Ergonomics for the elderly



Hearing Changes:

- Impact may be greater than other losses
- Source of loss
- • Auditory nerve
- • Structure of ear
- • Deterioration of brain
- • Decreased ability to hear intensity or volume of sound
- Decreased ability to hear pitch of sound—especially high pitched (increased intensity and pitch) does not aid hearing.
- • Decreased ability to discriminate between similar words.

Hearing difficulties may produce these behaviors:

- Increased volume of speaking, shouting
- Tipping head or moving position to facilitate hearing
- • Asking for things to be repeated or confusing words
- Blank looks, disorientation, inappropriate responses—"yes" or nods when not really
- understanding
- • Isolation withdrawal from social participation
- • Not reacting slammed door, loud noise
- Emotional upset hyperactivity, frustration and anger. It is a typical and normal reaction
- not to admit but to lash out.

- Stand in front of person you are speaking to (give opportunity to read lips)
- Make sure is aware that you are addressing him; touch the person slowly to assure
- attention
- Use gestures or objects to illustrate message, point in direction
- • Use short sentences
- Attempt to speak to "good" ear

Tactile Changes:

- Reduced tactile sensation touch messages don't get sent to brain; can't ties shoes if
- can't feel shoe laces; can't respond to heat (hand on hot object iron or stove) if can't
- feel heat; e.g. bruise don't know it; children and others can react "Oh Mother, you
- are so careless (blaming)"
- • Textures, temperatures, other discriminations are difficult cause:
- P Parkinson's disease
- P Small cardiovascular accidents unnoticed cause sensory difficulties
- P Lack of blood flow to hands due to swelling
- P Arthritis
- P Decline in use of limbs/muscles resulting from continual sitting or being
- bedridden

Tactile difficulties may produce these behaviors:

- Avoidance withdrawal from sewing, touching other people, touching unfamiliar objects
- • Extremes in recognizing pain cannot detect; overreacts
- Oral exploration place object in mouth to determine what it is
- • Not responding to pressure
- Grasping objects tightly (overreacting)

- • Talk give an explanation of what you are doing
- • Assure grip before release
- Touch increase pressure just enough for person to feel your touch but not enough to
- hurt

Strength/Dexterity Changes:

- In the young adult, 43 percent of body weight is muscle.
 With age (above 70), lean body
- mass declines about 25 percent of body weight.
- There is an increase in fat cells—to 1/3 body weight by age 70. There is also a decline in
- nerve activity.
- • Both endurance and reaction time are decreased.

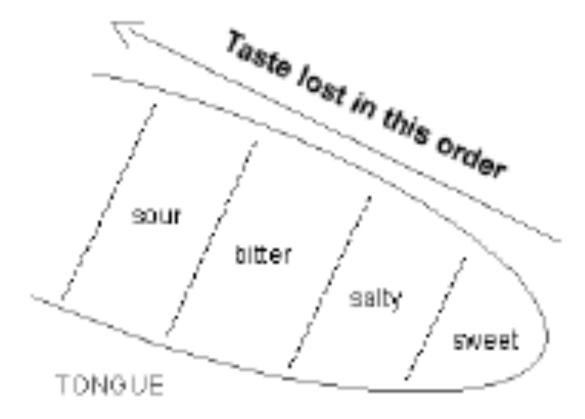
Dexterity difficulties may produce these behaviors:

- • Discontinue handwriting—letters, etc.
- Difficulties in such daily activities as grasping, opening heavy doors, manipulating
- buttons and zippers, lacing shoes
- Spilling

- Position items for ease in reaching or use magnetic latches or take cabinet doors off.
- Change door knobs to handles.
- • Allow/encourage more time
- • Encourage independence

Taste Changes:

- • Taste buds decline with age flavor identification
- • Taste buds decline to 1/6 of 20 year old by late 70's
- Gum disease poor teeth; periodontal disease reduce appetite



Taste difficulties may produce these behaviors:

- Loss/increased appetite stop because no taste; increase to achieve some taste; weight
- gain/loss
- Statements about food complaints about bitter or sour flavors
- Questions mistaken identity of foods
- • Tongue coating
- • Excessive seasoning increase sugar and salt

- Attractive food presentation increases person's willingness to eat
- • Separate food rather than mixing food on plate
- • Vary texture
- • Good dental care
- Taste parties to teach using vision and smell to identify foods; to increase social
- enjoyment associated with food

Smell Changes:

- By age 80, about 40 percent of people have difficulty in identifying common substances
- by smell

Smelling difficulties may produce these behaviors:

- • Not reacting to unpleasant odors
- Nasal congestion
- Comments "Can't smell the flowers"
- Increased body odor or over use of fragrance

- • Encourage smelling before feeding
- • Explain what foods are and encourage thinking of smell
- • Label items that look alike

Balance Changes:

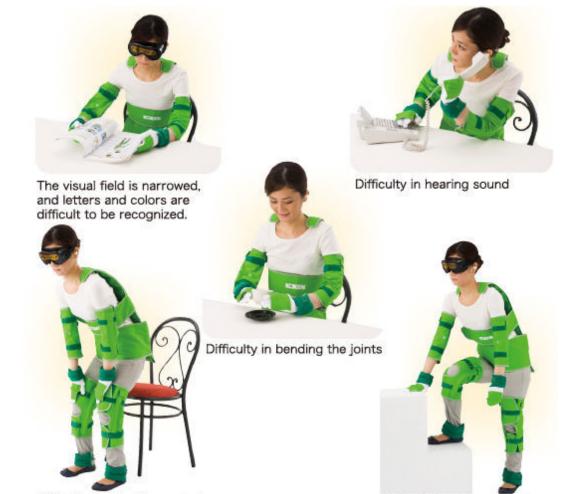
- • Slowing of body movements
- • Dizziness may occur
- • Stiffening of body joints
- Medication

Balance difficulties may produce these behaviors:

- • Poor posture tilt forward
- • Dizziness
- Holding to immobile objects or wall when walking
- • Shuffling gait

- • Support on side which needs support
- • Assist in standing use body as lever
- • Teach person to grasp you for support
- • Check for hazards carpet edges, lamps, cords, etc.
- • Provide handrails on walls, etc.
- • Patience

Aging Simulation



Difficulty in standing up and sitting in a chair, and in using the bathroom

Difficulty in going up and down the stairs

Aging Simulation





Genworth R70 Age Simulation Suit





Question Yourself

- What happened while you were out there?
- Did you experience any difficulties?
- Describe your feelings about this experience.
- What changes did you observe? about yourself? about other participants? about other people responding to you?
- Does the experience stimulate thoughts about the reactions and behaviours of older individuals who have some form of impairment?
- Does the experience suggest changes in your feelings or behaviour towards aged individuals?