

How Aging Changes the Skin

Definition

Aging changes in the skin are a group of common conditions and developments that occur as people grow older.

Information

Skin changes are among the most visible signs of aging. Evidence of increasing age include wrinkles and sagging skin, along with the obvious graying of the hair.

Your skin does many things. It protects you from the environment, helps regulate your body temperature, helps with fluid and electrolyte balance, and provides receptors for sensations such as touch, pain, and pressure.

Although skin has many layers, it can be generally divided into three main portions. The outer portion (epidermis) contains skin cells, pigment, and proteins. The middle portion (dermis) contains blood vessels, nerves, hair follicles, and oil glands. The dermis provides nutrients to the epidermis.

The layer under the dermis (the subcutaneous layer) contains sweat glands, some hair follicles, blood vessels, and fat. Each layer also contains connective tissue with collagen fibers to give support and elastin fibers to provide flexibility and strength.

Skin changes are related to environmental factors, genetic makeup, nutrition, and other factors. The greatest single factor, though, is sun exposure. This can be seen by comparing areas of your body that have regular sun exposure with areas that are protected from sunlight.

Natural pigments seem to provide some protection against sun-induced skin damage. Blue-eyed, fair-skinned people show more aging skin changes than people with darker, more heavily pigmented skin.

AGING CHANGES

With aging, the outer skin layer (epidermis) thins even though the number of cell layers remains unchanged.

The number of pigment-containing cells (melanocytes) decreases, but the remaining melanocytes increase in size. Aging skin thus appears thinner, more pale, and translucent. Large pigmented spots (called age spots, liver spots, or lentigos) may appear in sun-exposed areas.

Changes in the connective tissue reduce the skin's strength and elasticity. This is known as elastosis and is especially pronounced in sun-exposed areas (solar elastosis). Elastosis produces the leathery, weather-beaten appearance common to farmers, sailors, and others who spend a large amount of time outdoors.

The blood vessels of the dermis become more fragile, which in turn leads to bruising, bleeding under the skin, cherry angiomas, and similar conditions.

Sebaceous glands produce less oil as you age. Men experience a minimal decrease, usually after the age of 80. Women gradually produce less oil beginning after menopause. This can make it harder to keep the skin moist, resulting in dryness and itchiness.

The subcutaneous fat layer, which provides insulation and padding, thins. This increases your risk of skin injury and reduces your ability to maintain body temperature. Because you have less natural insulation and in cold weather, hypothermia can result.

Some medications are absorbed by the fat layer, and loss of this layer changes the way that these medications work.

The sweat glands produce less sweat. This makes it harder to keep cool, and you become at increased risk for becoming overheated or developing heat stroke.

Growths such as skin tags, warts and other blemishes are more common in older people.

EFFECT OF CHANGES

As you age, you are at increased risk for skin injury. Your skin is thinner, more fragile and the protective subcutaneous fat layer is lost. In addition, your ability to sense touch, pressure, vibration, heat and cold may be reduced. Thus, your aging skin is at higher risk for injury.

Rubbing or pulling on the skin can cause skin tears. Fragile blood vessels are easily broken. Bruises, flat collections of blood (purpura), and raised collections of blood (hematomas) may form after even a minor injury.

This is most easily seen on the outside surface of the forearms, but can occur anywhere on the body. Skin changes and loss of subcutaneous fat, combined with a tendency to be less active, as well as some nutritional deficiencies and other illnesses contribute to pressure ulcers.

Aging skin repairs itself more slowly than younger skin. Wound healing may be up to 4 times slower. This contributes to pressure ulcers and infections. Diabetes, blood vessel changes, lowered immunity, and similar factors also affect healing.

COMMON PROBLEMS

Skin disorders are so common among older people that it is often difficult to tell normal changes from those related to a disorder. More than 90% of all older people have some type of skin disorder.

Skin disorders can be caused by many diseases including diabetes, liver disease, heart disease and blood vessel diseases such as arteriosclerosis. Stress, reactions to medications, obesity and nutritional deficiencies can be other causes.

Climate, exposures to industrial and household chemicals, indoor heating, clothing, allergies to plants and other allergies and many other common exposures can also cause skin changes.

Sunlight can cause elastosis (loss of elasticity), keratoacanthomas (noncancerous skin growths), thickening of the skin, pigment changes such as liver spots, and other conditions.

Sun exposure has also been directly linked to skin cancers, including basal cell epithelioma, squamous cell carcinoma, and melanoma.

PREVENTION

Because most skin changes are related to sun exposure, prevention is a lifelong process.

- Prevent sunburn if at all possible.
- Use a good quality sunscreen when outdoors, even in the winter.
- Wear protective clothing and hats as necessary.

Good nutrition and adequate fluids are also helpful. Dehydration increases the risk of skin injury. Sometimes minor nutritional deficiencies can cause rashes, skin lesions, and other skin changes even if no other symptoms are present.

Keep skin moist with lotions and do not use soaps that are heavily perfumed. Bath oils are not recommended because they can cause you to slip and fall. Moist skin is more comfortable and may heal better.

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