Enhancing Mobility for the Older Adult

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PREVENT THE EFFECTS OF IMMOBILITY

Governance & Leadership

• Administrator, DON and Management must fully support the program and be actively involved
• **Assess your current Programs to Identify a Starting point**
  • What is the mind set of the staff?
  • How many of your Residents depend on wheelchairs for mobility?
  • What is the relationship between Nursing, Therapy and Activities?
  • Do you currently have a Restorative Nursing Program and what does that provide?
  • What types of activities do you have during the day and in the evenings?
  • Do you have a sleep hygiene program?

• **Get ALL staff on board**
  • Initial Training on WHY???

Aim Toward Independence
“How to”
Rather than
“Doing for”
You are the coach!!
• **Assemble Your Team:**
  • Therapy
  • Restorative Nursing – Lead Nurses and Lead Nursing Assistants
  • Nursing assistants – All shifts
  • Floor nurses - all shifts
  • Nurse Managers/Supervisors
  • Physicians/Nurse Practitioners
  • Activities
  • Dietary
  • Maintenance
  • Housekeeping

What will be your facility’s benchmarking Data?
• **Quality Measures**
  • **Long Stay:**
    • Percent of Residents Experiencing One or More Falls with Major Injury
    • Falls
    • Activities of Daily Living Has Increased

Individual Resident Benchmarks/Goal Setting
• **Needed for Starting Point & to Measure Progress**
  • Short Physical Performance Battery (SPPB)
  • Anthropometric Measurements
  • Muscle Quality Index
  • Hand Grip Strength
  • Steps per Day
  • Resting Heart Rate
  • Resting Blood Pressure
  • Waist to Hip Ratio
**Environment**

- Floor surfaces: shiny, slippery, or do the surfaces change in areas (going from carpet to tile)
- Grab bars and hand rails in good condition, clearly identified and throughout the entire building
- Lighting bright no glare
- Clear walkways
- Contrasting colors

**Environment**

- Devices to promote self repositioning or mobility in resident rooms
- Low beds ONLY for residents who cannot physical egress at all and roll out of bed
- Proper width of the bed — wider widths (42 inches) shown to decrease falls
- Careful use of floor mats
• **Environment**
  
  • Devices to promote self repositioning or mobility in resident rooms – for residents that can egress from bed
  
  • Proper egress height of the bed & mattress – feet flat on the floor with the knees slightly above a 90 degree angle
  
  • Mark the head board with tape for proper position of bed
  
  • Grab bars or transfer poles to stabilize

• **Environment**
  
  • Devices to promote self repositioning or mobility in resident rooms
  
  • Properly fitted and accessible
    
    • Wheelchairs
    
    • Walkers
    
    • Canes

• **Environment**
  
  • Devices to promote self repositioning or mobility in resident rooms
  
  • Clear path into the bathroom
  
  • Lighting at night – amber tones
  
  • Bathroom environment
    
    • Contrasting colors
    
    • Proper toilet seat height
    
    • Grab bars
• **Environment**
  • Stand Assist Devices to promote early mobility and exercise in a standing position dedicated to Therapy & Restorative Nursing

• **Sufficient Resources**
  • Accessible Exercise Equipment
  • Enough for groups of 4

• **Sufficient Resources**
  • **Recommended Exercise Equipment**
    • Resistance bands with handles
    • Resistance band loops
    • Light weights with straps
    • Ankle weights
    • Foam roller
• Sufficient Resources
  • Recommended Exercise Equipment
    • Towels
    • Glide discs
    • Handheld weights
    • Rope Ladder
    • Step platform

• Sufficient Resources
  • Recommended Exercise Equipment
    • Sturdy chair
    • Sturdy chair with narrow arms
    • Ball
    • Medicine Ball
    • Balance Bar
    • Equipment cart
    • Disinfectant

• Sufficient Resources
  • Protective/appropriate footwear and socks
Sufficient Resources
• Supplies to protect the skin while exercising/movement
  • Lotions
  • Protective garments/long sleeves and pants

• Sufficient Resources
  • Hip protectors
  • Helmets

• Train the Team on Reimbursement, MDS Coding, Documentation and Care Planning
• **Coordination of the Program:**
  - Physician must approve and order the exercise program
  - Therapy to do the initial assessment and setting up of the individual resident’s program for Nursing/Designee
  - Therapy to competency test Nursing/Designee implementing the individual resident’s program
  - Dietary to ensure proper calories and protein intake for level of exercises
  - Nursing to refer back to Therapy when a resident needs adjustment of the program (i.e. decline, plateau, need for more aggressive exercises, pain or change in ability to perform exercises)

