Socioeconomic status (SES) is often measured as a combination of education, income and occupation. It is commonly conceptualized as the social standing or class of an individual or group. When viewed through a social class lens, privilege, power and control are emphasized. Furthermore, an examination of SES as a gradient or continuous variable reveals inequities in access to and distribution of resources. SES is relevant to all realms of behavioral and social science, including research, practice, education and advocacy.

SES affects overall human functioning, including our physical and mental health. Its effects can be observed across the life span. Variance in socioeconomic status such as disparities in the distribution of wealth, income and access to resources mitigate social problems that ultimately affect everyone. All benefit from an increased focus on the foundations of socioeconomic inequalities and efforts to reduce the deep gaps in socioeconomic status observed today in the United States and abroad.

While older and retired U.S. residents may enjoy a higher standard of living than their predecessors, older Americans remain among the most economically vulnerable groups. Of major concern is whether older Americans will outlive their financial resources. Psychologists and other social and behavioral science professionals possess the tools necessary to study and identify strategies to alleviate these disparities at both individual and societal levels.

SES Impacts the Lives of Older Adults

The United States is facing unprecedented increases in the older adult population. Americans age 65 and over comprise nearly 13 percent of the U.S. population, and their proportion is estimated to increase to 20 percent of the population in the next 25 years. As the percentage of older Americans rises, so does concern for their economic stability. SES is a key factor in determining the quality of life of older Americans, nearly 10 percent of whom live below official poverty thresholds (U.S. Census Bureau, 2006). Declines in health and the death of a spouse, common among older adults, are factors that can affect financial standing and other aspects of SES. As a large proportion of the U.S. population approaches retirement, greater demand is placed on Social Security, and cuts in these benefits are anticipated. These circumstances place low-income older Americans at a serious disadvantage, as they are more likely to rely on Social Security as their main source of income.

Retirement and Income

The majority of older adults do not work and/or have fewer options for continued income. They are at risk for rising costs of living, which may place them at an economic disadvantage and potentially at lower levels of SES.

- About 86 percent of older adults with income receive Social Security income (U.S. Census Bureau, 2006). For 21 percent of these older adults, Social Security is their sole source of income (Social Security Administration, 2006).
- By 2030, it is projected that 25 percent of older persons will be from ethnic minority groups. Up to 23 percent of older African Americans and 19 percent of older Hispanics live in poverty (Fleck, 2008) compared with the estimated 8.9 percent older White Americans who live in poverty (American Psychological Association Task Force on Socioeconomic Status, 2006).
- Regardless of race, older women are more likely to be poor. Recent data reveal that women age 65 and older are nearly twice as likely to be poor compared to older men (Lee & Shaw, 2008).
- Older individuals in the highest wealth decile can attribute the majority of their wealth to pensions, housing and other assets, which are generally absent among those of lower SES (Butrica, Toder, & Toohey, 2008).

Health and Economic Status

Recent studies indicate that the quality of care afforded to older adults with medical conditions is substandard (Wenger et al., 2004). Furthermore, older adults who work are less likely to maintain employment as their health declines.

- About one in 10 persons age 50 and older who report that a disability has reduced or eliminated their ability to work are assisted by Social Security Disability Insurance (Fleck, 2008).
- In 2002, 20 percent of health care costs for persons 65 years and older were not covered by Medicare, the federal program for older adults and/or disabled persons who qualify for Social Security (APA, 2005).
- Older individuals of lower SES have increased mortality rates (Bassuk, Berkman, & Amick, 2002), higher stroke incidence (Avendano, et al., 2006), higher incidence of progressive chronic kidney disease (Merkin et al., 2007), lower health-related quality of life (Huguet, Kaplan, & Feeny, 2008), smaller social networks and lower quality of social relations.
- Older individuals of lower SES have been found to be exposed to substandard prescription practices, such as receiving excessive amounts of prescription drugs for the same ailment and being prescribed combinations of drugs that may lead to potentially harmful interactions (Odubanjo, Bennett, and Feely, 2004).

