

# Why better care of aging skin matters



**Human skin is a bacterial shield, thermal regulator and window into overall health, these authors note. Learn how and why we need to protect, care for and nourish this multifunctional organ for healthy, active aging**

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An unprecedented milestone in human history has been reached: Global life expectancy at birth has increased by three decades since 1900, and people who reach older ages are living longer today than at any time in history. “Life extension” is a phenomenon realized by all

developed nations and an expanding list of developing nations.<sup>1</sup> The result? The global demographic of those 65 years or older will increase exponentially from 524 million in 2010 to almost 1.5 billion by 2050.<sup>2</sup>

While these statistics tell one story about aging populations, the most visible sign that aging is upon us and growing rapidly is perhaps the most obvious of all. We see the years advancing in our own faces, hands and hair, and in the people around us—our family members, friends and neighbors, as well as our colleagues, residents and members. In public health and medicine, we have grown to understand the importance of

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monitoring and maintaining the function of all parts of the body throughout the life span—most notably the heart, brain, lungs, kidneys, liver, stomach and intestines. Given this attention to organ health, it is a bit surprising that skin health receives comparatively little notice.

The fact is, our skin is the largest organ—an elastic and durable, yet soft and supple, covering known as the integumentary system. The skin serves as a bacterial shield, a thermal regulator and a window into our health. Thus, the level at which skin is restored, maintained and rejuvenated throughout the aging process may correlate to the longevity, health and happiness of the person enveloped within it.

The sensitized, protective layers of tissue that make up the skin serve as a critical “interface” with the environment. Our skin doesn’t just enhance the human experience, it often defines it; from a hand-

shake to a hug to an intimate touch—we experience them all through an always growing and ever-changing system of skin cells and receptors. As the body ages, it is easy to minimize the importance of the appearance, odor, texture and functional performance of this multifunctional organ. We might dismiss changes as nothing more than the effects of aging. But, to an active and aging body, the state of our skin signals both the organic need for and the psychological importance of proper skin-health management.

Poor skin quality can have a negative impact on an individual’s perceived quality of life, which may compound the stress and anxiety of family members and caregivers plus challenge the efforts of professionals dedicated to older-adult health and well-being. A well-maintained layer of skin, on the other hand, can enhance and intensify a person’s experience of life. Consider the impact of skin health on social interaction,

self-esteem and workforce participation, for example.

Yet there are inevitable age-related changes in the skin’s functional capacity and protective ability. Like most other human organs, the rigorously worked and constantly exposed skin system undergoes “intrinsic (chronological) and extrinsic (environmental) aging” from cradle to grave. Unlike internal organs, however, human skin as an organ has been studied extensively because it is so accessible.<sup>4</sup> As a result, we now know that just like dentistry, where the results of interventions are visible and proper care ensures good oral health, the aging of human skin—within limits—is partially inherently modifiable.<sup>5</sup>

In fact, the skin can be scrutinized by individuals, caregivers and clinicians who are trained to “read” it to detect not just changes in skin health, but also the progression of other diseases in the body. We can therefore promote healthy and active aging by paying proper attention to skin care, replenishment and maintenance.

## **An overview of aging skin**

The outermost layer of human skin is comprised of two distinct layers, each anatomically, physiologically and functionally unique. The outermost layer is called the *epidermis*. It forms a physical barrier to the external world and regulates the balance of water and electrolytes in the body. The epidermis creates a physical protective barrier from infection and constantly renews itself. The innermost layer of skin is called the *dermis*. The dermis is composed of a rich network of vessels and nerves that facilitate the skin’s nutrition and strength. Together, these two distinct skin layers—along with the thin membrane that separates them—are subject to age-related changes, damage from ultraviolet (UV) radiation, pollution and other

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environmentally based insults. The result is thinner, less elastic, more fragile and discolored skin, all serious signs of a loss in the skin's protective properties.<sup>3</sup>

Internal changes related to aging will eventually affect everyone's skin. However, UV radiation and environmental pollution and smoke particularly damage the skin's outermost layers. Exposure to UV radiation, for example, increases the likelihood of sun damage, pre-cancer, and skin cancers. Most of us are now aware that poor sun protection in our younger, more formative years can accelerate and accentuate both anatomical and physiological damage on older skin.<sup>3</sup> The questions for us today are:

- Why does skin health matter in older age?
- What are the signs of compromised skin health?
- Is there anything we can do now to improve skin health, or is it too late?