• **Strength Training Exercise program:**
  - Studies have shown that muscle mass can be increased at essentially any age through systemic strength training even if they have never done strength training before

• **Exercise program:**
  - Utilize full body strength (resistance) exercises to promote:
    - Strength
    - Range of Motion / Flexibility
    - Cardiac output
    - Blood flow
    - Positional awareness
    - Balance
    - Decrease arthritic pain
    - Enhanced glucose metabolism
    - Increase bone mineral density
    - Lower resting heart rate and blood pressure
    - Relieve depression
    - Improve gastrointestinal transit speed
• Physician Clearance prior to starting

• Competency testing of staff performing exercises for individual Resident plan

• Exercise program:
  • Are specifically designed for older adults that can be done individually or in groups of 4 in 15 or 30 minute increments
  • Can be done in different positions depending on balance issues
    • Supine Position
    • Sitting Position
    • Standing in an assistive device
    • Standing
• Develop Exercises that call for exercise for each of the major muscle groups
  • Quadriceps
  • Hamstrings
  • Pectoralis Major
  • Latissimus Dorsi
  • Deltoids
  • Biceps
  • Triceps
  • Erector Spinae
  • Rectus Abdominus
  • Neck
  • Flexors/Extensors

• Frequency of Strength Training
  • Strength exercises may be productively performed two to three days per week
  • MDS reimbursement requirements – 2 separate, 15-minute sessions/day for 6-7 days per week
  • Allow 48 hours of rest for each muscle/muscle group worked – train upper body muscles and the lower body muscles on alternative days

• Strength Training
  • Proper warm-up and cool down are needed for strength training exercises
    • Simple walking or marching while sitting for standing balance issues
    • Large body movements (arm crosses) for wheelchair bound
    • When warming up no static stretching
Training Resistance

For healthy and fit seniors the following is recommended:
- Training within 70-80% of maximum resistance represents a safe and effective weight load
- Limiting progression to 2.5lbs increases at a time are prudent for healthy seniors

For deconditioned seniors the following is recommended:
- Learn the movement patterns of the exercises to be undertaken without using added resistance at first
- In low fit individuals begin strength training exercises the use only body weight and gravity for resistance, then gradually progress to using low resistance accessories, such as resistance bands, light hand or leg weights
- In extremely deconditioned or frail individuals, simply performing an exercise for 3-5 repetitions at first
- Progression of .5-1lbs increases for deconditioned seniors

Repetitions

Each repetition should be done through the client’s full range of motion
- Start with 3-5 Repetitions of a given exercise
- Progress slowly until 12-15 repetitions can be performed on a regular basis with correct execution and good tolerance
- At that time weight load can increase, but the number of repetitions should decrease to 6-8 and then gradually increase to 12-15
• Repetitions
  • Performed slowly – 2 second to lift and 4 seconds to lower the weight
  • DO NOT HOLD BREATH
  • Inhale before starting a strengthening exercise and exhale upon exertion

• Stop Exercise if any of the following warning signals
  • Light headedness, dizziness
  • Breathlessness, shortness of breath
  • Higher than normal levels of joint, muscle, or skeletal pain or discomfort
  • General weakness, extreme fatigue
  • Anginal pain which may occur in the chest, neck, jaw, back or limbs
  • Excessive sweating, cold sweats, clamminess
  • Heart palpitations, irregular pulse
  • The resident stops for any reason

• Exercises for specific conditions/concerns
  • Poor sitting or standing function
    • Sit to stand exercises
    • Sit in a stable chair both feet on the floor with both arms extended in front of the body as if reaching forward
    • If the resident cannot stand without using their arms, have them try placing the palms of their hands on their thighs and pressing against the lags to assist in standing
    • The resident should rise to a full standing position and then sit down again
    • Start with 2-4 repetitions and gradually build to 8-12
• **Exercises for specific conditions/concerns**
  • **Poor ambulation or stair climbing**
    • Conditioning large muscle of the low body to improve ambulation and stair climbing by practicing stepping on a staircase or portable step, ensure handrail for support
    • If wheelchair bound or balance issues non-weight bearing stepping can be performed in a chair or wheelchair and ask to perform stepping movements in a seated position

