Growing Old Isn’t for the Faint of Heart...
About the Presenter

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• Works at the new Rio Rancho Out-Patient Clinic located at HWY 528 and Rockaway Blvd.
Using Adaptations to Make Life Easier is OK!

• Just because you are growing older doesn’t mean that you have to give up on the things that you enjoy!
Diseases that Can Impact Participation

- Arthritis
- Cerebrovascular disease (strokes)
- Neurological diseases (Parkinson’s, MS, etc.)
- Diabetes
- COPD
Other Issues Related to Aging that Can Impact Participation

• Decreased hearing and/or vision
• Diminishing muscle strength
• Decreased mobility
• Increased risk for falls due to balance deficits
• Increased risk for illness
Examples of Adaptive Equipment That Can Help Make Participation Easier
Adaptive Equipment for Use in ADL’s
Other Adaptive Equipment for use in ADL’s
Equipment for use in IADL’s
Other Adaptive Equipment for IADL’s
Adaptive Equipment for Use in Leisure Activities

The PowerGlove

Ensures a Firm Grip

Club is Locked in the Proper Grip Position Throughout the Swing
Other Adaptive Equipment for Use in Leisure Activities
Home Safety and Aging in Place

• Most people want to be able to stay in their homes for as long as possible.
• Here are some things to think about that can make your home safer.
Home Safety
Home Modifications
Community Resources

• Occupational Therapist
• DME vendor
• Thrift stores
• Churches

• Adaptive equipment banks (diagnosis specific)
• Online shopping
• Online information from reliable sources
Fall Prevention

Presented by: Lindsey Borders, PT, DPT
Approximately 30% of people aged 65 or older fall every year

- Of those, 24% result in severe soft tissue injury AND fractures
- 15% of Emergency Room visits are associated with falls
- Mortality rate associated with falls is 6%
- 40% of admissions to nursing homes are due to a fall
A Vicious Cycle

- Increased caution and fear of falling
- Loss of confidence for independent function
- Reduced motivation to participate in activity
- Decreased strength and balance
- Increased falls
Fall Etiology – Intrinsic Factors

• Age
• Sensory changes
• Musculoskeletal changes
• Neuromotor changes
• Cardiovascular changes
• Pharmaceutical challenges
Fall Etiology – Intrinsic Factors

• Age: fall incidence increases with age

• Sensory changes
  • Decreased vision, hearing loss, proprioceptive loss
  • Altered sensory organization and integration for balance
  • Dementia/Alzheimer’s Disease
Fall Etiology – Intrinsic Factors

• Musculoskeletal changes
  • Muscle weakness
  • Decreased active range of motion in joints
  • Denial of physical limitations

• Neuromotor changes
  • Vertigo/dizziness (multifactorial)
  • Slowed reaction time, impaired motor control
Fall Etiology – Intrinsic Factors

• Cardiovascular changes
  • Decreased cardiovascular endurance (activity dependent)
  • Orthostatic hypotension
  • Heart arrhythmias
Fall Etiology – Intrinsic Factors

- Pharmaceutical challenges
  - Strong evidence linking fall risk to psychotropic meds
  - Evidence linking drugs that cause peripheral vasodilation to falls (increasing risk of orthostatic hypotension)
  - Conflicting evidence linking hypoglycemic agents
    - Older adults with Type 2 diabetes are more likely to fall than matched peers
      - Diabetes medication related to an increased risk of fall for the elderly. Berlie HD, Garwood CL. 2010
      - Diabetes-related complications, glycemic control, and falls in older adults. Schwartz AV, Harris TB. 2008
Fall Etiology – Extrinsic Factors

- Setting/Environment
- Activity-related risk factors
- Clothing
Fall Etiology – Extrinsic Factors

• Setting/Environment
  • Relocation/moving into a new environment increases risk of confusion and falls
  • 3x as many falls for institutionalized or hospitalized elderly than for community-dwelling elderly
  • At home, most falls occur in the bedroom (42%) and the bathroom (34%)
  • Consider ground surfaces, lighting, doorways, stairs
Fall Etiology – Extrinsic Factors

