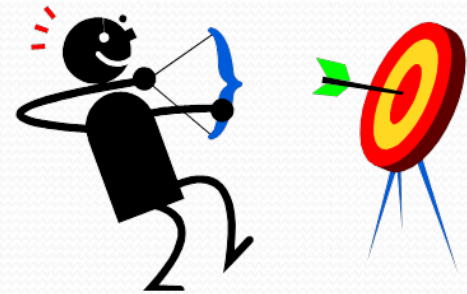


Seating and Mobility for the Elderly Wheelchair User

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Objectives



At the conclusion of this webinar,
participants will be able to ...

1. name 3 diagnoses commonly found in older adults.
2. identify 2 manifestations of one of these conditions that are relevant to the seating and mobility evaluation.
3. name 2 considerations in the selection of seating for older adults.
4. name 2 reasons that powered mobility would be more appropriate for an older adult than manual mobility.

Course Outline

Geriatric seating defined

Meaning of “geriatric”

Older adults – who are they?

Physiological changes with aging and effects on wheelchair seating

Common conditions of older adults

Examples: stroke, Parkinson’s Disease, dementia

Understanding diagnoses more prevalent in older adults and their functional and physical manifestations

Evaluation

Physical, functional, ADL’s, environment, transportation

Choosing seating components

Special considerations for older adults

Considerations related to conditions or co-morbidities

Dependent vs. independent mobility

Dependent mobility systems – pros and cons

Independent mobility systems – pros and cons

Putting it all together: cases



Poll #1

1. What is your role in wheelchair seating and mobility?
 - a. Clinician performing assessment
 - b. Supplier providing the wheelchair/seating equipment
 - c. Supplier providing both the assessment and providing the equipment
 - d. Neither of these



“Geriatrics”

- “The term *geriatrics* comes from the Greek γέρων *geron* meaning ‘old man’ and ιατρός *iatros* meaning ‘healer.’” (Wikipedia, accessed 12/27/11)
- Geriatrics is a subspecialty in medicine that focuses on health care specifically for older adults.



“Geriatric Wheelchair Seating”

- Geriatric wheelchair seating might be defined as the provision of wheelchair and seating technologies specifically for older adults.
- Not usually considered a sub-specialty in wheelchair seating as many practitioners work with patients of all ages.



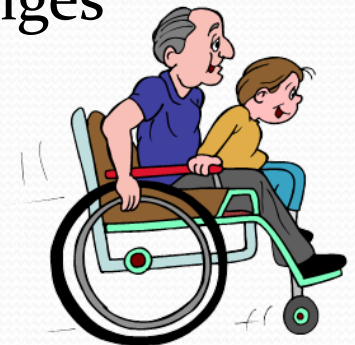
Poll #2

1. Do you work with older adults in your practice?
 - a. Yes, all the time
 - b. Yes, some of the time
 - c. Yes, but rarely
 - d. No, I never work with older adults



Who are “older adults”?

- Many possible definitions of “older adult”
- Some common characteristics:
 - Increased prevalence of certain medical conditions/diseases, such as:
 - Stroke or CVA
 - Parkinson’s Disease
 - Dementia, including Alzheimer’s Disease
 - Experiencing additional physiological changes associated with aging



