Physical Therapy TOOLKIT

Balance

Impairments and Functional Limitations:
Muscle weakness (specifically quadriceps, ankle dorsiflexors, ankle plantar flexors)
Limited range of motion in the lower extremities
Slowed reaction time
Reduced processing of sensory information (proprioceptive/somatosensory, visual and vestibular)
Disequilibrium
Cognitive impairment

Assessments and Rating Scales:
Berg Balance Scale (Berg 1995)
Gait Speed Test (Guralnik et al., 1994)
Modified Clinical Test of Sensory Integration on Balance (Shumway-Cook 1986)
Multi-Directional Reach Test (Newton et al., 1997)
Sitting Balance Scale (Medley, Thompson et al., 2011)
Tinetti Balance and Gait Evaluation (Tinetti 1986)
Trunk Impairment Scale (Verheyden et al., 2004)

Physical Therapy Intervention:
Provide a multi-component balance training program.

- Ensure patient safety during training to prevent falls and injuries.
- Incorporate balance exercises into everyday activities.
- Incorporate balance exercises during regular strength training, stretching, and endurance routines.
- Perform balance training first (when combined with resistance and flexibility activities). Recommend 10-15 minutes, three days a week.

Provide progressive challenges to balance.

- Static balance control in sitting, half kneeling, tall kneeling, standing, tandem standing, single leg standing, lunging and squatting
- Dynamic balance control while on a moving surface (therapy ball, wobble board, mini trampoline)
- Challenge postural reactions
    - Ankle strategy
    - Hip strategy
    - Stepping strategy
    - Weight shift strategy
    - Suspension strategy

Physical Therapy TOOLKIT

Balance

Physical Therapy Intervention:
Progress balance activities and exercises by challenging the visual system (low lighting, wear sunglasses indoors, eyes closed), the proprioceptive/somatosensory system (unstable surfaces such as foam pads, therapy ball, mini trampoline, balance disc, wobble board, Biomechanical Ankle Platform System (BAPS), Bosu ball trainer, ambulation on an uneven surface), and the vestibular systems (gaze stability exercises).

Provide dual-tasking balance challenges by combining a balance exercise with another form of physical activity (ball kick, ball toss, arm or leg exercises), a cognitive task (count backward from 100 by 3's, recite the alphabet backwards or name the presidents) or by adding external distractions (noise, people, music).

Utilize interactive video games (Wii-Fit, Wii Sport, and Kinect) and brain fitness programs (Mindfit) to challenge balance.

Patient and Caregiver Handouts:
Balance Exercise Guidelines
Balance Exercises - Sitting
Balance Exercises - Standing
Core Exercise Guidelines
Core Exercises - Back Muscles
Core Exercises - Pelvic Muscles
Core Exercises - Stomach Muscles
Exercise Ball Guidelines
Exercise Ball - Back Muscles
Exercise Ball - Pelvic Muscles
Exercise Ball - Stomach Muscles

Additional Treatment Guides:
Dizziness
Therapeutic Exercise

Physical Therapy TOOLKIT

Chronic Obstructive Pulmonary Disease

Conditions include emphysema, chronic bronchitis, asthma and bronchiectasis

Impairments and Functional Limitations:
Impaired transfers and bed mobility
Impaired gait
Limited range of motion (chest and shoulders)
Muscle weakness
Impaired aerobic capacity/endurance
Impaired balance
Dyspnea at rest or with exertion
Difficulty controlling airway secretions
Memory impairment
Co-occurring conditions - stress incontinence, cubital tunnel syndrome, depression and anxiety, heart disease, hypertension, lung cancer.

Stages of COPD:
Mild - FEV1 is equal or greater than 80 percent.
Moderate - FEV1 is between 50 and 79 percent.
Severe - FEV1 is between 30 to 49 percent.
Very Severe - FEV1 is less than 30 percent.

Physical Therapy Intervention:
Train in safe and efficient functional mobility (sit to stand, bed mobility skills, transfers, wheelchair mobility, ambulation and stairs).