Many people have experienced the torment, personal discomfort and anxiety associated with intense dryness (a condition called xerosis) and itching (known as pruritus) of the skin. But, beyond the discomfort and even the potential wounds from scratching, these conditions can result in psychological distress and social isolation as others resist contact, ultimately leading individuals to feel rejected and decrease their desire to care for themselves.<sup>6,7</sup> In the end, poor skin health—signaled by loss of elasticity, thinning, easier bruising, accentuated dryness, and changes in smell associated with shifts in pH (acid-alkaline ratio)—may adversely impact quality of life.<sup>6</sup>

The good news is the active-aging industry is already on the right track. The occurrences mentioned above tend to be seen more in people who are inactive, incontinent, isolated or immobile (e.g., confined to a bed or wheelchair). Social

contacts such as family members, caregivers and professionals can help older adults more efficiently identify and treat these physical concerns, as well as prevent the potential psychological stresses that may result.

## Common skin disorders in the aging population

With advancing age, there is a heightened risk of developing certain skin diseases—conditions that, while not typically as dangerous as cancerous lesions, may increase morbidity, mortality and financial costs for individuals and health systems. For example, 53% of all new skin disease diagnoses are in people older than 65. Furthermore, at least one in three individuals with type 2 diabetes will develop skin problems.<sup>9</sup> The number of people between ages 60 and 79 years with type 2 diabetes, currently estimated at 100 million, is projected to almost double to 196 million by the year 2030.<sup>1</sup>

Certain dermatology-based diagnoses are more common in the aging population as well. These may include xerosis, pruritus, psoriasis, eczema, onychomycosis (nail fungus), hyperkeratosis (thickened skin), actinic keratosis (pre-cancer), and non-melanoma skin cancer. In fact, more than 90% of older individuals report having a skin disorder of some kind, a phenomenon that frequently prompts physician consultation and, in the United States, accounts for 7% of all medical office visits.<sup>10,12</sup> Fully one in two adults aged 65 years or older is affected by xerosis; up to 50% over age 70 are affected by or diagnosed with actinic keratosis; and skin-based side effects are known to occur in up to 80% of cancer treatment regimens.<sup>10,11</sup> [Ed. More information appears in the sidebar “Identifying age-related skin risks” on page 40 and “Table 1. Skin conditions that become more prevalent with age” on this page.]

We can also examine the effects of skin deterioration and disease in older adults

## Skin conditions that become more prevalent with age

| Condition              | Description   |
|------------------------|---|
| Actinic keratosis      | Pre-cancerous, scaly, crusty growths that occur only on sun-exposed areas of the skin |
| Psoriasis              | Immune skin disease that causes raised, red, scaly patches                            |
| Eczema                 | An itchy, red rash  |
| Xerosis                | Abnormal dryness of the skin  |
| Pruritus               | An unpleasant and often severe itch often associated with dry skin                    |
| Acneiform folliculitis | Acne-like eruptions on skin   |
| Hand-foot syndrome     | Redness, swelling and pain on the palms of the hands and/or soles of the feet         |
| Onychomycosis          | Fungal infection of the fingernails and toenails                                      |
| Hair loss              | Thinning hair, also called alopecia   |

**Table 1.** Skin conditions that become more prevalent with age. **Source:** Extracted from a PowerPoint presentation provided by Nestlé Skin Health for Active Aging Week (see “Resources” on page 39). For use with older adults, the presentation includes photographs to identify these skin conditions, as well as advice on when to see a doctor.

