

# Preventing a Decline in ADLs: Mobility Enhancement and Restorative Nursing Programs

*Presented By:*  
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Senior Providers Resource, LLC

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## Keeping Residents Mobile



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## Clinical Foundation



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• **Humans are Meant to be Upright & Mobile**



**Optimal Body Function – Upright for 16 hours/day**



*Winds of Change*

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Knight J, et al. Nurse Times. 2009; 105(21): 10-11

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• **Immobility, potential root cause of the following:**

- Skin Breakdown
- Falls
- Incontinence & UTIs
- Development of diseases
- Weight loss
- Depression
- Delirium/confusion
- Respiratory Infections
- Constipation
- Staff injuries
- Financial Impact



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• **The Causes of Immobility**

- Fractures
- Stroke
- Obesity
- Paraplegia & quadriplegia
- Multiple sclerosis
- Depression
- Cognitive impairment – Alzheimer's/dementia
- Parkinson



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• **The Causes of Immobility**

- Cardiac disease
- Vertigo
- Weakness
- Medications
- Respiratory disease
- Amputation



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• **The Causes of Immobility**

- Visual Impairments
- Gait deficit
- Balance deficit
- Arthritis
- Peripheral neuropathy
- Arterial and/or venous insufficiency of lower extremities
- History of falls and/or fear of falling



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• **The Causes of Immobility**

- Moving too slow or taking too long
  - Be Patient!!!!



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- **The Effects of Immobility**
  - Loss of Independence & Psychosocial effects



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- **The Effects of Immobility – Muscles**
  - There is a 12% rate of loss of muscle strength and muscle atrophy (wasting away) in one week
  - In as little as 3-5 weeks of immobility, almost half the normal strength of a muscle is lost



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Nigam Y, et al. Nurse Times. 2009; 105:18-2211

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- **The Effects of Immobility – Muscles**
  - First muscles to become weak are in the lower limbs
  - Keeping a muscle in a contracted position will significantly increase atrophy
  - In stroke paralysis or immobility due to splinting, muscles atrophy around 30-40%



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- **The Effects of Immobility – Muscles**
  - It takes 4 weeks to recover from atrophy with exercise
  - Totally degenerated muscles are permanently replaced by fat and connective tissue
  - Disuse of the muscle will also effect the neuromuscular function – essentially the body forgets how to properly coordinate motor function



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Nigam Y, et al. Nurse Times. 2009; 105:18-22

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- **The Effects of Immobility – Muscles**
  - Complete rest will decrease endurance levels
  - Causing fatigue, affecting motivation
  - Then leading to a cycle of greater inactivity



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- **The Effects of Immobility – Connective Tissue**
  - Connective tissue consists of:
    - Tendons
    - Ligaments
    - Articular cartilage (covers joints)
  - In 4-6 days after immobility changes in the structure and function of connective tissue become apparent
  - These changes remain even after normal activity has been resumed!!



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Nigam Y, et al. Nurse Times. 2009; 105:18-22

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- **The Effects of Immobility – Contractures**
  - Contracture:
    - A decrease from the normal range in parts of the body responsible for motion (joints, ligaments, tendons and related muscles)
  - In 2-3 weeks of immobilization a firm contracture can develop
  - After 2-3 months of immobility, surgical correction may be needed.



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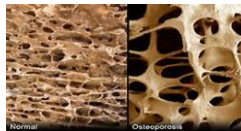
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- **The Effects of Immobility – Bone**
  - Disuse osteoporosis
  - Bones most susceptible:
    - Vertebra
    - Long bones of the legs
    - Heels
    - Wrists



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- **The Effects of Immobility – Bone**
  - Within 3 weeks of immobilization calcium clearance is 4-6 times higher than normal and hypocalcaemia can occur. This can lead to:
    - Formation of calcium-containing kidney stones
    - Anorexia
    - Nausea
    - vomiting



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• **The Effects of Immobility – Skin**

- Normally we continually shift our weight, even during sleep
- Immobility or decreased sensation prevents shifting in weight leading to prolonged pressure on skin capillaries, ultimately resulting in death of skin tissue
- Formation of pressure ulcers



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• **The Effects of Immobility – Skin**

- The ONLY area of the body designed to bear weight are the soles of the feet
- Immobility leads to large surface areas of the skin bearing weight
- Areas where skin is stretched tautly over bony prominences are at the highest risk for breakdown