- Treat underlying impairments that limit safety and independence.
- Train in the safe and correct use of assistive devices and adaptive equipment (walkers, canes, sliding boards, bed transfer handles, leg lifters, wheelchairs) as appropriate.

Teach patient and caregiver safe use of oxygen during mobility including fire safety, managing O2 lines, care and use of oxygen equipment, carrying portable O2.

Provide an individualized exercise and walking program that includes endurance, strengthening and flexibility activities that incorporate breathing techniques.

Assess and monitor blood pressure, heart rate, respiratory rate and oxygen saturations and perceived rate of exertion in response to functional activities and exercise.

Instruct in energy conservation, pursed lip breathing, heart rate and dyspnea self-monitoring with application to functional tasks.

Instruct in respiratory panic identification causes and alleviation techniques.

Physical Therapy TOOLKIT

Chronic Obstructive Pulmonary Disease

Physical Therapy Intervention:
Provide respiratory management.

- Secretion removal (percussion, vibration, and postural drainage).
- Inspiratory muscle training (pursed lip breathing exercises, and inspiratory muscle trainers).
- Cough training.

Reinforce education to reduce exacerbations (cover face with mask, avoid close contact with people who have a cold or flu, through and frequent hand washing, take medications, know the early symptoms).

Educate patient and caregivers about COPD, community resources. Encourage participation in support groups. Refer to outpatient Pulmonary Rehab as appropriate.

Provide education regarding fall risk and prevention strategies. Evaluate home environment, provide environmental modifications and adaptations as appropriate.

Patient and Caregiver Handouts:
Breathing Distress - Causes and Tips to Prevent
Breathing Distress Control
Cool-Down Stretches
Controlled Cough
Edema (Swelling) Control of the Leg(s)
How to Check Your Heart Rate
Posture Exercises
Postural Drainage - Chest Percussion
Postural Drainage Positions
Pulmonary Exercises
Pursed Lip Breathing
Tips to Conserve Energy
Walking Guidelines
Warm-Up Exercises

Additional Treatment Guides:
Fall Risk Assessment and Prevention
Urinary Incontinence

Physical Therapy TOOLKIT

Fracture of the Ankle
(Lateral, Medial, Posterior Malleolus)

Impairments and Functional Limitations:
Impaired transfers and bed mobility
Impaired gait
Muscle weakness
Limited ankle ROM
Impaired balance/proprioception
Pain and edema
Weight bearing restrictions

Physical Therapy Intervention:
Train in safe and efficient functional mobility (sit to stand, bed mobility skills, transfers, and wheelchair mobility) while adhering to weight bearing restrictions.

- Treat underlying impairments that limit safety and independence.
- Train in the safe and correct use of assistive devices and adaptive equipment (walkers, canes, sliding boards, bed transfer handles, leg lifters, wheelchairs) as appropriate.

Gait training with assistive device and/or ankle cast/boot as appropriate.

- Progress weight bearing. *Follow the referring surgeon's specific guidelines for progression.*
- Monitor cardiac status during ambulation. The amount of energy required to perform limited weight bearing is 30 to 50% greater than that required for normal ambulation.

Pain and edema control

- Moist heat, warm whirlpool, and/or pulsed ultrasound
- Ice, TENS, compression, and elevation
- Cold for 20 minutes after exercises

Provide exercises for all uninvolved joints to prevent loss of ROM and strength.

Provide a progressive ankle exercise program that includes endurance, strengthening and stretching activities. Progression depends on co-morbidities, type of injury, stage of healing, surgical intervention, and complications. *Follow the referring surgeon's specific guidelines for progression.*

Provide a fall prevention program that includes balance, coordination and agility training and education about fall risk and prevention strategies.

Physical Therapy TOOLKIT

Fracture of the Ankle (Lateral, Medial, Posterior Malleolus)

Patient and Caregiver Handouts:
Ankle and Foot Active Range of Motion
Ankle and Foot Isometric Exercises
Ankle and Foot Strength Exercises
Ankle and Foot Stretches
Arm Strength Exercises
Edema (Swelling) Control of the Leg(s)
Exercise Tips for Orthopedic Conditions
Superficial Cold
Superficial Heat