Psychological Health and Well-Being

SES has been found to affect the psychological health of aging individuals. Poverty is considered a risk factor for declines in mental health among older people. Those at the lower levels of socioeconomic status are often most likely to be afflicted with a psychological disorder.

- Of older adults, 20–25 percent may meet criteria for some form of psychological disorder (Administration on Aging, 2001). An estimated 15 million older adults will experience mental health problems by the year 2030 (APA, 2004).
- Older persons with less than a high school education are at greater risk for depression (APA, 2003).
- Low educational achievement has consistently been associated with a higher incidence of Alzheimer’s disease later in life. Blue collar work has also been associated with Alzheimer’s and dementia. (Fratiglioni, Winblad, & von Strauss, 2007; Karp et al., 2004; Fratiglioni & Rocca, 2001).
- Although good social networks have been shown to buffer stress (Krause, 2001), older persons living in poor neighborhoods are more likely to have underdeveloped (Feldman & Steptoe, 2004) and poorly integrated social networks (Black & Rubinstein, 2000).
PHYSICAL / PHYSIOLOGICAL / BIOLOGICAL CHANGES IN THE OLDER PERSON AND THEIR IMPLICATIONS TO CARE

Age-Associated Cardiovascular Changes
A. Definition(s): Isolated systolic hypertension: systolic BP >140 mm Hg and diastolic BP <90 mm Hg.
B. Etiology
   1. Arterial wall thickening and stiffening, decreased compliance.
   2. Left ventricular and atrial hypertrophy. Sclerosis of atrial and mitral valves.
   3. Strong arterial pulses, diminished peripheral pulses, cool extremities.
C. Implications
   1. Decreased cardiac reserve.
      a. At rest: No change in heart rate, cardiac output.
      b. Under physiological stress and exercise: Decreased maximal heart rate and cardiac output, resulting in fatigue, shortness of breath, slow recovery from tachycardia.
      c. Risk of isolated systolic hypertension; inflamed varicosities.
      d. Risk of arrhythmias, postural and diuretic-induced hypotension. May cause syncope.
D. Parameters of Cardiovascular Assessment
   1. Cardiac assessment: ECG; heart rate, rhythm, murmurs, heart sounds (S4 common, S3 in disease). Palpate carotid artery & peripheral pulses for symmetry.
   2. Assess BP (lying, sitting, standing) and pulse pressure.

Age-Associated Changes in the Pulmonary System
A. Etiology
   1. Decreased respiratory muscle strength; stiffer chest wall with reduced compliance.
   2. Diminished ciliary & macrophage activity, drier mucus membranes. Decreased cough reflex.
   3. Decreased response to hypoxia and hypercapnia.
B. Implications
   1. Reduced pulmonary functional reserve.
      a. At rest: No change.
      b. With exertion: Dyspnea, decreased exercise tolerance.
   2. Decreased respiratory excursion and chest/lung expansion with less effective exhalation. Respiratory rate 12-24 breaths per minute.
   3. Decreased cough and mucus/foreign matter clearance.
   4. Increased risk of infection and bronchospasm with airway obstruction.
C. Parameters of Pulmonary Assessment
   1. Assess respiration rate, rhythm, regularity, volume, depth, and exercise capacity. Auscultate breath sounds throughout lung fields
   2. Inspect thorax appearance, symmetry of chest expansion. Obtain smoking history.
   3. Monitor secretions, breathing rate during sedation, positioning, arterial blood gases, pulse oximetry
   4. Assess cough, need for suctioning.
D. Nursing-Care Strategies
   1. Maintain patient airways through upright positioning/repositioning, suctioning
   2. Provide oxygen as needed; maintain hydration and mobility.
   3. Incentive spirometry as indicated, particularly if immobile or declining in function.
   4. Education on cough enhancement, smoking cessation.