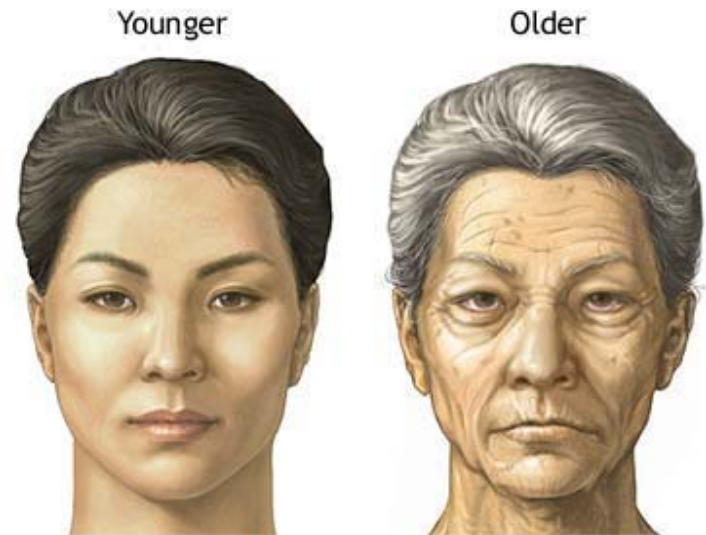
Poll #3

1. What age do you consider a client an “older adult”?
 - a. Over 50
 - b. Over 65
 - c. Over 70
 - d. Over 75



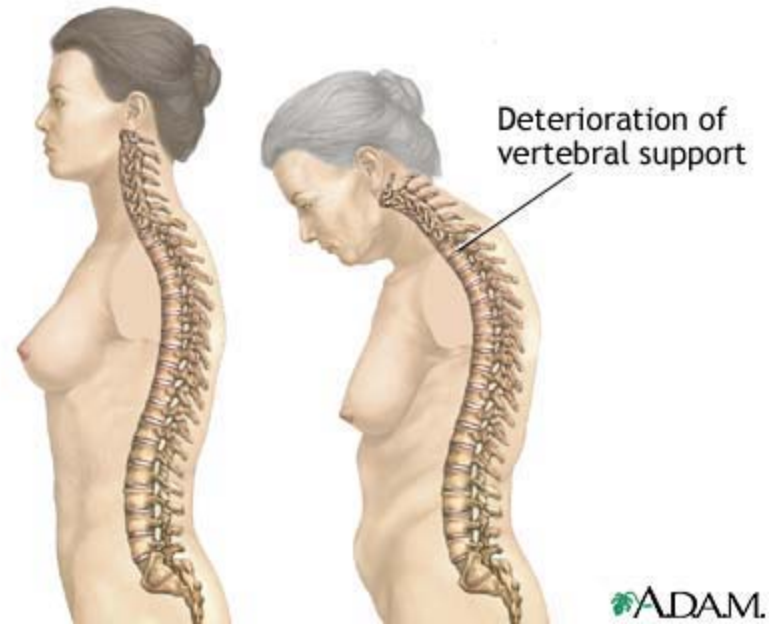
Physiological Changes with Aging

- Skin becomes less elastic and more fragile
 - Increased risk of pressure ulcers and skin tears
 - Need “softer” surfaces
- Muscles, ligaments, tendons become less elastic
 - Decreased flexibility in joints
 - Need careful screening for range of motion limitations
 - May need more adjustable supports



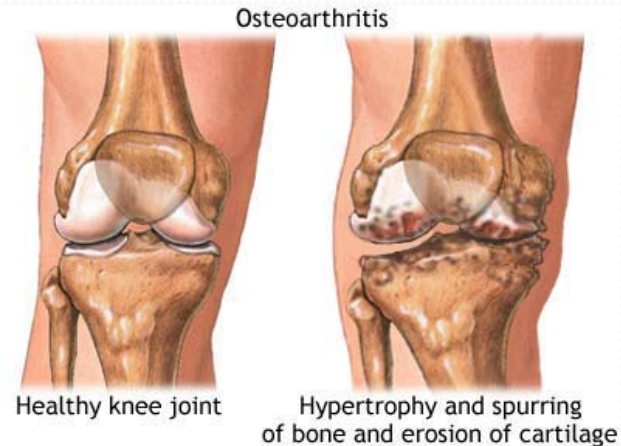
Physiological Changes with Aging

- Spine - decreased fluid in intervertebral disks
- Decreased sensation in spine joints
 - Characteristic postural changes
 - May be exacerbated in seating



Diseases More Common in Older Adults

- Progressive
 - Parkinson's Disease
 - Dementia
 - Post polio syndrome
 - Osteoarthritis
 - Chronic Obstructive Pulmonary Disease (COPD)
 - Coronary Artery Disease (CAD)
- Non-progressive
 - CVA or stroke
 - Myocardial Infarction (MI) or heart attack
 - Traumatic injury – fall



