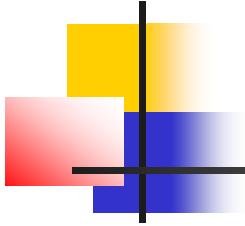


Meeting the Needs of Aging Persons with Developmental Disabilities



Cross Network Collaboration for Florida

Sensory Processing, Environmental Modifications and Adaptive Technology

Module 5

Based on ADRC training
developed by:

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ADRC Training

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Purpose of Module 5

- Detail how older adults and individuals with developmental disabilities:
 - Interact with the physical environment and adaptive technology
 - Have the same environmental/sensory issues



Purpose of Module 5

- Outline techniques for individuals and their families to:
 - Reduce the impact of sensory changes
 - Maintain independence
 - Address common challenges they share with each other
 - Experience quality of life through use of adaptive environment and technology



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Sensory Processing



Sensory Changes and Aging

- Increase in impairments with aging
- Increase in sensory changes
- Potential for reduction in quality of life and independence
- Common experience as people age regardless of pre-existing disabilities



Importance of the Environment

- Immediate environment increasingly important with aging
- Reduction of barriers to community participation and social interaction essential
- Balance of ease of use and challenge
 - Changing with age and increased impairments



Sensory Processing and Aging

- All information for functioning taken in from sensory information in the environment
- Brain must
 - Be aware of sensory stimuli
 - Receive the information accurately
 - Bring the information together through processing
 - Interpret information to determine response



Sensory Processing and Aging

- Ongoing process 24 hours a day
- Too much information overwhelming
- Becomes more difficult with aging due to impairments and added perceived or actual environmental stress



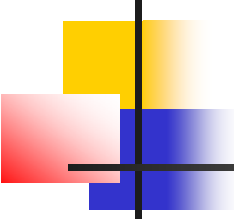
Sensory Changes and Aging

- Although changes are age related, a combination of these changes may:
 - Increase risk of falls
 - Cause acute dementia
 - Reduce independence and quality of life
- Early onset aging of individuals with Down syndrome and cerebral palsy



Sensory Changes in Older Adults

- Slowing of memory recall
- Interference with short-term memory
- Slowing of cognitive function
- Reduced ability to process multi-sensory input (confusion)



Impact of Sensory Changes on Older Adults

- Reduced socialization
- Difficulty with directions and location
- Reduction in skills and interests
- Reduced ability to participate in interests and activities



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The Seven Senses and Aging



Seven Senses

- Hearing – Auditory
- Seeing – Visual
- Touch – Tactile
- Smell – Olfactory
- Taste – Gustatory
- Location in space – Proprioceptor
- Head moving through space – Vestibular



Hearing and Aging

- Increased hearing impairments with aging
 - Presbycusis – Greek for ‘Old hearing’
- Increased background noise interference
- Increased tinnitus – ringing in the ears



Environmental Modifications for Hearing Impairments

- Addition of soft materials to the environment
- Reduction of hard surfaces
- Reduction of background noises from appliances, conversation, street noise
- Increased lighting



Vision and Aging

- Increased visual impairments with age
- Central Vision Impairments – Difficulty with seeing in front affecting ability to read, see signage, recognize people
- Peripheral Vision Impairments – Narrowed visual field, affects ability to observe immediate environment



Vision and Aging

- Increased glare sensitivity
- Decreased ability to see color contrasts
- Difficulty adjusting to changes in lighting
- Difficulty with busy patterns, increased background interference



Vision and Aging

- Increased risk for falls due to reduction in vision
- Increased risk for misdiagnosis of Alzheimer's disease due to visual changes/impairments



Environmental Modifications, Vision, and Aging

- Increase task lighting
- Decrease glare, avoid high gloss waxes, shiny surfaces
- Use consistent lighting to reduce shadows
- Use strong contrasting colors of furniture to floors and walls, objects to background colors



Touch and Aging

- Decreased tactile ability
- Loss in fine motor dexterity
- Increased tactile defensiveness
- Nerve reduction with inability to feel pain, sense danger
- Increased risk of skin breakdown



Environmental Modifications and Touch

- Be aware of textures that irritate skin
- Avoid synthetic fabrics
 - Use natural fabrics such as cotton to reduce skin breakdown
- Provide ample personal space and territory



Smell, Taste, and Aging

- Reduced taste and smell
- Increased sensitivity to noxious or dangerous odors
- Loss of appetite
- Changes due to medications



Environmental Modifications, Smell, and Taste

- Reduce noxious odors in environment if possible
 - Awareness that inappropriate behaviors may be related to noxious odors
- Bake before meals to stimulate appetite
- Conduct smell and taste exercises
 - Helps retain taste and smell



Proprioceptor & Vestibular

- Increased disorientation in space through disease process (i.e., Alzheimer's disease) or sensory loss
 - Inability to locate oneself in space
- Increased changes in the physical environment resulting in potential disorientation



Possible Muscle Changes Affecting Mobility

- Moderate (15%) loss of muscle mass
 - Increase risk of loss for individuals who have not been weight bearing
- Moderate exercise will strengthen upper and lower body



Possible Muscle Changes Affecting Mobility

- Severe (33%) loss of muscle
 - Increased falls
 - Reduced activities or interest in participating in activities
 - Weak upper body
 - Behavioral changes due to pain
 - Likely in persons not weight bearing (cerebral palsy)



Environmental Modifications for Mobility

- Increased cueing in the environment
- Marking of personal space and objects
- Chairs with arms
- Decreased accessibility barriers
- Adaptive equipment for ease of movement and independence
- Removal of throw rugs, thresholds



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Assistive Technology and Aging



Assistive Technology and Aging

- Enhance independence
- Improve quality of life
- Support functioning and daily living
- Cost effective
- A resource for both networks



Assistive Technology

- *"Products, devices or equipment, ... (from various sources), that are used to maintain, increase or improve the functional capabilities of individuals with disabilities..."* Assistive Technology Act of 1998.
- From canes to voice recognition software



Assistive Technology Services

- Support individuals with disabilities and their caregivers to:
 - Select, acquire, or use adaptive devices
- Services include:
 - Functional evaluations and assessments
 - Training on devices
 - Purchasing or acquisition support



Assistive Technology Products

- Enable accomplishment of Activities of Daily Living (ADLs)
- Assist in communication (augmentative communication devices)
- Support education, work or recreation activities
- Help achieve greater independence and enhance quality of life “off the shelf” or by special design



Universal Design Approach

- For everyone
- Adapts to the individual
- Requires less updating and reassessment
- Generally requires less training
- Not always the best option



Clinical Design Approach

- Specific for the disorder or individual
- May require updating and reassessment
- Generally requires more training
- Not always the best option



Combine Design Approaches

- Examples in aging:
 - “[Bob's Room](#)” in a long-term care facility Parkinson's Unit
- Examples in developmental disability group homes:
 - [SmartSystems](#) from Imagine!



Collaboration Across the Networks

- Using technology to help us all work together
- A point at which we can all come together to maximize supports, independence, and quality of life
- Regardless of age or disability



Summary of Module 5

- Environmental modifications for sensory impairments can help maintain quality of life and functioning for the older person
- Assistive technology is a resource for both networks and can be another bridging opportunity



Group Discussion

- Questions
- Survey Monkey