Age-Associated Changes in the Renal and Genitourinary Systems
A. Definition(s): To determine renal function (GFR):
   Cockroft-Gault equation: Calculation of creatinine clearance in older adults:
   For Men
   \[
   \text{Creatinine clearance (ml/min)} = \left(\frac{140 - \text{age in years}}{72}\right) \times \text{body weight in kg} \times \frac{\text{serum creatinine, mg/dL}}{85%}
   \]
   For Women, the calculated value is multiplied by 85% (0.85).
B. Etiology
   1. Decreases in kidney mass, blood flow, GFR (10% decrement/decade after age 30). Decreased drug clearance.
   2. Reduced bladder elasticity, muscle tone, capacity.
   3. Increased postvoid residual, nocturnal urine production.
   4. In males, prostate enlargement with risk of BPH.
C. Implications
   1. Reduced renal functional reserve; risk of renal complications in illness.
   2. Risk of nephrotoxic injury and adverse reactions from drugs.
   3. Risk of volume overload (in heart failure), dehydration, hyponatremia (with thiazide diuretics), hypernatremia (associated with fever), hyperkalemia (with potassium-sparing diuretics). Reduced excretion of acid load.
4. Increased risk of urinary urgency, incontinence (not a normal finding), urinary tract infection, nocturnal polyuria. Potential for falls.

D. Parameters of Renal and Genitourinary Assessment
A. Assess renal function (GFR through creatinine clearance)
B. Assess choice/need/dose of nephrotoxic agents and renally cleared drugs.
C. Assess for fluid/electrolyte and acid/base imbalances.
D. Evaluate nocturnal polyuria, urinary incontinence, BPH. Assess UTI symptoms.
E. Assess fall risk if nocturnal or urgent voiding

E. Nursing-Care Strategies
A. Monitor nephrotoxic and renally cleared drug levels.
B. Maintain fluid/electrolyte balance. Minimum 1,500–2,500 mL/day from fluids and foods for 50- to 80-kg adults to prevent dehydration.
C. For nocturnal polyuria: limit fluids in evening, avoid caffeine, use prompted voiding schedule.
D. Fall prevention for nocturnal or urgent voiding

**Age-Associated Changes in the Oropharyngeal and Gastrointestinal Systems**

A. Definition(s):
BMI: Healthy, 18.5–24.9 kg/m²; overweight: 25–29.9 kg/m²; obesity, 30 kg/m² or greater.

B. Etiology
1. Decreases in strength of muscles of mastication, taste, and thirst perception.
2. Decreased gastric motility with delayed emptying.
3. Atrophy of protective mucosa.
5. Impaired sensation to defecate.
6. Reduced hepatic reserve. Decreased metabolism of drugs.

C. Implications
1. Risk of chewing impairment, fluid/electrolyte imbalances, poor nutrition.
2. Gastric changes: altered drug absorption, increased risk of GERD, maldigestion, NSAID-induced ulcers.

D. Parameters of Oropharyngeal and Gastrointestinal Assessment
1. Assess abdomen, bowel sounds.
2. Assess oral cavity; chewing and swallowing capacity, dysphagia (coughing, choking with food/fluid intake). If aspiration, assess lungs (rales) for infection and typical/atypical symptoms
3. Monitor weight, calculate BMI, compare to standards. Determine dietary intake, compare to nutritional guidelines.
4. Assess for GERD; constipation and fecal incontinence; fecal impaction by digital examination of rectum or palpation of abdomen.

E. Nursing-Care Strategies
1. Monitor drug levels and liver function tests if on medications metabolized by liver. Assess nutritional indicators.
2. Educate on lifestyle modifications and over-the-counter (OTC) medications for GERD.
3. Educate on normal bowel frequency, diet, exercise, recommended laxatives. Encourage mobility, provide laxatives if on constipating medications.
4. Encourage participation in community-based nutrition programs; educate on healthful diets.

