

# True

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The skin is not only the largest organ in the body, it is also a mirror of the health of the body's internal organs. In addition to protecting inner tissue structures, the skin helps regulate body temperature and eliminate metabolic waste products. Many diseases of the digestive, cardiovascular and nervous systems, as well as hormonal imbalances and inflammatory conditions, are reflected in the skin. With approximately 20 square feet of surface area, the skin is primarily taken care of for cosmetic appeal. Thousands of skin care products cater to beauty and health conscious consumers who hope to avoid acne, discoloration, signs of aging and also skin cancer. It is estimated that the global skin care products industry's annual revenue will be \$102.3 billion by 2018.

## The Benefits of Micronutrients for Healthy Skin and Collagen

Known risk factors for unhealthy skin include excessive exposure to ultraviolet rays, environmental pollution, dehydration, a diet deficient in nutrients, consumption of sugary drinks, alcohol and smoking. In addition, metabolic syndrome, which includes obesity, diabetes, high blood pressure and hormonal imbalances, can contribute to skin issues and signs of early aging.

The skin is made up of three main layers. The epidermis is the outermost layer and contains the proteins keratin (which strengthens the skin) and melanin (which protects the skin from harsh sun rays). The Dermis is the second layer containing blood vessels, nerves and collagen fibers, which are essential for the skin's firmness and elasticity. The Hypodermis is the third layer and contains fat cells, which help maintain body temperature.

The main component of the skin is **collagen**, a fibrous protein. There are several subtypes of collagen found in different parts of our body. As one ages, less collagen is formed and its degradation increases resulting in sagging skin and wrinkles. Age-related decline of the sex hormones and decreased growth hormone



Beautiful skin is primarily the result of a healthy diet. Micronutrients play a major role and are necessary for the production of collagen and other stability molecules for the connective tissue.

## The Benefits of Micronutrients for Healthy Skin and Collagen

production also adversely impact the texture and health of the skin. Declining levels of estrogen promote dry and wrinkly skin and reduce its thickness. A drop in growth hormone production is reflected by dull skin due to decreased production of new skin cells and the accumulation of dead cells on the skin layers. This accumulation also increases melanin pigmentation because melanin coalesces into small pockets forming brown patches or “sunspots” on the skin. The ground substance (also known as the extracellular matrix) in skin is built by layers of glycosaminoglycans (or hyaluronic acid). Decreased production of hyaluronic acid lowers the ability of the skin to repair itself, and impacts its organization affecting the skin structure.

**These factors, along with a dietary deficiency of micronutrients such as vitamin C, proline, lysine, vitamin E, selenium, zinc and others, accelerate the process of skin aging. For instance, wrinkles occur due to a reduction in muscle mass and skin thickness, and the destruction of the collagen and elastin supporting the skin structure.**

**Vitamin C**, in combination with **lysine and proline**, is essential for producing healthy collagen fibers. Free radicals generated from oxidative damage activate matrix metalloproteinase (MMP) enzymes, which break down collagen and elastin, thereby promoting wrinkles and other signs of premature aging. Vitamin C, together with **vitamin E**, is highly effective in reducing free radical damage. Other important micronutrients for healthy skin are **green tea, carotenoids, lycopene, curcumin and coenzyme Q-10**.

**Although topical solutions are available for wrinkles, acne and dry or oily skin, it is critical to support our body’s largest organ from the inside through diet and synergistic combinations of micronutrients. In this respect, adequate collagen production is not only important for healthy skin, but also for strong and healthy coronary arteries, bones, cartilage and for improving the function of all organs in the body. This can only be achieved through healthy diet and lifestyle choices along with appropriate micronutrient supplementation.**

## Important Health Information for All

This information is provided to you courtesy of the Dr. Rath Research Institute. Led by two former colleagues of two-time Nobel Laureate Linus Pauling († 1994) this Institute has become a leader in the breakthrough of natural health research in the field of cancer, cardiovascular disease and other common diseases. The Institute is a 100% subsidiary of the non-profit Dr. Rath Foundation.

The groundbreaking nature of this research poses a threat to the multi-billion dollar pharmaceutical “business with disease.” It is no surprise that over the years the drug lobby has attacked Dr. Rath and his research team in an attempt to silence this message. To no avail. During this battle, Dr. Rath has become an internationally renowned advocate for natural health saying, “Never in the history of medicine have researchers been so ferociously attacked for their discoveries. It reminds us that health is not given to us voluntarily, but we need to fight for it.”

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