in terms of the social, psychological and cognitive toll such conditions take on individuals, as well as their family members, loved ones and caregivers. When the skin's function, appearance or personal comfort deteriorates, aging adults may feel socially awkward, withdraw from community activities, and develop depression.<sup>13</sup> According to the World Health Organization's 2015 "Ageing and Health Report," "The potential impacts of these [aging skin] changes are not just physical. Many skin conditions can affect individuals' emotional health or lead to changes in the way they are perceived by others; they may also cause withdrawal from social activity, thus preventing full participation in communities and workplaces."<sup>14</sup>

### **A window into health**

While we may consider skin an outer shell, it can directly indicate overall health and wellness status. For example, our skin can be the stage on which the first signs of serious illness appear, such as jaundice of the eyes and skin with advancing liver disease or the spooning of fingernails in some forms of anemia. More importantly, skin is the body's first line of defense. This organ must be strong to fight the battle against infection and environmental insults.

An emerging, less understood field of scientific research is the link between visible signs of face-aging and mortality, survival and health. In one line of research, scientists showed photographs of identical and fraternal twins to nurses who visually assessed the twins' perceived face-age.<sup>15</sup> It was discovered that not only could face-age be assessed through visual inspection, but also that those who looked older for their age had a higher risk of death.<sup>16,17</sup> So, we can consider perception of face-age as a sign of overall health. Perceived face-age, in fact, is also documented to correlate well with physical and cognitive functioning.<sup>18</sup> Furthermore, many endpoints

used in soft biometrics that are assessed with facial-analytics computer programs<sup>19</sup> link quite reliably to nutrient intake, which implies that we can assess the basic attributes of diet by carefully examining face-aging.

In a second line of research, face-age can indicate the rate at which we are aging. Scientists in the various disciplines representing aging biology have known for years that the offspring of long-lived people tend to look younger for their age relative to age-matched counterparts—a conclusion derived from the study of evolutionary biology.<sup>20</sup> A strong genetic component likely contributes to this effect. The implication is that more youthful-looking individuals age at a slower pace compared to other people the same age.

Slower biological aging translates into lower mortality risk. This individual genetic-based trait of decelerated aging can be assessed indirectly through facial analytics. Indeed, research has shown that we can detect other behavioral risk factors by systematically examining the skin and other facial structures.<sup>21</sup> In effect, a younger face-age can yield clues about a person's genetic propensity for exceptional longevity, even in the presence of some harmful behavioral risk factors (e.g., smoking). Researchers have already identified some of the genes that contribute to youthful-looking skin. Emerging evidence suggests that these same genes may be associated with the rate of aging of other organs that ultimately influence disease risk and duration of life.<sup>22</sup>

### **Healthy skin habits**

Aside from good genes, there are numerous ways to protect skin from the external influences of aging. The solutions are not quick and easy, but it is not too late to take control of skin health. Skin needs to be protected, cared for, nourished and enhanced on a daily basis for optimal results and functionality. When damage

## **Resources**

### *Internet*

**American Academy of Dermatology: SPOT Skin Cancer™**  
[www.aad.org/public/spot-skin-cancer](http://www.aad.org/public/spot-skin-cancer)

**Global Coalition on Aging: Life Course of Healthy Skin Global Partnership**  
[www.globalcoalitiononaging.com/index.php?id=press-release-120414](http://www.globalcoalitiononaging.com/index.php?id=press-release-120414)

**Nestlé Skin Health**  
[www.nestleskinhealth.com](http://www.nestleskinhealth.com)

### *Educational handouts*

**Active Aging Week, Theme days: Get Skin Health Smart\***  
<http://activeagingweek.com/theme-days/day6getskinhealthsmart.php>

\* Resources from Nestlé Skin Health available on this webpage include "Skin conditions that become more prevalent with age," a PowerPoint providing information and photographs about common skin conditions.

or disease does occur, it must be treated, corrected and restored in a timely manner. And, it's important to remember that many of the skin diseases and conditions mentioned in this article can be either avoided or treated.