**Age-Associated Changes in the Musculoskeletal System**

A. Definition(s):
Sarcopenia: Decline in muscle mass and strength associated with aging.

B. Etiology
1. Sarcopenia with increased weakness and poor exercise tolerance.
2. Lean body mass replaced by fat with redistribution of fat.
3. Bone loss in women and men after peak mass at 30 to 35 years.

C. Implications
1. Sarcopenia: increased risk of disability, falls, unstable gait.
2. Risk of osteopenia and osteoporosis.
3. Limited ROM, joint instability, risk of osteoarthritis.

D. Nursing-Care Strategies
1. Encourage physical activity through health education and goal setting to maintain function.
2. Pain medication to enhance functionality. Implement strategies to prevent falls
3. Prevent osteoporosis by adequate daily intake of calcium and vitamin D, physical exercise, smoking cessation. Advise routine bone-mineral density screening.

**Age-Associated Changes in the Nervous System and Cognition**

A. Etiology
1. Decrease in neurons and neurotransmitters.
2. Modifications in cerebral dendrites, glial support cells, synapses.
3. Compromised thermoregulation.

B. Implications
1. Impairments in general muscle strength; deep-tendon reflexes; nerve conduction velocity. Slowed motor skills and potential deficits in balance and coordination.
2. Decreased temperature sensitivity. Blunted or absent fever response.
3. Slowed speed of cognitive processing. Some cognitive decline is common but not universal. Most memory functions adequate for normal life.
4. Increased risk of sleep disorders, delirium, neurodegenerative diseases.

C. Parameters of Nervous System and Cognition Assessments
1. Assess, with periodic reassessment, baseline functional status. During acute illness, monitor functional status and delirium.
2. Evaluate, with periodic reassessment, baseline cognition and sleep disorders.
3. Assess impact of age-related changes on level of safety and attentiveness in daily tasks.
4. Assess temperature during illness or surgery

D. Nursing-Care Strategies
1. Institute fall prevention strategies
2. To maintain cognitive function, encourage lifestyle practices of regular physical exercise, intellectual stimulation, and healthful diet.
3. Recommend behavioral interventions for sleep disorders.

**Age-Associated Changes in the Immune System**
- Immune response dysfunction with increased susceptibility to infection, reduced efficacy of vaccination, chronic inflammatory state.

B. Nursing Care Strategies
1. Follow CDC immunization recommendations for pneumococcal infections, seasonal influenza, zoster, tetanus, hepatitis for the older adult.

**Atypical Presentation of Disease**
A. Etiology
1. Diseases especially infections may manifest with atypical symptoms in older adults.
2. Symptoms/signs often subtle include nonspecific declines in function or mental status, decreased appetite, incontinence, falls, fatigue, exacerbation of chronic illness.
3. Fever blunted or absent in very old, frail or malnourished adults. Baseline oral temperature in older adults is 97.4 °F (36.3 °C) versus 98.6 °F (37 °C) in younger adults.

B. Parameters of Disease Assessment
1. Note any change from baseline in function, mental status, behavior, appetite, chronic illness.
2. Assess fever; Determine baseline and monitor for changes; 2–2.4 °F (1.1–1.3 °C) above baseline. Oral temperatures above 99 °F (37.2 °C) or greater also indicate fever.
3. Note typical and atypical symptoms of pneumococcal pneumonia, tuberculosis, influenza, UTI, peritonitis, and GERD.

**Evaluation/Expected Outcomes (For All Systems)**
A. Older adult will experience successful aging through appropriate lifestyle practices and health care.
B. Health care provider will
1. Identify normative changes in aging and differentiate these from pathological processes.
2. Develop interventions to correct for adverse effects associated with aging.
C. Institution will
1. Develop programs to promote successful aging.
D. Will provide staff education on age-related changes in health.