• Activity-related risk factors
  • Most falls occur from normal daily activity: sit<>stand, bending, walking, climbing stairs
  • Only 5% of falls occur with “hazardous activities” outside of normal daily living, i.e. climbing on a ladder, standing on the roof
  • Risk increases with improper use of assistive devices
Fall Etiology – Extrinsic Factors

• Clothing
  • Worn/old shoes without a tread
  • Heels
  • Slip-on shoes/slippers
  • Flip-flops
  • Loose pants/skirts
TIPS FOR FALL PREVENTION

• Schedule regular checkups with ophthalmologist to address vision changes

• Apply color strips to stairs/handrails at home to address elevation changes

• Apply non-slip gripping to stairs/steps to enter home

• Address hazards in the home:
  • Poor lighting
  • Loose railings/no railings
  • Loose flooring/cracks in driveway or sidewalk
  • Unsteady furniture
  • Removing clutter from floor
  • Removing slippery throw-rugs/use non-skid tape to secure down
  • Keep driveways/walkways shoveled/salted in the winter
TIPS FOR FALL PREVENTION

Durable Medical Equipment
• Grab bars
• Elevated toilet seat
• Shower chair
• Automatic/Voice activated lights
  • Going to the restroom at night to avoid tripping on bed covers

Address medication:
• Be aware of all common side effects of medication
• Replace expired medications
• Have your physician or pharmacist double check there are no drug interactions if on multiple meds
• Limit recreational alcohol/drugs that may alter senses while intoxicated and/or interact with current prescriptions
TALK TO YOUR LOCAL PHYSICAL THERAPIST!

• Increase strength and reaction time
• Increase dorsiflexion active range of motion
• Increase ankle rocker/hip rocker/stepping reaction time
• Address proprioception and balance challenges by practicing in a safe environment
No Longer a Vicious Cycle!

- Decreased fear of falling
- Increased confidence for independent function
- Decreased Fall Risk!
- Increased Strength and Balance
- Increased motivation to participate in activity
Chronic Pain Sub-Classification: new options from new evidence

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Chronic Pain: a few numbers

• In the United States, around 30% of the population has a chronic pain condition, bringing the total annual cost to 500–600 billion dollars [1, 2].
• In Canada, a study by Phillips and Schopflocher reported the costs related to chronic pain to be higher than HIV, cancer and heart disease combined [3].
• In countries of the European Union, the overall cost of low back pain (both acute and chronic) is 1.7% of the entire gross domestic product [4].
• In the Netherlands; 20% - 30% of this figure is due to chronic low back pain alone.
• In general, most studies have been focusing on chronic low back pain, as it is the most prevalent chronic pain in the general population [5].
Sub-Classification 6 Types

Modifiable Factors

Co-morbidities
NICE Regulation

Behavioral Factors

Pain Mechanism

Neurological Factors

Movement & Motor Function

Patho-anatomical

Assess & Understand Functional Mechanisms for Each Sub-classification

Individual Factors: Modifiable

Therapeutic Relationship

Readiness to Change

Expectation & Beliefs

Lifestyle Factors

Loading Demands
Sub-Group 1: Patho-anatomical mechanisms

What PTs usually do:

• Articular → Joint mobilizations
• Myofascial → Myofascial release
• Neurodynamics → Neural mobilization
• Connective tissues → Connective tissue
Sub-Classification 6 Types

Modifiable Factors

Co-morbidities NICE Regulation
- Behavioral Factors
- Pain Mechanism
- Neurological Factors
- Movement & Motor Function
- Patho-anatomical

Assess & Understand Functional Mechanisms for Each Sub-classification

Individual Factors: Modifiable
- Therapeutic Relationship
- Readiness to Change
- Expectation & Beliefs
- Lifestyle Factors
- Loading Demands
Sub-Group 2: Motor Function

- Movements Patterns
- Translation control
- Respiratory control
- Motor Fitness
Sub-Classification 6 Types

Modifiable Factors

Co-morbidities, NICE Regulation, Behavioral Factors, Pain Mechanism, Neurological Factors, Movement & Motor Function, Patho-anatomical