Here are four simple steps we should all follow on a daily basis for healthier skin:

#### **1. Shield**

UV rays and environmental pollution are the most common external threats

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to our skin, and across time, they result in cumulative damage. For older adults, particularly those who enjoy more active and outdoor lifestyles, this requires being proactive to ensure skin can stay as protective as possible for as long as possible.

## *How to shield skin*

Use sunscreen every time you are outdoors. For best protection, use at least SPF 30 with broad spectrum UVA/UVB protection to block out as many damaging rays as possible, and apply every 90 minutes. Also, protect your eyes by wearing sunglasses with UV protection.

Clothing can also block out UV rays, so don't forget long-sleeved shirts and wide-brim hats during your outdoor adventures.

Increased bouts of dry skin and itching can often solicit voluntary, and sometimes subconscious, trauma to the skin through scratching and picking. Take measures to shield the skin, such as wearing long-sleeved clothing, maintaining shortened and well-trimmed fingernails, and even refraining from using tools like back-scratchers that alleviate irritation in the short term but lead to longer-term damage.

## **2. Hydrate**

As we age, our skin experiences many changes: It loses important fats; its pH increases; and it recovers from trauma more slowly. Hydrating skin from the outside helps keep the right balance of oils and water and protects against dryness.

## *How to hydrate skin*

For proper skin hydration, apply emollients (i.e., moisturizers) daily. Look for ingredients including humectants, ceramides, dimethicone, lactic acid and petrolatum on the label when searching for an emollient. It is wise to discuss

## Identifying age-related skin risks

Aging of the skin begins at the earliest of ages, and the potential effects often remain visibly hidden for decades due to the accumulation of damage over time.

Years, and often decades, of sun damage lead to skin destruction and skin disease. Some of the most notable conditions are discussed below. Along with any lesions or moles, these conditions should be promptly evaluated by medical clinicians experienced in their treatment. More information and photographs may be viewed at [www.aad.org/public/spot-skin-cancer/learn-about-skin-cancer/types-of-skin-cancer](http://www.aad.org/public/spot-skin-cancer/learn-about-skin-cancer/types-of-skin-cancer).

### *Solar elastosis (texture, color and cellular alterations)*

Solar elastosis refers to sun-damaged and photo-aged skin appearing as darkened patches (hyperpigmentation), deepening furrows and ridges, accentuated dryness, redness (erythema) and scaling, easy bruising, and a leathery feel on the body's most exposed surfaces, such as the face, ears, neck, scalp and hands. As a result, a person

may appear older than his or her chronological age. A significant amount of progressive damage may continue even after measures to prevent ongoing sun damage have been taken.

### *Actinic keratosis (pre-skin-cancers)*

Actinic keratoses are persistent, scaly and crusted (hyperkeratotic) skin lesions. These lesions have a classic hardened and sandpaper-like feel that often occur in one's 30s and later, and are more prevalent on the chronically sun-exposed areas of the body mentioned in the above paragraph. Lesions may be red, inflamed or flaky, with either discrete or poorly defined margins. Some spontaneously resolve only to return months or years later. Regardless of the features noted on self-examination, these lesions maintain a cancerous potential and require medical evaluation.

### *Squamous cell carcinoma (non-melanoma skin cancer)*

Cutaneous squamous cell carcinoma (SCC) is a cancer that may occur on any area of skin, although a much greater prevalence is noted on the more sun-exposed parts of the body. SCC lesions

may appear hyperpigmented, pale or red, with varied amounts of dryness or scaling and a poorly defined base. More advanced lesions may become thicker, firmer, malodorous, ulcerated and prone to bleeding; some clinically resemble wounds that will not heal in a timely fashion.