**Sensory Changes**

The majority of older adults will experience some changes in their sensory capacity (vision, hearing, smell, taste and peripheral sensation) as a normal part of aging. Some sensory changes, for example changes in hearing, can severely impact an older person’s communication skills. This section on sensory changes addresses common changes seen with advancing age and the disease states and injury that occurs more frequently in aging and that impact the sensory system

*Vision
30% of those over age 65 have some level of visual impairment.
Cataracts are the 5th most common chronic condition in adults over age 75.
Definitions

Normal vision: Visual Acuity of 20/20 or better
Visually Impaired: Visual Acuity of 20/50 or worse
Legally Blind: Best corrected vision of 20/200 or worse
Totally Blind: No light perception

Vision Changes common in older adults

Presbyopia: A loss of elasticity in the lens of eye leading to a decrease in the eyes ability to change the shape of the lens to focus on near objects such as fine print and decreased ability to adapt to light.
Thickening of the lens with loss of elasticity
Decreased contrast sensitivity and delayed recovery from glare

Diseases that alter vision seen more frequently as people age

Cataracts: Clouding of the crystalline lens presents as painless, progressive loss of vision can be unilateral or bilateral.

Macular Degeneration: The most common cause of legal blindness in the elderly. The development of drusen deposits in the retinal pigmented epithelium leading cause of central vision loss in older adults. More common in fair haired blue eyed individuals. Other risk factors include smoking and excessive sunlight exposure. There are wet and dry forms of macular degeneration.

Glaucoma: A potentially serious form of eye disease. The majority of cases of glaucoma are Open angle glaucoma (95%). Increased intraocular pressure causing atrophy and cupping of the optic nerve head causing visual field deficits that can progress to blindness. Vision changes include loss of peripheral vision, intolerance to glare, decreased perception of contrast and decreased ability to adapt to the dark.

Diabetic Retinopathy: End organ damage from diabetes causing retinopathy and spotty vision. Risk can be reduced by tight blood sugar control. Starts as nonproliferative and progresses to proliferative that should be treated with laser photocoagulation.

Hypertensive Retinopathy: End organ damage from poorly controlled hypertension causing background and eventual proliferative retinopathy. Usually treated with laser photocoagulation and tight blood pressure control.

Temporal Arteritis: Autoimmune disorder that causes inflammation of the temporal artery. It presents as malaise, scalp tenderness, unilateral temporal headache, jaw claudication, and sudden vision loss (usually unilateral). This vision loss is a medical emergency but is potentially reversible if identified immediately. The client should see an ophthalmologist, or go to the emergency room immediately if symptoms develop.

Detached Retina: Can occur in patients with cataracts or recent cataract surgery, trauma or be spontaneous. Presents as a curtain coming down across vision. Should see an ophthalmologist or proceed to the emergency room immediately.

**Implication of Vision Change**

a) Impact on Safety:
   1) Inability to read medication lables
   2) Difficulty navigating stairs of curbs
   3) Difficulty driving
   4) Crossing streets

b) Impact on Quality of Life:
   a) Reduces ability to remain independent
   b) Difficulty or unable to read
   c) Falls

*Hearing*

Hearing loss is the 3rd leading chronic condition affecting adults over 75 years of age.

Definitions

Hearing Impaired:

Defined in Decibels (dB) or level of loudness
Mild hearing impairment 20 to 40 dB
Moderate 40 to 55 dB
Moderately severe 55 to 70 dB
Severe hearing impairment 70 to 90 dB
Greater than 90 dB is profound deafness, unable to hear sound

Hearing Changes common in older adults

Presbycusis: Loss of high frequency, sensorineural hearing loss. Has a gradual onset is progressive and is bilateral. Due to gradual loss of hair cells, and fibrous changes in the small blood vessels that supply the cochlea. Difficulty hearing high pitched sounds such as s, z, sh, and ch. Background noise further aggravates hearing deficit.

Conductive hearing loss: Involves the outer and or middle ear. Causes of conductive hearing impairment include: cerumen impactions or foreign bodies; ruptured eardrum, otitis media, and otosclerosis.
Sensorineural hearing loss: involves damage to the inner ear, the cochlea, or the fibers of the eighth cranial nerve. Causes of sensorineural hearing loss include: hereditary causes, viral or bacterial infections, trauma, tumors, noise exposure, cardiovascular conditions, ototoxic drugs and Meniere’s disease.

