necessary, use a slash (/) to indicate a combining vowel. (You may not need all of the lines provided.)

4.56. Electroneuromyography is a procedure for testing and recording neuromuscular activity by the electric stimulation of the nerve trunk.

__________________________

4.57. Hyperkinesia means abnormally increased motor function or activity.

__________________________
4.58. **Myoclonus** is the sudden, involuntary jerking of a muscle or group of muscles.

4.59. **Polymyositis** is a muscle disease characterized by the inflammation and weakening of voluntary muscles in many parts of the body at the same time.

4.60. **Sarcopenia** is the age-related reduction in skeletal muscle mass in the elderly.

**True/False**

If the statement is true, write *True* on the line. If the statement is false, write *False* on the line.

4.61. ______ Overuse tendinitis is inflammation of tendons caused by excessive or unusual use of a joint.

4.62. ______ Hemiplegia is the total paralysis of the lower half of the body.

4.63. ______ A spasm is a sudden, violent, involuntary contraction of one or more muscles.

4.64. ______ Ataxia is the distortion of voluntary movement such as in a tic or spasm.

4.65. ______ Striated muscles are located in the walls of internal organs such as the digestive tract, blood vessels, and ducts leading from glands.

**Clinical Conditions**

Write the correct answer on the line provided.

4.66. George Quinton developed a swelling on the outer surface of his wrist. His doctor diagnosed this as being a/an _______ and explained that this was a harmless fluid-filled swelling.

4.67. Raul Valladares has a protrusion of a muscle substance through a tear in the fascia surrounding it. This condition is known as a/an _______.

4.68. Louisa Ferraro experienced _______ of her leg muscles due to the disuse of these muscles over a long period of time.

4.69. Jasmine Franklin has _______. This is a condition in which there is diminished tone of the skeletal muscles.

4.70. Carolyn Goodwin complained of profound fatigue that is not improved by bed rest and was made worse by physical or mental activity. After ruling out other causes, her physician diagnosed her condition as being _______ syndrome (CFS).

4.71. Chuan Lee, who is a runner, required treatment for _______. This condition is a painful inflammation of the Achilles tendon caused by excessive stress being placed on that tendon.

4.72. For the first several days after his fall, Bob Hill suffered severe muscle pain. This condition is known as _______ or myodynia.

4.73. Jose could not play for his team because of a/an _______.

4.74. Due to a spinal cord injury, Marissa Giannetti suffers from _______, which is paralysis of all four limbs.

4.75. Duncan McDougle has slight paralysis on one side of his body. This condition, which was caused by a stroke, is known as _______.

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Which Is the Correct Medical Term?
Select the correct answer and write it on the line provided.

4.76. The term ______________________ describes a neuromuscular disorder characterized by the slow relaxation of the muscles after a voluntary contraction.
  atonic       dystaxia       dystonia       myotonia

4.77. The term ______________________, which is also known as tendinoplasty, is the surgical repair of a tendon.
  tenectomy     tenodesis      tenolysis     tenoplasty

4.78. During ______________________, the arm moves inward and toward the side of the body.
  abduction     adduction       circumduction   rotation

4.79. Abnormal softening of a muscle is known as ______________________.
  myomalacia     myorrhaphy      myorrhesis     myosclerosis

4.80. The term ______________________ means bending the foot upward at the ankle.
  abduction      dorsiflexion   elevation      plantar flexion

Challenge Word Building
These terms are not found in this chapter; however, they are made up of the following familiar word parts. If you need help in creating the term, refer to your medical dictionary.

  poly-       card/o       -algia
  fasci/o     -desis
  herni/o     -ectomy
  my/o        -itis
  sphincter/o -necrosis
  -otomy
  -pathy
  -rraphy

4.81. Any abnormal condition of skeletal muscles is known as ______________________.

4.82. Pain in several muscle groups is known as ______________________.

4.83. The death of individual muscle fibers is known as ______________________.

4.84. Surgical suturing of torn fascia is known as ______________________.

4.85. A surgical incision into a muscle is a/an ______________________.

4.86. The surgical attachment of a fascia to another fascia or to a tendon is known as ______________________.

4.87. Inflammation of the muscle of the heart is known as ______________________.

4.88. The surgical removal of fascia is a/an ______________________.

4.89. The surgical suturing of a defect in a muscular wall, such as the repair of a hernia, is a/an ______________________.

4.90. An incision into a sphincter muscle is a/an ______________________.
Labeling Exercises
Identify the movements in the accompanying figures by writing the correct term on the line provided.

4.91. 
4.92. 
4.93. 
4.94. 
4.95. 
4.96. 
4.97. 
4.98. 
4.99. 
4.100. 

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