

Physiologic change	Pathologic change	Clinical significance
Thinning of epidermis and dermis	Increased vulnerability to mechanical trauma, especially shearing and friction	Increased incidence of skin tears
Flattening of dermal papillae	Increased risk of blister formation	Increased susceptibility to infection
Slowdown in turnover rate of epidermis; decrease in ratio of proliferative-to-differentiated keratinocytes	Delayed cellular migration and proliferation.	Increased time to re-epithelialization.
	Decreased wound contraction	Longer healing times after injury or surgery
Decrease in elastin fibres	Loss of elasticity	Lax skin and wrinkling, with loss of self-esteem and/or depression
Decrease in vascularity and supporting structures in dermis	Fragile, easily broken blood vessels.	Skin easily bruised (senile purpura)
	Decreased wound capillary growth	Increased risk of wound dehiscence
Decrease in vascular plexus, blunted capillary loops	Loss of thermoregulatory ability	Hypothermia, heat stroke
Changes in and loss of collagen and elastin fibres	Decreased tensile strength, lower layers more susceptible to injury	Increased risk of pressure damage to elderly skin, decubitus ulcers
	Delayed collagen remodeling	Longer healing times after injury or surgery
Impaired immune response	Impaired inflammatory response	Impaired wound healing
	Impaired delayed hypersensitivity reaction	Increased risk of severe injury from irritants
	Decreased production of cytokines	Impaired immune function
	Decrease in number of Langerhans cells	Increased susceptibility to photocarcinogenesis, false-negative delayed hypersensitivity tests
Impaired neurologic responses	Reduced sensation	Increased risk of thermal or other accidental injury
Decreased skin thickness	Loss of cushioning and support	Increased risk of pressure damage, decubitus ulcers Increased susceptibility to skin tears, bruising
	Decreased vitamin D precursor production	Osteoporosis and bone fractures
Atrophy of sweat glands	Decreased sweating	Less ability to thermoregulate, hypothermia Dry skin, xerosis
Reduced stratum corneum lipids	Decreased ability to retain water	Variable response to topical medications, altered sensitivity to irritants
Structural changes in stratum corneum	Altered barrier function	Variable response to topical medications, altered sensitivity to irritants
Reduced movement of water from dermis to epidermis	Reduced epidermal hydration	Dry skin, xerosis
Decrease in melanocytes	Loss of ability to tan, greater susceptibility to solar radiation	Cutaneous neoplasms
	Greying hair	Loss of self-esteem

Copied from Farage et al (2009)⁽⁹⁾