Diseases that alter hearing seen more frequently as people age
Central auditory processing disorder: An uncommon disorder that includes an inability to process incoming signals and is often found in stroke patients and older adults with Alzheimer Dementia. The person’s hearing is intact but their ability to process the sound is impaired.

Tinnitus: Ringing in the ears may fluctuate can be due to damage to the hair receptors of the cochlear nerve and age related changes in the organs of hearing and balance. Patients with tinnitus should be referred to ENT

Meniere’s Disease: characterized by fluctuating hearing loss, dizziness and tinnitus. Possible causes of Meniere’s disease include: hypothyroidism, diabetes and neurosyphilis.

**Implications of Hearing Changes**
Impact on quality of life
Impairs ability to communicate with others: a) Adds to social isolation
b) Leads to depression or low self-esteem

Safety issues
1) Unable to hear instructions, such as how to take medications,
2) Unable to hear car coming when crossing the road, horns honking
3) Unable to hear phone or doorbell ringing or knocking at the door (if emergency occurs may be unaware)

*Smell and Taste*
The sense of smell and ability to identify odors decreases due to normal changes in aging. This can be problematic for safety reasons. An inability to smell smoke for instance could put an older adult at risk.

Changes in smell and taste common to older adults
Common changes in smell include a decline in the sensitivity to airborne chemical stimuli with aging. Common changes in taste include a decreased ability to detect foods that are sweet. Most changes in taste are thought to occur due to decreased sense of smell, medications, diseases and tobacco use.

Diseases that alter smell and taste seen more frequently as people age
 Burning Mouth Syndrome: This is a sensation that one's tongue is tingling or burning. There may be several contributing factors: Vitamin B deficiencies, local trauma, gastrointestinal disorders causing reflux, allergies, salivary dysfunction and diabetes.

**Implications of Taste and Smell Changes**
A) Inability to smell
1) Effects quality of life -- Scents such as smell of Christmas tree, flowers or coffee brewing may not be detectable.
2) Diminished taste of favorite foods or beverages.
    Nutritional decline - inability to smell food aromas may reduce nutritional intake
3) Safety hazard -- inability to smell smoke in a fire or a gas leak.
B) Decreased sense of taste
1) May result in inability to recognize spoiled food resulting in nausea, vomiting or infectious diarrhea.

*Peripheral Sensation*
Peripheral neuropathy is one of the most common neurological disorders encountered in a general medical practice with estimates of 2% to 7% of all patient populations having symptoms of neuropathy (Smith and Singleton, 2004). An assessment of 894 participants in the Women’s Health and Aging Study indicated that 58% of women showed evidence of neuropathy by age 65 (Vinik, 2004).

Changes in peripheral sensation common to older adults
Peripheral nerve function that controls the sense of touch declines slightly with age. Two-point discrimination and vibratory sense both decrease with age. The ability to perceive painful stimuli is preserved in aging. However, there may be a slowed reaction time for pulling away from painful stimuli with aging.

Diseases that alter peripheral sensation seen more frequently as people age
Peripheral neuropathy: Nerve pain in the distal extremities related to nerve damage from circulatory problems or vitamin deficiencies. Common vitamin deficiencies which impact peripheral nerves include B 6, B 12 and Folate.

Diabetic neuropathy: End organ damage to the peripheral nerves from microvascular changes which occur with diabetes. Often leads to loss of sensation in the feet of diabetics leading to undetected trauma to the extremities which can lead to refractory infections due to poor vascular supply to the extremity. It is extremely important to teach diabetics and patients with peripheral neuropathy to provide special care to their feet.
**Implications of Peripheral Sensation Changes**

1) Falls - due to inability to recognize position sense or inability to ascertain where feet are on floor.
2) Calluses or serious foot lesions.

