

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.

Actions you may take:

- • 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 tie 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)

Actions you may take:

- • 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

Actions you may take:

- • 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

Actions you may take:

- • 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

Actions you may take:

- • 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

Actions you may take:

- • 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



The visual field is narrowed, and letters and colors are difficult to be recognized.



Difficulty in hearing sound



Difficulty in bending the joints



Difficulty in going up and down the stairs

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

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?