• **Exercises for specific conditions/concerns**
  • **Poor posture and body alignment**
    • Upper and mid back strengthening exercises
    • Simple chin and neck retraction exercise is good
    • Progress to placing palms of the hands on the back of the head and then gently pressing backward with the head as the hands press forward

• **Exercises for specific conditions/concerns**
  • **Parkinson Disease**
    • Mobility – the ability to efficiently navigate and function in a variety of environments, requires balance, agility and flexibility all of which are affected by Parkinson Disease.
    • Rigidity, bradykinesia, freezing, poor sensory integration, inflexible program selection and impaired cognitive processing limit mobility in people with Parkinson Disease.
• Exercises for specific conditions/concerns
  • Parkinson Disease – Agility
    • Intense exercise program can improve brain function in residents with neurological disorders
    • Aerobic exercise such as treadmill training and walking programs improve gait parameters and quality of life
    • Incorporating tasks such as dual tasking, balance training and set-switching into a treadmill program could be even more effective in addressing complex mobility issues
      • Lifting knees up high while walking
      • Counting while walking
      • Incline change
      • Change in course

• Exercises for specific conditions/concerns
  • Parkinson Disease – Rigidity
    • Kayaking – counter rotates the shoulder and pelvic girdle
    • Tai chi – individual awareness of postural alignment during postural transitions
    • Pre-Pilates – increasing spinal mobility and lengthening flexor muscle groups
    • Strategies for turning and transitioning from a standing position to sitting on the floor and back again – emphasize trunk and head rotation

• Exercises for specific conditions/concerns
  • Parkinson Disease – Bradykinesia
    • Slowness of voluntary movement as well as slow and weak postural responses.
    • Characterized by
      • Narrow stance
      • Delayed time to lift the swing limb
      • A weak push-off
      • Reduced leg lift
      • Small stride length
      • Lack of arm swing
      • Reduced voluntary and reactive limits of stability, especially in the backward direction
**Exercises for specific conditions/concerns**

- **Parkinson Disease – Bradykinesia**
  - **Exercises to promote**
    - Weight-shift control and postural adjustments
    - Taking large, protective steps while tilting past their limits of stability
      - Lunges
      - Kicks
      - Quick boxing movements
      - Walking sticks may help attend to the large, symmetrical arm swing
    - Think big while increasing the speed and amplitude of large arm and leg movements throughout agility courses and during multidirectional lunges and boxing

- **Exercises for specific conditions/concerns**
  - **Parkinson Disease – Freezing**
    - Movement hesitation in which a delay or complete inability to initiate a step occurs
    - Freezing not only slows walking, but it also is a major contributor to falls in people with Parkinson’s Disease
    - Agility Exercises: Obstacle courses
      - Turning quickly
      - Negotiating narrow and tight spaces such as corners
      - Ducking under and stepping over obstacles
      - Picking up objects while walking
      - Quickly changing directions and foot placement
    - Once a resident can successfully perform the obstacle course, dual cognitive tasks while maintaining form and speed should be added

- **Exercises for specific conditions/concerns**
  - **Parkinson Disease – Abnormal Sensory perception – sense of body position**
    - Agility program with balancing and walking tasks
    - Wearing dark sunglasses to reduce visual contrast
    - Glasses that obscure the bottom half of the visual field
    - Performing on a variety of surfaces
    - Continue to make more complex by increasing speed, resistance, endurance and adding dual tasking
**Exercises for specific conditions/concerns**

- **Alzheimer’s Disease**
  - Amyloid plaques in the brain
  - Interventions to decrease amyloid plaques
    - Adequate sleep
    - Exercise

Guest Column in McKnights:
http://www.mcknights.com/guest-columns/lifestyle-and-the-aging-brain/article/417260/?DCMP=EMC-MCK_Daily&spMailingID=11530562&spUserID=ODE2NDEwNDES1&spJobID=560074336&spReportId=NTYwMDc0MzM2

- **Cognitive Impairment**
  - Inability to simultaneously carry out a cognitive task and a balance or walking task has been found to be a predictor of falls in elderly people.
  - Agility program could progress task difficulty by adding cognitive or motor tasks that teach residents to maintain postural stability during performance of secondary tasks
    - Exercise Level 1: Have no dual tasks
    - Exercise level 2: has a motor task (bouncing a ball) added to the basic exercise such as an agility course
    - Exercise level 3: has a cognitive task (performing math or memory problems) added to the same basic exercise
  - The progression of adding secondary tasks to gait and balance tasks serves as a training device as well as a tool to help residents understand the relationship between safe mobility and secondary tasks in everyday life