**Nursing Assessment and Care Strategies**

The Individualized Sensory Enhancement of the Elderly (I-SEE) program was developed to tailor nursing interventions to the type and level of sensory impairment experienced by the older adult. There are three levels to the I-SEE program (nursing assessments, nursing actions, and nursing referrals)

**ASSESSMENT**

**History**
1. Ask questions about changes in hearing, vision sense of smell and taste as well as any numbness and tingling in extremities.
2. Determine if symptoms occurred suddenly or gradually.
3. Clarify if symptoms are unilateral or bilateral.
4. Inquire whether any prior treatment for sensory conditions.
5. Ascertain if sensory conditions interfere with their daily function.
6. Be sure to ask about ability to drive. Driving can be affected by vision, hearing and peripheral nervous systems.
7. Determine interest in receiving treatment for these conditions.

**Physical exam**
1. Inspect the external structures of the eyes and ears, examine ear canal for cerumen using otoscope.
2. Check visual acuity with a near vision screener and distance acuity measure.
3. Perform whisper test to assess rough hearing.
4. If available in your setting, use a hand held audioscope to assess up to 40 dB hearing. If a greater range of hearing testing is needed use a portable audiometer with noise reduction earphones.
5. Assess vibratory sense of the extremities with a tuning fork.
6. Complete a monofilament test on all diabetics. This test quantifies the level of sensory impairment in the feet of diabetic patients.

**NURSING CARE STRATEGIES**

**Vision**
- a) Avoid disruption in the management of chronic eye conditions by obtaining past history and assuring continuation of ongoing regimens such as eye drops for glaucoma.
- b) Notify the primary care provider of any acute change in vision.
- c) Encourage the use of good lighting in patient rooms. Avoid glare whenever possible.
- d) Encourage the use of the patient’s eyeglasses. Have family provide lighted magnification if needed (these are the large magnifiers with a light attached. You can get them at low vision centers).
- e) Add contrast to the fixtures in the room if light switches blend into the wall or faucets blend into the sink.
- f) Encourage annual eye exams either with an Optometrist or Ophthalmologist.
- g) Annual dilated exam for patients with diabetes and hypertension by ophthalmologist

**Hearing**
- a) Assess for cerumen impactions. Request cerumen softening drops followed by irrigation (if needed) or ENT consultation.
- b) Get the person's attention and face them before speaking to assist the individual with lip reading, a common compensatory mechanism for older adults.
- c) Have at least one Pocket amplifier on the nursing unit to use with hard of hearing individuals.
- d) Do not shout at people with hearing impairments, but rather use lower tones of your voice.
- e) Provide written instructions (use large black marker if person also is visually impaired).
- f) Assure appropriate care for hearing aids: remove batteries out at night; use brush provided to gently clean the tubes to reduce wax accumulation. Before sending bed linens or clothing to the laundry make sure the patient has hearing aid is in their ear or in their designated location (bedside table or medication cart)
- g) Notify the primary care provider of any sudden change in hearing.
- h) Referral to audiologist and/or ENT as indicated.

**Taste and Smell**
- a) Take all complaints of inability or decreased ability to smell or taste seriously.
- b) If this is an abrupt change in taste or smell notify primary care provider. Patient may need an ENT referral.
- c) Patient teaching should focus on safety issues with odors of gas and spoiled food. Educate seniors to have carbon monoxide detectors in their home and to evaluate food with other methods other than sense of smell and taste.

**Peripheral Sensation**
- a) Examine feet daily and inform primary provider if lesions, calluses or red areas.
- b) Clean and thoroughly dry feet prior to applying lotion.
c) Ensure or have family bring in adequate foot wear that protects the individual's feet. Most medical supply places carry diabetic healing shoes that have wide toe boxes and Velcro closed often under $50.
d) Refer diabetics to facilities with Certified Diabetes Educator.
e) Implement fall precautions and initiate referral to physical therapy for diabetics with peripheral neuropathy.
f) Refer older adults with decreased sensation to a podiatrist for ongoing foot care.