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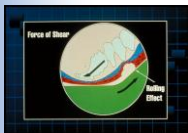
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• **The Effects of Immobility – Skin**

- Repositioning a totally dependent resident can cause additional forces of shear and friction
- Skin laying next to the bed sheets can cause moisture and lead to moisture related skin conditions



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• **The Effects of Immobility – Psychological effects**

- Depression
- Anxiety
- Forgetfulness
- Confusion
- Increased levels of stress



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Knight, J. et al. Nurse Times 2009, 105(21):16-21

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• **The Effects of Immobility – Cardiac System**

- When an individual is confined to bed, there is a shift of fluids away from the legs towards the abdomen, thorax and head.
- In as little as 24 hours, a shift of 1 liter of fluid from the legs to the chest
- Increases venous return to the heart and elevated intracardial pressure



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• **The Effects of Immobility – Cardiac System**

- Increases in blood volume and venous return stretch the right atrium in the heart
  - Stimulates the release of atrial natriuretic peptide (ANP) a powerful diuretic
    - Increase in urine output
    - Decreases in blood volume
- Leads to dehydration



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• **The Effects of Immobility – Cardiac System**

- Immobility leads to atrophy and loss of muscle mass in the legs
- This impairs the muscle pump action which reduces venous return
- Lower extremity edema
  - Ulceration
  - Venous dermatitis
  - Cellulitis



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• **The Effects of Immobility – Cardiac System**

- The heart is a muscle and too needs activity to stay healthy
- Immobility can lead to atrophy of the heart muscle



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• **The Effects of Immobility – Cardiac System**

- Postural hypotension (drop in blood pressure upon standing) can be noted in little as 20 hours of immobility
- This can lead to dizziness, anxiety and falls
- Postural hypotension, even in fit, healthy adults can take several weeks to fully recover once they start moving



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**• The Effects of Immobility – Respiratory System**

- Development of fixed contractures of the costovertebral joints, leading to inability to expand the lungs
- Risk of lung collapsing



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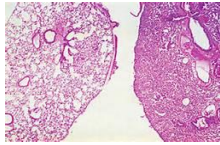
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**• The Effects of Immobility – Respiratory System**

- Decrease in the diameter of the airways
  - Atelectasis (collapse of the small areas of lung tissue)
  - Reduction of surface area for gaseous exchange – decrease in oxygenation



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**• The Effects of Immobility – Respiratory System**

- Pooling of mucus in the lower airways
- Increased risk of respiratory infections
  - Stroke patients confined to bed for 13 days or more are 2-3 times more likely to develop a respiratory infection than mobile people



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- **The Effects of Immobility – Hematological**
  - Decrease in oxygen saturation
  - Increase in carbon dioxide concentrations
  - Leads to Hypoxia
    - Acute confusion
    - Can develop quickly over a number of hours
    - Symptoms can fluctuate during the day and worsen at night



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Knight, J. et al. Nurse Times 2009; 100(11):16-21

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- **The Effects of Immobility – Hematological**
  - 13% of patients in bed for long periods may develop deep vein thrombosis (DVT)
  - Increases risk for emboli
    - In the lungs - pulmonary embolism
    - Cerebral circulation within the brain – Stroke
    - Coronary circulation of the heart – myocardial infarction



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- **The Effects of Immobility – Gastrointestinal**
  - Reduced sense of taste, smell and loss of appetite
  - Difficulty swallowing
  - Constipation
  - Fecal impaction



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Knight J, et al. Nurse Times. 2009;(22):24-27

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• **The Effects of Immobility – Endocrine System**

- Decrease in metabolic rate
  - In as little as 10 hours
- Insulin resistance, impaired glucose tolerance and the subsequent development of type 2 diabetes



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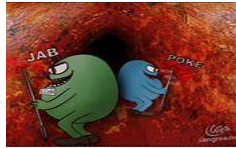
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• **The Effects of Immobility – Renal System**

- Kidney stones
- Urinary retention (overflow)
- Urinary tract infection
- Urosepsis



The dreadful truth behind urinary tract infections



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• **The Effects of Immobility – Nervous System**

- Sensory deprivation
- Depression
- Disorientation
- Confusion
- Restlessness
- Agitation/aggression
- Anxiety
- Reduced pain threshold
- Difficulty problem solving
- Loss of motivation