Assess & Understand Functional Mechanisms for Each Sub-classification

Individual Factors: Modifiable

Therapeutic Relationship, Readiness to Change, Expectation & Beliefs, Lifestyle Factors, Loading Demands
Sub-Group 3:
Neurological Factors - CNS coordination

1. Neurocognitive and learning abilities
2. Sensory motor function
3. Neurological soft signs
4. Primary/Postural reflexes integration
5. Midline and body awareness
Sub-Group 3: Neurological Factors - CNS coordination

1. Neurocognitive and learning abilities

- Spelling / Counting
- Motor Learning
- Visual imagery
- Memorization
- Directions
- Recount daily activities
Sub-Group 3: Neurological Factors - CNS coordination

2. Sensory motor; specific sensory training
   - Hearing (vestibular); spatial orientation of sound
   - Sight; smooth pursuit and tracking exercises
   - Touch; two point discrimination retraining
   - Smell; progressive desensitization to specific smells
   - Taste; progressive desensitization to specific tastes
Sub-Group 3:
Neurological Factors - CNS coordination

3. Neurological soft signs

- Poor coordination
- Poor speed and/or accuracy of movements
- Poor balance
- Dysrhythmias
Sub-Group3: Neurological Factors - CNS coordination

3. Neurological soft signs
   • Poor coordination
   • Poor speed and/or accuracy of movements
   • Poor balance
   • Dysrhythmias
Sub-Group3: Neurological Factors - CNS coordination

4. Primary/Postural reflexes integration

• Non-properly integrated reflexes have an impact on the tone of the involved muscles.

• Learning/recovery mechanism for the body

• Body can get "stuck in them", altering tone and predisposing to mechanical stress and potential damage

• e.g. STNR, ATNR, Babinski, Landau, Moro, Spinal Galant Rolling, Crawling
Sub-Group 3: Neurological Factors - CNS coordination

5. Midline and body awareness

• If Brain does not have a good understanding of body position in space, can produce increased stress and mechanical tension on a patient’s body

• These patients rely on increased tension to have some degree of feedback of a body part.

• e.g. Body image drawing based on pain/tightness
Sub-Group 3: Neurological Factors - CNS coordination

5. Midline and body awareness
5. Midline and body awareness
Sub-Group 4: Pain Mechanisms

- Nociceptive (depends on tissues involved)
- Neuropathic (lesion to the somatosensory system – carpal tunnel/diabetic neuropathy)
- Neurogenic (mechanical strain – double crush, myofascial trigger point)
- Central sensitization (augmented central response)
- Body image pain (Pain as response from impaired body image)
5. Midline and body awareness
Subgroup 5: Behavioral Factors Rehab

PSF = Coping mechanisms, catastrophizing, emotional issues, hopelessness, expectations, beliefs, motivations, frustrations.

Important to recognize and address the presence with patient. We might be able to teach basic coping skills, but mostly we refer out.
5. Midline and body awareness

Sub-Classification
6 Types

Modifiable Factors

Co-morbidities
NICE Regulation

Behavioral Factors
Pain Mechanism
Neurological Factors
Movement & Motor Function
Patho-anatomical

Assess & Understand Functional Mechanisms for Each Sub-classification

Individual Factors: Modifiable

Therapeutic Relationship
Readiness to Change
Expectation & Beliefs
Lifestyle Factors
Loading Demands
Subgroup 6: NICE Dysregulation

Systemic Changes to Chronic Low-grade inflammation

- N - Neurological
- I - Immune
- C - Cardio-Metabolic
- E - Endocrine
Subgroup 6: Comorbidities – NICE Dysregulation

Systemic Changes to Chronic Low-Grade Inflammation

Lifestyle changes!

- Diet
- Stress
- Sleep
- Regular physical activity
- Supplements
- Smoking/ Alcohol/ Weight Control
Subgroup 6: Diet-Related Systemic Inflammation

Pro inflammatory diet has been associated with longer and more severe pain. Pro inflammatory diet is partly mediated by genetic factors and predisposition to have an immune response in the gut with specific foods.
Subgroup 6: Diet-Related Systemic Inflammation

Main pro-inflammatory foods are:

- Red meat
- Dairy products
- Gluten
- Eggs
- Corn
- Soy
- Peanuts
- Sugar