Expected Outcomes
1. Baseline visual acuity and hearing acuity for all older patients will be performed prior to discharge from the hospital, home care or nursing home.
2. Evidence of fall precautions for all older patients with sensory impairments.
3. Avoidance of falls and injuries to extremities with decreased sensation of lower extremities.
4. Avoidance of accidental exposure to toxins either in the air or in food due to decreased sense of smell or taste.

Follow-up monitoring
1. Annual vision assessment- Medicaid in most states will pay for a new pair of eye glasses every two years.
2. Referral to low vision specialists to train older adults and their families in the use of visual assistive devices.
3. Audiology evaluation for hearing impaired older adults every two years. Some states pay for one hearing aid under limited conditions.
4. Evidence of encouragement of use of hearing aid in hearing impaired.
5. Referral to audiologists to train older adults and their families in the use of hearing assistive devices.
6. Referral to Dentist or ENT for abrupt changes in smell or taste.
7. Referral to a dentist if xerostomia (severe dry mouth) is suspected.
8. Podiatric referral for older persons with altered peripheral sensation.

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**CHRONIC DISEASES/ILLNESSES**
- Chronic diseases are the major cause of death and disability worldwide.
- Chronic diseases will take the lives of over 35 million people in 2005, including many young people and those in middle age.
- The total number of people dying from chronic diseases is double that of all infectious diseases (including HIV/AIDS, tuberculosis and malaria), maternal and perinatal conditions, and nutritional deficiencies combined. 80% of chronic disease deaths occur in low and middle income countries and half are in women.
- Without action to address the causes, deaths from chronic disease will increase by 17% between 2005 and 2015.

**What are chronic diseases?**
- cardiovascular diseases, mainly heart disease and stroke;
- cancer;
- chronic respiratory diseases;
- diabetes;
- others, such as mental disorders, vision and hearing impairment, oral diseases, bone and joint disorders, and genetic disorders.

**What causes chronic diseases?**

The causes (risk factors) of chronic diseases are well established and well known; a small set of common risk factors are responsible for most of the main chronic diseases. These risk factors are modifiable and the same in men and women:
- unhealthy diet;
- physical inactivity;
- tobacco use.

These causes are expressed through the intermediate risk factors of raised blood pressure, raised glucose levels, abnormal blood lipids, overweight and obesity. The major modifiable risk factors, in conjunction with the non-modifiable risk factors of age and heredity, explain the majority of new events of heart disease, stroke, chronic respiratory diseases and some important cancers.

The relationship between the major modifiable risk factors and the main chronic diseases is similar in all regions of the world. Many more risk factors for chronic diseases have been identified, but they account for a smaller proportion of disease. Harmful alcohol use is an important contributor to the global burden of disease but its relationship to chronic disease is more complex. Other risk factors for chronic disease include infectious agents that are responsible for cervical and liver cancers, and some environmental factors, such as air pollution, which contribute to a range of chronic diseases including asthma and other chronic respiratory diseases. Psychosocial and genetic factors also play a role.

**Childhood risk:** There is now extensive evidence from many countries that conditions before birth and in early childhood influence health in adult life. For example, low birth weight is now known to be associated with increased rates of high blood pressure, heart disease, stroke and diabetes.

**Risk accumulation:** Ageing is an important marker of the accumulation of modifiable risks for chronic disease: the impact of risk factors increases over the life course.

**Underlying determinants:** The underlying determinants of chronic diseases are a reflection of the major forces driving social, economic and cultural change – globalization, urbanization, population ageing, and the general policy environment.

**Poverty:** Chronic diseases and poverty are interconnected in a vicious circle. At the same time, poverty and worsening of already existing poverty are caused by chronic diseases. The poor are more vulnerable for several reasons, including greater...
exposure to risks and decreased access to health services. Psychosocial stress also plays a role.

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