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**The Effects of Immobility – Nervous System**

- Insomnia
- For normal function we need:
  - 16 hours of activity
  - 8-9 hours of sleep
- Consistently sleeping for more then 9 hours or fewer than eight hours has a negative impact on physiological, psychological and cognitive functions



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**PREVENT THE EFFECTS OF IMMOBILITY**



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**Governance & Leadership**

- Administrator, DON and Management must fully support the program and be actively involved



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• **Assemble Your Team:**

- Therapy
- Restorative Nursing
- Nursing assistants – all shifts
- Floor nurses all shifts
- Nurse Managers/Supervisors
- Physicians/Nurse Practitioners
- Activities
- Dietary
- Maintenance
- Housekeeping




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• **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 and Therapy?
- 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?




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**Aim Toward Independence**

**“How to”  
Rather than  
“Doing for”  
You are the coach!!**




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**What will be your benchmarking Data?**

• **Quality Measures**

- **Short Stay:**
  - Percent of Residents with Pressure Ulcers That are New or Worsened
- **Long Stay:**
  - Percent of Residents Experiencing One or More Falls with Major Injury
  - Percent of High-Risk Residents with Pressure Ulcers
  - Percent of Residents with a Urinary Tract Infection
  - Percent of Low Risk Residents Who Lose Control of Their Bowels or Bladder
  - Percent of Residents Who Have/Had a Catheter Inserted and Left in Their Bladder




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**What will be your benchmarking Data?**

• **Quality Measures**

- **Long Stay:**
  - Percent of Residents Who Were Physically Restrained
  - Percent of Residents Whose Need for Help with Activities of Daily Living Has Increased
  - Percent of Residents Who Lose Too Much Weight
  - Percent of Residents Who Have Depressive Symptoms
  - Percent of long-stay residents who received an antipsychotic medication
  - Falls
  - Anti-anxiety/Hypnotic Medication Use
  - Behavior Symptoms Affecting Others




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• **Train the Team on Reimbursement and MDS Coding**




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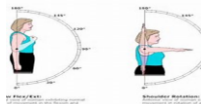
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- **Restorative & Mobility Programs**
  - Restorative Nursing Program-MDS Requirements
    - Technique, training or skill practice was performed for a total of at least 15 minutes per 24 hours
    - The 15 minutes can be broken up (i.e. remove & clean splint and skin, inspect skin and perform ROM for a total of 5 minutes 3x/day)
    - Need 2 or more restorative programs, 6-7 days/week
    - Restorative nursing does not include groups with more than four residents per supervising helper or caregiver.



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- **Restorative & Mobility Programs**
  - Restorative Nursing Program-MDS Requirements
    - H0200C, H0500 \*\*Urinary toileting program and/or bowel toileting program
    - O0500A,B      \*\*Passive and/or active ROM
    - O0500C      Splint or brace assistance
    - O0500D,F \*\*Bed mobility and/or walking training
    - O0500E      Transfer training
    - O0500G      Dressing and/or grooming training
    - O0500H      Eating and/or swallowing training
    - O0500I      Amputation/prostheses care
    - O0500J      Communication training
  - **\*\*Count as one service even if both provided**



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- **Restorative & Mobility Programs**
  - Restorative Nursing Program-MDS Requirements
 

**O0500B, Range of Motion (Active)** Code exercises performed by the resident, with cueing, supervision, or physical assist by staff that are individualized to the resident's needs, planned, monitored, evaluated, and documented in the resident's medical record. Include active ROM and active-assisted ROM.



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• Restorative & Mobility Programs

- Restorative Nursing Program-MDS Requirements – Example of 2 programs

- Active ROM exercises  
AND
- Walking




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• Restorative & Mobility Programs

- Restorative Nursing Program-MDS Requirements

- The care plan & medical record must document measurable objective and interventions
- The medical record must reflect periodic evaluation by a licensed nurse.
- Nursing assistants/aides must be trained in the techniques that promote resident involvement in the activity
- A registered nurse or licensed practical (vocational) nurse must supervise the activities in a restorative nursing program.