- **Cognitive Task and Balance Task Example - One Foot and One Toe Behind**
  - Stand behind your chair and hold on to it
  - Place your right foot flat on the ground and bring your left foot behind your right but as you set it down only allow the toe to touch the ground
  - Most of your weight should be on your right foot
  - Balance there for 30 seconds and try to use your chair as little as possible
  - To make it harder, you can move your head up and down
  - Look up at the ceiling and then slowly move you head down and look at the floor and repeat for 30 seconds (do not strain to far back just enough to see the ceiling or too far forward just enough to see the floor)

King, Laurie A, Horak, Fay B., American Physical Therapy Association
• Exercises for specific conditions/concerns
  • Cognitive Task and Walking Task Example
    • Basic — Walk forward taking normal-length steps, but bring your knees up higher than usual with every step. The higher you raise your knees that is comfortable for you, the harder it will be.
    • Intermediate — Walk forward again, but this time, only raise your left knee as you walk. Your right leg should just take a normal-looking step forward without exaggerated knee lift. Try again with the opposite leg.
    • Advanced — This time you will walk forward and take a high knee with every third step — Quite tricky!!

• Exercises for specific conditions/concerns
  • More Advanced Cognitive Impairments
    • Can participate if
      • They can follow simple commands and/or
      • They can mimic movements

Exercises for Specific Conditions

Lower Extremity Arterial Insufficiency
• Walking 30-60 minutes 3x/week of sufficient intensity to bring on claudication and then followed by rest
Exercises for Specific Conditions

Venous Insufficiency

- Elevate legs above the heart for 30 minutes, 3-4x/day
- Perform ankle flexion 5-10 times every few minutes and for 1-2 minutes every 30 minutes
- Perform brisk walking
- Perform planter flexion, tip-toe exercises, and walk on incline treadmill
- Sit and rock in a rocker chair, using feet to push down to plantar flex the ankles

Peripheral Neuropathy

- Exercise must be conducted with caution due to the insensate lower extremity
- Institute non-weight bearing exercises such as swimming, water aerobics, bicycling, rowing and upper body exercises
- Wear well fitting shoes and socks
- Recommend daily range of motion to avoid loss of muscle strength and flexibility

Proper Cool Down - Stretching

- Tips:
  - Hold stretches for 30 seconds or more
  - Go to the point you feel the muscles stretching
  - Do not go past that point where it starts to hurt
  - Always ease into a stretch gently
• Proper cool down - stretching
  • Chest Stretch
    • Bring your arms back behind your body and grab one hand with your other hand
    • Keeping hands together, raise your hands up and away from your body (the resident might not be able to go very far)
    • Pull the shoulder back and stick your chest out
    • You should feel this across your chest and on the front of your shoulders

• Proper cool down - stretching
  • Arms Up
    • Bring arms in front of your body and grab one hand with the other
    • Raise your arms up as high as you can go, keeping the hands together
    • Imagine your ribcage is pulling up and away from your hips and you are getting taller
    • You should feel the stretch in your stomach and below your shoulders

• Proper cool down - stretching
  • Hamstrings
    • Sit down in a chair with both knees bent 90 degrees
    • Then bring your right foot forward and straighten the knee out until it is almost straight but still slightly bent
    • Keep both feet on the ground
    • Rest both hands on the other knee
    • Keeping a straight back, lean forward slowly at the hips until you feel a stretch on the back of your leg
    • After 30 seconds, sit back up straight, switch the feet, and come forward again to stretch the other leg
• **Proper cool down - stretching**
  
  • Neck Over and Up
  - Tilt your head sideways bringing your ear towards your shoulder as far as possible
  - Then tilt your head slightly up looking at the ceiling
  - Keep teeth together and hold there
  - After 30 seconds come back down, tilt over to the other side
  - You should feel this on one side of your neck

• **Involving the team:**
  
  • Can be done during activities
    - Treasure hunts
    - Obstacle courses
    - Video exercise games
    - Throwing a ball
    - Tai Chi
    - Yoga
    - Dancing
    - Walking Courses
    • Do activities while standing (i.e., cooking or arts and crafts)
  
  • Offer programs during the day and evening

• **Input on the program from residents and family members**
Bibliography


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References


Thanks for your participation!!!

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