The Muscular System

- Characteristics of Muscles
- _____ – ability to respond to a stimulus (i.e.: nerve impulse)
- _____ – muscle fibers that are stimulated by nerves contract (become shorter) and causes movement
- _____ – ability to be stretched
- _____ – allows the muscle to return to its original shape after it has been stretched
- The Muscular System
- **Three types of muscles**
  - **_____ (involuntary) – cannot be controlled by will.**
  - **_____ – control the contractions of the heart.**
  - **_____ (Voluntary) – can be controlled by will.**
- Function of Skeletal muscles
- Attach to bones to provide voluntary _____
  - Tendons: strong, tough connective cords
  - Fascia: tough, sheet-like membrane
- Produce _____ and _____ for the body
- Help maintain _____
- _____ internal organs
- Function of Smooth Muscle
- Called smooth muscle because they are unmarked by striations
- Unattached to bones, act slowly, do not tire easily and can remain _____ for a long time
- Not under _____ control so they are also called involuntary muscles
- Found in walls of internal _____
- Function of cardiac muscle

- Found only in the _____
- _____ muscle
- Requires a _____ supply of _____ to function
- Cardiac muscle cells begin to die after 30 _____ of oxygen cut-off
- Definitions
- _____:
  - Moving a body part toward the midline
- _____:
  - Moving a body part away from the midline
- _____:
  - Decreasing the angle between two bones or bending body parts
- _____:
  - Increasing the angle between two bones or straightening the body part
- _____:
  - Turning a body part around its own axis
- _____:
  - Moving in a circle at a joint
- State of _____ contraction is called:
  - _____ _____
- Loss of muscle tone occurs when muscles are not used for a long period of time. Muscles _____ (shrink in size and lose strength) and results in:
  - _____
- _____ _____ is the most common type of contracture seen, but fingers, knees and other joints can be affected
- MUSCLES YOU NEED TO KNOW THE FUNCTIONS OF:
- Biceps – _____ lower arm

- Deltoid – _____ arm; injection site
- Sternocleidomastoid – turns _____
- Gastrocnemius – flexes sole of _____
- Latissimus dorsi – _____ & _____ upper arm
- Pectoralis major – _____ and _____ upper arm
- intercostals – moves ribs for breathing
- Trapezius – extends _____, moves _____
- Triceps – _____ lower arm
- Gluteus maximus – extends _____; injection site
- Sartorius – _____ thigh, flexes ____
- Vastus lateralis – extends leg
- Rectus abdominus – _____ the abdomen
- Rectus femoris – flexes _____ & extends lower _____
- Tibialis anterior – flexes and inverts _____
- _____
- Chronic, widespread pain in specific muscle site; numbness and tingling in arms or legs; headaches
- Cause unknown
- Treat symptoms – pain relief; stress reduction and muscle relaxers
- _____

_____

- Group of inherited diseases that cause chronic, progressive muscle atrophy resulting in total disability and early death
- No cure
- Treatment used to slow progression of disease
- _____

_____

- Chronic condition where nerve impulses are not transmitted correctly leading to progressive muscular weakness and paralysis; affects respiratory muscles and can be fatal
- Cause unknown
- Treatment is supportive
- _____

_____

- Sudden, painful involuntary muscle contractions
- Caused from overexertion, low electrolytes or poor circulation
- Treat by applying gentle pressure and stretching of the affected muscle
- _____
- Overstretching of a muscle or tendon frequently in legs, back or arms
- Caused by sudden muscle exertion
- Treated by resting, muscle relaxants, or pain medications, elevation of extremity and applying hot/cold compresses
- RANGE OF MOTION
- ????? WHY ?????
- Done to _____ health of the musculoskeletal system (muscle/skeleton)
- Each joint and muscle is moved through its full range for patients with limited ability to move
- Administered by: PT, RN, Assistant, or other authorized personnel (with training)
- Done to prevent problems caused by lack of movement
- Problems from lack of movement
- _____
  - Tightening and shortening of a muscle resulting in a permanent flexing of a joint
- _____ _____
  - Muscles become weak and joints become stiff

- _____ impairment
  - Blood clots and pressure ulcers can develop
- _____ loss
  - Especially calcium from the bones making bones brittle and easily to be fractured
- Other problems
  - Poor appetite; _____; urinary infections; respiratory problems; and pneumonia
- Types of ROM
- _____ ROM
  - Performed by patients who are able to move each joint without assistance
- _____ _____ ROM
  - Patient actively moves the joints but receives assistance to complete the entire range
- _____ ROM
  - Another person moves each joint for a patient who is not able to exercise
- _____ ROM
  - Exercises are performed by a PT against resistance
- Definitions
- _____ – moving away from midline
- _____ – moving toward midline
- _____ – bending of body part
- _____ – straightening of body part
- _____ – moving around its own axis
- _____ – moving in a circle at a joint
- Principles to follow
- Movement should be _____ and _____
- Support provided to the parts _____ and _____ the joint being exercised

- Never force a joint beyond its ROM or to the point of _____
- STOP if a person complains of pain
- Perform each movement _____ times
- Encourage patient to _____ as much as possible
- Prevent patient _____
- Keep door closed and patient screened off
- Use correct _____ _____
- Body Mechanics
- 4 main reasons…
- Muscles work best when used correctly
- Correct use of muscles makes lifting, pulling and pushing _____
- Prevents unnecessary _____ and _____ therefore, saves energy
- Prevents _____ to self
- 8 rules of good body mechanics
- Maintain broad base of _____ (8-10 in.)
- Bend from _____ and knees to get close to object
- Use _____ muscles: shoulders, arms, hips, thighs
- Use weight of body to help _____/_____
- Carry heavy objects _____
- Avoid _____ body; turn whole body when changing direction
- Avoid _____ for long periods
- Get _____ if object is too heavy