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• Restorative & Mobility Programs

- Restorative Nursing Program

- Skilled Care-Medicare A
  - Rehabilitation nursing: 2 activities, 15 minutes each per day for 6-7 days per week.
  - Must be in conjunction with therapy, 45 minutes, 3 days per week
  - Physician order for cert/recert




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**• Restorative & Mobility Programs**

- Restorative Nursing Program
  - Restorative Nursing Programs
    - Therapy set up functional maintenance and do periodic updates (part B)
    - Restorative Nursing provides the activities
    - Physician order for Therapy only




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**• Restorative & Mobility Programs**

- Restorative Nursing Program
  - Restorative Nursing Programs – maintenance
    - Restorative Nursing provides the activities
    - No Physician order needed




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**Individual Resident Benchmarks**

- **Needed for Starting Point & to Measure Progress**
  - **Short Physical Performance Battery (SPPB)**
    - Chair rise test
    - Balance test
    - Usual gait speed
  - **Anthropometrics**
    - Body weight
    - Body height
    - BMI
    - Leg length
    - Arm circumference
  - **Hand grip strength**
  - **Muscle Quality Index (MQI)**
  - **Objective Physical Activity (Pedometer)**




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### Individual Resident Benchmarks

- **Short Physical Performance Battery** (range = 0 to 12)
  - 0-5: At high risk for adverse outcomes
  - 6-8: Approaching higher risk for adverse outcomes
  - 9-11: Acceptable
  - 12: Desirable
- **The Balance Test can also assist in starting points for capabilities for**
  - Standing exercises
  - Standing exercise with stand assistive devices
  - Sitting exercises
  - Supine exercises



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### Individual Resident Benchmarks

- **Gait Speed**
  - Below 1 m/s: At risk of poor health and function
  - Below 0.6 m/s: Highest risk of poor health and function
  - Below 0.8 m/s: Higher risk of poor health and function
  - Over 1 m/s: Desirable



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### Individual Resident Benchmarks

- **Hand grip strength**
  - **Men**
    - Below 26 kg: Weak
    - 26 to 32 kg: Intermediate weakness
    - Over 32 kg: Desirable
  - **Women**
    - Below 16 kg: Weak
    - 16 - 20 kg: Intermediate weakness
    - Over 20 kg: Desirable



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**Individual Resident Benchmarks**

**• Body Mass Index**

- Below 18.5: Underweight
- 18.5 - 24.9: Healthy
- 25.0 - 29.9: Overweight
- 30.0 - 39.9: Obese
- Over 40: Extreme or high risk obesity




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**Individual Resident Benchmarks**

**• Muscle Quality Index**

- Classifications of Muscle Quality Index (MQI) have not yet been determined through research.
- However, this assessment has been shown to be best able to detect sensitive changes in a person's functional status.
- This assessment should be used to track changes based on the resident's baseline test.
- It is desirable to see MQI increase. Increases in MQI are indicative of improvements in muscle's ability to function and generate power.




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**Individual Resident Benchmarks**

**• Physical Activity (Steps per day)**

- Healthy community dwelling older adults average 2,000-9,000 steps/day, which is somewhat lower than the public health recommendations of achieving 10,000 steps per day.
- Older adults residing in assisted living facilities tend to walk fewer steps per day in the range of 3,000 to 4,000 steps per day depending on health and functional status.




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**Individual Resident Benchmarks**

**• Physical Activity (Steps per day)**

- While the physical activity assessment is designed to be a gauge for the resident's physical activity status in the form of ambulation, targets of the following have been associated with higher health related quality of life outcomes:

- Men: 5,500 steps/day
- Women: 4,500 steps/day



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**Individual Resident Benchmarks**

**• Physical Activity (Steps per day)**

- Residents who are able should be encouraged to achieve 4,500 to 5,500 steps per day by incrementally adding physical activity to his/her mobility enhancement plan.
- A 10-minute walk is approximately comparable to 1,000 steps, depending on walking speed and stepping cadence. Adding 100 to 1,000 steps per day or week may enable residents to achieve recommendations.
- Those residents who are capable may work up to the 10,000 steps per day recommendations.



