

## ASSESSMENT DATA FOR COMMON AGE-RELATED CHANGES

### 1. SENSORY

#### **Vision:**

- Decreased size of pupils and speed in adjusting to light changes
- Increased visual threshold (more light needed to stimulate visual receptors)
- Decreased visual acuity
- Lens more rigid (decreased accommodation to near and far vision; presbyopia)
- “Yellow filter effect” of lens distorts color perception
- Decreased peripheral vision
- Arcus senilis (gray-white color around cornea)

#### **Hearing:**

- Presbycusis (decreased perception of high tones)
- Increased accumulation of ear wax
- Tympanic membrane thickens and is more rigid
- Deterioration of hair cells (auditory receptors) in cochlea
- Decreased number of functioning neurons
- Ossicles degenerate and stiffen
- Decreased blood supply to cochlea

#### **Taste and Smell**

- Decrease in taste buds (loss of 64 percent by 75 years)
- Higher taste threshold in functioning taste buds
- Decreased number of olfactory neurons
- Olfactory acuity decreased to 80 percent by 65 years

#### **Vestibular and Kinesthetic Senses**

- Decrease in receptors for balance and equilibrium in semicircular canals
- Decrease in receptors for joint movement and body position in muscles and tendons
- Higher threshold for vestibular and kinesthetic stimulation

### 2. CARDIOVASCULAR SYSTEM

- Increased fatty tissue in heart
- Decreased compliance of heart muscle
- Increased rigidity and thickening of heart valves
- Thickening and decreased elasticity of vessel walls
- Decreased vascular compliance
- Decreased stroke volume
- Decreased cardiac output (50 percent by 80 years)
- Increased circulation time (15 seconds in young adult; 27 sec. in 70 year)

### 3. RESPIRATORY SYSTEM

- Decreased rib cage expansion due to skeletal changes (calcification of costal cartilages, kyphosis, scoliosis, vertebral changes)
- Decreased inhalation and exhalation movements due to weakened and atrophied thoracic muscles
- decreased elasticity of lungs
- Increased residual volume
- Decreased vital capacity
- Decreased diffusion
- Decreased number of alveoli and pulmonary capillaries

### 4. GASTROINTESTINAL SYSTEM

- Decreased saliva and number of taste buds
- Decreased secretion of digestive juices
- Decreased motility and sphincter tone
- Decreased number of absorption cells
- Decreased hepatic blood flow
- Increased amount body fat
- Decreased muscle tone of intestines and abdominal muscles
- Degeneration of gastric mucosa decreased metabolic rate
- Malabsorption of calcium, iron, Vitamin B<sub>12</sub>

## **5. URINARY SYSTEM**

- Decreased number of nephrons
- Decreased blood supply to kidney
- Decreased ability to concentrate urine
- Decreased secretion of ADH
- Increased plasma urea and uric acid
- Decreased neuromuscular stimulation of bladder
- Decreased bladder capacity

## **6. REPRODUCTION SYSTEM**

- Gradual decline in gonadal secretion
- Gradual atrophy of ovarian, uterine, and vaginal tissues
- Decreased vaginal lubrication
- More alkaline vaginal secretions
- Muscle and glandular tone diminished skin is less elastic, resulting in loss of firmness of breast tissue
- Smaller testes
- Enlarged prostate
- Decrease in volume and viscosity of seminal fluid
- Reduction in force of ejaculation
- Longer time needed to achieve erection

## **7. NEUROLOGICAL SYSTEM**

- Decrease in weight of brain
- Decreased in blood supply to brain
- Loss of neurons
- Increased size of ventricles
- Decreased neurotransmitters
- Decreased nerve conduction
- Diminished tendon reflex responses
- Impaired thermoregulatory reflexes
- Decreased period of deep sleep

## **8. ENDOCRINE SYSTEM**

- Decreased tissue response to hormones
- Decreased responsive

- Decreased secretion of aldosterone by the adrenals resulting in decreased sodium reabsorption
- Decreased insulin synthesis
- Decreased secretion of thyroxin

## **9. MUSCULOSKELETAL SYSTEM**

- Decrease in bone mass
- Thinning of intervertebral discs
- Calcification within cartilage and ligament
- Decreased elasticity of tendons and muscles
- Decrease in muscle mass, tone, and strength
- Ankylosis of ligaments and joints
- Loss of stature and change in bodily configuration (head and neck held forward, knees flexed)
- Progressive changes in gait

## **10. INTEGUMENTARY**

### **Hair:**

- Graying
- Thinning
- Reduction in hair shaft diameter
- Scanty leg hair
- Eyebrow, ear, and nasal hair coarser and longer
- Coarse facial hair in women

### **Skin:**

- Thinning epithelium (increased visibility of blood vessels)
- Progressive atrophy of sebaceous glands
- Lentigo senilus (benign hyperpigmentation or brown spots on dorsum of hands)
- Decreased subcutaneous fat causing loss of elasticity (skin wrinkles, turgor decreases)
- Reduced blood flow to skin and Increased fragility of capillaries (paler color, red blotches)
- Senile keratosis