

CONNECTICUT VALLEY HOSPITAL

Physical Therapy Services

Re: Treatment Practices – Range of Motion Exercises

Date: September 14, 2008

Definitions of Range of Motion Exercises:

A. Passive:

Movement within the unrestricted ROM for a segment which is produced entirely by an external force; there is no voluntary muscle contraction.

B. Active:

Movement within the unrestricted ROM for a segment which is produced by an active contraction of the muscle crossing that joint.

C. Active Assistive:

A type of active ROM in which assistance is provided by an outside force, either manually or mechanically, because the prime mover muscles need assistance to complete the motion.

Indications and Goals for Range of Motion:

A. Passive Range of Motion

- When a patient is not able to or not supposed to actively move a segment or segments of the body, as when comatose, paralyzed, or on complete bed rest, or when there is an inflammatory reaction and active ROM is painful, passive ROM is used:
 - to maintain existing joint and soft tissue mobility
 - to minimize the effects of the formation of contractures
 - to maintain the mechanical elasticity of muscle
 - to assist circulation
 - to help maintain the clients awareness of movement
- When a Therapist is evaluating inert structures, Passive ROM is used:
 - to determine limitations of motion
 - to determine joint stability
 - to determine muscle and other soft tissue elasticity
 - to accomplish the same goals of passive ROM with the added benefits that result from muscle contraction

- to maintain physiologic elasticity and contractability of the participating muscles
 - to provide sensory feedback from the contracting muscles
 - to provide stimulus for bone integrity
 - to increase circulation and prevent thrombus formation
- When a patient has weak muscles (poor to fair minus muscle test grade), active assistive ROM is used to provide enough assistance to the muscles in a carefully controlled manner so that the muscle can function at its maximum level and progressively be strengthened.
 - When a patient is placed on an aerobic conditioning program, active assistive or active ROM can be used to improve cardiovascular and respiratory responses if it is done with multiple repetitions and the results are monitored.

Contraindications to Range of Motion:

- Both passive and active ROM are contraindicated under any circumstances where motion to a part would be disruptive to the healing process such as:
 - Immediately following a tear to ligaments, tendons, or muscle
 - In the region of an unhealed fracture (unless requested by the Orthopedic Physician)
 - Immediately following surgical procedures to tendons, ligaments, muscle, joint capsule or skin

Procedures for Applying Range of Motion Techniques:

- Based on an evaluation of the patient's level of function, determine patient's goals and whether passive, active assistive, or active ROM will meet the goals.
- Place the patient in a comfortable position that will allow you to move the segment through the available ROM. Be sure he/she is in proper body alignment.
- Free the segment from restrictive clothing, linen, splints, and dressings. Drape the client as necessary.
- Position yourself so that proper body mechanics can be used.
- To control movement, grasp the extremity around the joint. If the joint is painful, modify the grip, still providing the support necessary for control.
- Support areas of poor structural integrity such as a hypermobile joint or a recent fracture site or where there is paralysis.
- Move the segment through its complete pain free range. Do not force beyond the available range. If you force motion it becomes a stretching technique.
- Do the motions smoothly and rhythmically, five to ten repetitions. The number of repetitions depends on the objectives of the program and the patient's condition and response to treatment.
- Modify or progress the treatment as necessary.

ROM Exercises General Guidelines

- Make sure the resident is comfortably supported before you begin. It's equally important that you are comfortably positioned!
- Keep the resident warm. Only uncover one body part at a time. Muscles become stiff when cold and relax when warm.
- Watch the resident's face for gestures that indicate comfort or distress. If you see signs of distress such as wincing, frowning, or scowling; STOP, try a lighter touch, or get help from your rehab team or charge nurse.
- If the Joint seems hot, red or swollen, do not exercise it. Support with pillows or a rolled blanket and seek advice of your rehab team or charge nurse.
- Only move the joint within its available range. Don't try to push past a restriction unless you have gotten specific instructions from the PT or OT.
- Make sure to ask questions and practice on a "normal" joint (yours or the therapist's) until you feel secure about an exercise. Ask the therapist to watch you do a certain exercise and let you know how you're doing. You may be surprised at how sensitive your touch becomes.
- Sometimes it's hard to know when a resident is really restricted or when they are deliberately holding themselves rigid. Deliberately holding a joint rigid is called guarding. It is usually a protective effort to prevent pain or discomfort. It may take some time of gentle stroking, quiet visiting and building trust before the resident can relax completely. You can also look for some clues: what happens to the body part when the resident is asleep or distracted by a visitor? If the arm is rigid when you touch it, can the resident use this same arm to scratch her nose or touch other parts of her body automatically?
- It's important to only do 5 repetitions of each exercise at a time. Over-exercise by repeating motions too many times can also cause damage. Caution residents who perform self-exercises that they should not over do and damage fragile joints. Please notify the PT or OT if you observe this happening.
- Finally take the time to share your skills with new or substitute caregivers, so they can continue your procedures in your absence.