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**Environment**



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• **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 and throughout the entire building
- Lighting
- Clear walkways
- Contrasting colors








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• **Environment**

- Devices to promote self repositioning or mobility in resident rooms
  - Grab bars or trapeze
  - Electric beds
  - Proper egress height of the bed & mattress
  - Transfer poles
  - Walkers
  - Canes








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• **Environment**

- Devices to promote self repositioning or mobility in resident rooms
  - Clear path into the bathroom
  - Lighting
  - Bathroom environment








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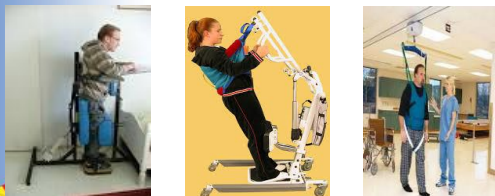
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• **Environment**

- Stand Assist Devices to promote early mobility and exercise in a standing position dedicated to Therapy & Restorative Nursing




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• **Sufficient Resources**

- Accessible Exercise Equipment
- Enough for groups of 4




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• **Sufficient Resources**

• **Recommended Exercise Equipment**

- Resistance bands with handles
- Resistance band loops
- Light weights with straps
- Ankle weights
- Foam roller




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• Sufficient Resources

• Recommended Exercise Equipment

- Towels
- Glide discs
- Handheld weights
- Rope Ladder
- Step platform




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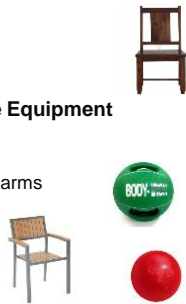
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• Sufficient Resources

• Recommended Exercise Equipment

- Sturdy chair
- Sturdy chair with narrow arms
- Ball
- Medicine Ball




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• Sufficient Resources

• Recommended Exercise Equipment

- Balance Bar
- Equipment cart
- Disinfectant




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• **Sufficient Resources**

- Wheelchairs utilized appropriately
- Appropriate wheelchairs to promote self propelling or exercise while in the chair



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• **Sufficient Resources**

- Restorative devices
  - Splints
  - Braces



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• **Sufficient Resources**

- Adaptive devices



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- **Sufficient Resources**
  - Adaptive Clothing



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- **Sufficient Resources**
  - Communication Tools and Supplies
    - Communication boards or writing board
    - Large Print and numbers
    - Appropriate eyewear and magnifying glasses
    - Hearing aid/auditory adaptive equipment
    - Calendars and orientation adaptive equipment



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- **Sufficient Resources**
  - Compression Therapy for Venous Insufficiency
    - Compression wraps
    - Compression stockings
    - Compression pumps



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- **Sufficient Resources**

- Rocking chairs to promote calf pump exercises to prevent edema



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- **Sufficient Resources**

- Protective/appropriate footwear



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- **Sufficient Resources**

- Supplies to protect the skin while exercising/movement
  - Lotions
  - Protective garments



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



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- **Train ALL staff on Basic Restorative Nursing:**
  - Components of Restorative Nursing
  - How to identify what residents would benefit from restorative programs
  - Basic competency testing of staff
  - Documentation and requirements



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- **Implement the Basic Restorative Nursing Program:**
  - Ensure residents are being properly assessed and identified for the program
  - Staff are promoting independence
  - Staff are properly performing the services
  - Staff are properly documenting services



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• **Develop Exercises that:**

- Are specifically designed for older adults that can be done individually or in groups of 4
- Promote:
  - Strength
  - Range of Motion / Flexibility
  - Cardiac output
  - Blood flow
  - Positional awareness
  - Balance



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• **Develop Exercises that can be performed while:**

- **Standing**
- **Standing in an assistive device**
- **Sitting Position**
- **Supine Position**



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• **Develop Exercises that:**

- **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)



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- **Train ALL staff on how to perform the exercises:**
  - Ensure competency of performing the exercises
  - Ensure proper understanding of documentation of exercises
  - Involve both day and evening shifts







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- **Train Restorative Nurses on the Individual Benchmarking Assessment:**
  - Ensure competency in performing the tests
  - Ensure competency in safely determining exercises or when to refer back to Therapy to determine the level of exercise.







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- **Monitor the program**
  - Daily rounds by Administrator, DON and Managers
  - Walking rounds for each shift
  - Chart audits







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- **Input on the program from residents and family members**




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- **Promoting of sleep hygiene**
  - Appropriate lighting (amber tones)
  - No Noise
  - Appropriate bed surface
  - Heel floating or heel lift devices
  - Appropriate incontinence products
  - Allowing at least 4 hours or more of sleep




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- **Overall End Goal**
  - Keep residents active during the day
  - Promote sleep at night




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### QUESTIONS????

**Thanks for your participation!!!**

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