Special Considerations – Disease Specific

- Parkinson's Disease
 - Progressive decline in physical function
 - Increasing fall risk
 - Late stage dementia
 - Exaggerated postural changes
 - Increased kyphosis
 - Forward head posture
 - Tremor
 - Slowed movement
 - Rigidity

Special Considerations – Disease Specific

- Osteoarthritis
 - Frequently in weight bearing joints
 - Knees
 - Hips
 - Progressive increase in symptoms
 - Debilitating pain with function/at rest
 - Resulting loss of muscle strength
 - Gradual loss in mobility and function

Special Considerations – Disease Specific

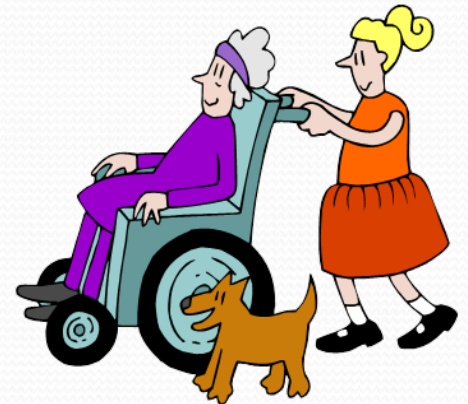
- CVA or stroke
 - Non-progressive
 - One sided body weakness
 - Decreased postural control
 - Impaired mobility
 - May have difficulty with communicating
 - May have vision impairment

Special Considerations – Disease Specific

- Dementia
 - Progressive decline in cognitive function
 - Eventual decline in functional mobility
 - Heightened fall risk
 - Multiple safety issues – falls, wandering, self injury
 - Frequently cared for in institutional setting – long term care

Special Considerations for Older Adults

- Increased potential for multiple conditions simultaneously
 - Ex. Stroke and osteoarthritis
- Increased potential for co-morbidities to consider
 - Ex. Parkinson's Disease and osteoporosis
- Older adult caregivers/multiple caregivers
- Environmental challenges
- Transportation challenges



Common Co-morbidities in Older Adults

- Diabetes mellitus
- Osteoporosis
- Hypertension
- COPD/Asthma
- Balance impairments
- Nutritional challenges
- Various types of cancer
- Sensory impairments – vision, hearing, smell, taste

Special Considerations for Older Adults

- Progressive conditions
 - Ex. Parkinson's Disease, dementia, OA
 - Equipment may need modification in future
 - Increased postural support
 - Increased pressure management
 - Adaptations to functional decline
 - Need to consider speed of progression in past
 - Consider progressive changes in posture as well as function

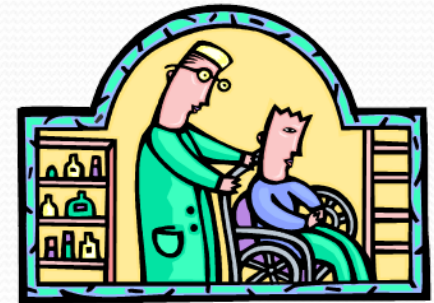
Wheelchair Evaluation for Older Adults

- Very similar to wheelchair evaluation for all!
 - Physical – Morbidities, ROM, strength, posture
 - Functional – ambulation function, including safety and effectiveness, balance, transfers
 - ADL's – particularly MRADL's if Medicare funding
 - Environment – home vs. institutional setting
 - Caregivers needs – older caregiver vs. multiple caregivers
 - Transportation considerations



Special Considerations for Seating

- Higher risk of pressure ulcers/skin damage
- High likelihood of postural changes exacerbated by sitting
- Need careful assessment – accommodate vs. correct postural asymmetries or deformities
 - Flexibility of postures
 - Co-morbidities such as osteoporosis
 - Potential for skin damage



Positioning Considerations

- Consider use of open seat to back support angle or reclining back support
- Consider use of manual or powered tilt system
- Stabilize pelvis carefully
- Position to allow gravity to assist upright posture
- Position for maximum function



Dependent or Independent Mobility?