### *Basal cell carcinoma (non-melanoma skin cancer)*

Basal cell carcinoma is the most common form of skin cancer. It is generally slow growing, locally invasive, and rarely spreads to other parts of the body. Like most other skin malignancies, these tumors are more common after 40 years of age, usually occur on the more sun-exposed parts of the body, and greatly affect individuals with fairer skin types. Lesions typically exhibit a pearly-white to translucent dome-shape, with overlying microvessels and a depressed, ulcerated or bleeding center. Less commonly, these lesions may appear pink, red, brown, blue or black, and may have a gelatin-like consistency to the touch.

the benefits, selection and use of these products with a skin health professional. Also, ensure you use a proper amount of moisturizer and rub it in thoroughly so as not to have excess on the skin, which could lead to poor grip or slipping.

In addition to supplementing your skin's hydration with moisturizers, take steps to prevent overdrying and fluid loss. Excessive showering and bathing can strip the skin of its natural fluids, worsening problems with dry skin and itching. Good practice is to restrict bathing to five minutes or less, avoid hot water and bubble baths, discontinue the use of astringents or harsh soaps, and concentrate washing efforts on the underarms, groin, scalp, soles of your feet, and hands.<sup>6</sup>

### 3. *Nourish*

Conventional wisdom suggests that proper nourishment and nutrition for the human body is essential to a longer, healthier lifestyle. However, few may realize the significance that a proper diet plays in skin health. Food and the macronutrients contained within it—such as fats, carbohydrates, proteins, vitamins, antioxidants and minerals—contribute to delaying the skin's aging process<sup>8</sup> and prevent dry skin, dry hair and broken fingernails as well as skin discoloration.

#### *How to nourish skin*

Nourish from the inside out. You get many of your daily-required vitamins and nutrients from what you eat, and many of these can improve the way your skin looks and feels. Generally speaking, foods rich in vitamins, healthy fats and water are good for your skin. Eat fruits and vegetables rich in vitamins A, C, D and E as well as beta-carotene and zinc, including carrots, leafy greens, citrus fruits and sweet potatoes, as well as almonds and eggs.

Imbalances in some essential fatty acids like omega-3s and omega-6s are associated with skin problems. Adding healthy



fats (found in foods like seeds, nuts, avocados, salmon and eggs) is good for your overall diet and your skin.

Another great way to nourish your skin from the inside out is to drink water every day, as it helps decrease the concentration of oil on your skin that can lead to breakouts and reduce the signs of aging. A physician can tell you the amount of water that is right for your diet.

### 4. *Evaluate and consult*

A comprehensive effort to establish and maintain good skin health includes daily skin observation and regularly scheduled professional skin surveillance and evaluation. These actions will help you identify breaks in the skin, early signs of infection, newly developed lesions, or moles that have grown or changed appearance in any way. Any abnormalities should be presented to a medical professional immediately for proper evaluation, testing or referral.

#### *How to evaluate skin and who to consult*

As a general rule, be diligent about observing your skin during routine bathing and dressing activities, and use a small handheld mirror if necessary to perform a thorough examination. You may want to enlist the help of loved ones or care-

givers to check hard-to-see areas like your back or scalp. It is also integral to a healthy skin maintenance regimen to learn from and consult with a clinician experienced in the prevention, screening and evaluation of normal skin, dermatologic lesions and skin disease.

### **A growing need**

As life extension and population aging progress, so too does the expectation and desire to age better. In that context there are more and different nuances, challenges and needs for this growing active-aging population. One of those needs, which is neither properly recognized nor addressed, is the health of our skin. We need new approaches to scientific research, educational programs, and products and services to achieve better skin health and a healthier life span.

For all of us—older adults and professionals alike—a lifestyle that embraces active aging provides opportunities to feel our best, engage in interests, enjoy social interaction and, wherever possible, experience the great outdoors. In each case, our skin plays an important role as our protector from outside harm and our interface with the world. It also

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expresses our identity and well-being. Just as we exercise and watch what we eat to maintain a healthy heart, it's time to make shielding, hydrating, nourishing and evaluating our skin part of daily routines. ☺

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