

Age related change

Ebersole , 2004

Body System	Physiologic Changes	Expected Signs or Symptoms
Skin	<ul style="list-style-type: none"> • Loss of subcutaneous tissue and thinning of dermis 	<ul style="list-style-type: none"> • Underlying tissue more fragile; inability to respond to heat or cold quickly; proneness to heat stroke; loss of moisture; wrinkling
Sensory	<ul style="list-style-type: none"> • Loss of lid elasticity • Ocular changes in cornea, iris, pupil, lens • Auditory canal narrows • Calcification of ossicles • Changes in organ of Corti • Olfactory bulb and cells decrease 	<ul style="list-style-type: none"> • Eyelids drop or turn inward • Increased astigmatism; need for more light; glare problematic; need for eye-glasses • Cataracts • Increased cerumen • Hearing loss • Impaired sound transmission, tinnitus • Inability to discriminate odors

Cardiovascular

- Decreased stress response
- Stiffer valves
- Conductivity altered
- Vessels less elastic

- Diminished cardiac output
- Diastolic murmurs
- More ectopic beats; less ability to respond to changes in blood pressure
- Poorer perfusion to vital organs with resulting hypoxia; varicosities; peripheral pulses not always palpable

Pulmonary

- Enlargement and rigidity of chest wall
- Airway collapse

- Poorer expansion with less efficient exchange; shallower breathing; less effective cough
- Oxygen exchange less efficient especially under stress

Neurologic

- Diminished stage 3–4 (deep) sleep
 - Decreased proprioception
 - Altered pain sensation
 - Tactile sense decreases
 - Sleep disorders, especially in different environments (hospital)
- Difficulty in changing position or achieving balance
 - Decreased perception of pain
 - Loss of sensation in extremities

Immune

- Decrease in thymus mass and production
 - Increase in immunoglobulins
- Decline in cell-mediated immunity; reactivation of disease (tuberculosis, herpes)
 - Autoimmune response not associated with disease

Gastrointestinal

- Increase in occurrence of hiatal hernia and decrease in intraabdominal strength
 - Reduced gastric acid
 - Slower neural transmission
 - Weakening of intestinal walls
- Reflux
 - Peptic ulcers
 - Vitamin deficiency
 - Constipation and incontinence
 - Diverticulosis

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Renal	<ul style="list-style-type: none">• Decrease in blood flow, glomeruli, renin, and filtration	<ul style="list-style-type: none">• Increased creatinine clearance; loss of ability to concentrate urine and conserve water; poor response to stress
Musculoskeletal	<ul style="list-style-type: none">• Shrinking vertebral discs, loss of bone mass• Muscle atrophy	<ul style="list-style-type: none">• Loss of height by 1.5 to 3 in.; fracture more common• Decrease in strength and stamina; atrophy

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Endocrine

- Loss of sensitivity to insulin
- Diminished sex hormones
- Blood glucose does not return to normal as quickly
- Benign prostatic hyperplasia; testicular firmness; vaginal dryness and atrophy; longer time to orgasm

Ebersole P. Age-related changes. In: Ebersole P, et al., editors. *Toward healthy aging. Human needs and nursing responses*. Philadelphia: Mosby, 2004. p. 74-80.