- Dependent

- May be safer in presence of dementia
- May be needed for progressive condition
- May be easier for caregiver to manage
- May be easier for transportation
- May be less costly, easier to fund

- Independent

- May be better for overall function
- May improve independence with ADLs
- May enhance quality of life
- Often powered mobility
- May be more difficult to transport
- May be harder to fund

Mobility Device Considerations

- Balancing priorities
 - Independence in mobility/function
 - Safety concerns related to co-morbidities and/or progressive conditions
 - Needs of environment
 - Transportation needs
 - Caregiver management needs/abilities
 - Funding issues



Mobility Considerations

- Manual mobility
 - May be less independent in mobility
 - Need for optimal configuration
 - Consider foot propulsion



Mobility Considerations



- Powered mobility
 - Higher likelihood for independence
 - Careful evaluation of progressive diseases or conditions
 - Consider co-morbidities that may compromise safety
 - Awareness of sensory impairments



Case 1 – Parkinson's Disease

- Mr. F – 79 y o man diagnosed 14 years prior to wheelchair assessment
- Progressive decline in mobility, slow at first, but more rapid lately
- Developed spinal stenosis 5 years ago – contributed to function decline and causing back pain
- Torn rotator cuff muscles in both shoulders – severely limits weight bearing on walker
- Referred for wheelchair evaluation due to progressive decline in function and loss of ambulation

Case 1 - Evaluation

- Unable to ambulate at all times, even with his 4 wheeled walker
- Minimal assistance required for transfers in and out of bed
- Moderate assistance required for bed mobility and ADLs
- Severely impaired balance with several recent falls resulting in hospitalization
- Back pain in standing and sitting

Case 1 – Other Factors

- Lives with supportive wife, assistance also from supportive daughter
- Cognitive function intact
- Primary goal is for independent mobility and positioning for back pain relief
- Severe kyphosis throughout lumbar and thoracic spine

Case 1 – Equipment Trial

- Unable to propel any type of manual wheelchair, due to severe weakness in both upper extremities
- Severe back pain and kyphosis sitting upright
- Independent operating both scooter and powered wheelchair, however posture significantly improved in PWC with power tilt when tilted back approximately 15 degrees

Case 1 – Equipment Recommended

- Power wheelchair base
- Power tilt seating system
- Custom molded seat and back support
- Anterior pelvic belt and anterior chest support
- Head support

Case 2 - Osteoarthritis

- Mrs. S is a 71 year old woman
- Primary diagnosis – severe OA both knees
- Co-morbidities: chronic renal failure, spinal stenosis, peripheral neuropathy in both lower extremities, carpal tunnel syndrome in both upper extremities, and rotator cuff tears in both shoulders
- 5' 4" and 240 pounds – morbid obesity

Case 2 - Considerations

- She has been using her current power wheelchair for 7 years and it is severely worn and in need of significant repair
- She uses a mechanical lift system for transfers in her home
- She drives an adapted van while seated in her existing wheelchair
- She is independent in all MRADLs using her wheelchair, but is unable to perform them without the use of a power wheelchair

Case 2 - Evaluation

- She has multiple range of motion and strength limitations throughout her arms and legs
- Her muscle tone is normal
- Her posture is difficult to assess, however there are no major concerns to address
- She has fluctuating edema in her lower extremities and limited sensation with fragile skin

Case 2 - Recommendations

- Replace existing power wheelchair base
- Captain's style seat with high back
- Flip up foot support

Summary

- Similarities in older adult wheelchair seating and mobility
 - Need to focus on function
 - Patient's goals are key
 - Careful and thorough evaluation required
 - Multiple considerations involved
 - Careful documentation necessary

Summary

- Unique characteristics of older adult wheelchair seating and mobility
 - Different medical conditions involved
 - Often have multiple conditions or co-morbidities
 - Physiological changes increase risk for complications
 - Caregivers often older
 - Environments may be simpler or complex – depending on circumstances

Any Questions?

