THE SKIN IN AUTOIMMUNE DISEASE

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Many factors that trigger autoimmune diseases such as oxidative stress also cause skin changes. Consequently, it’s common for skin manifestations, such as rash and hives, to occur in people with autoimmune diseases. Healing the immune system also improves these skin changes.

While certain autoimmune diseases, such as the bullous pemphigus disorders, primarily target the skin, nearly all autoimmune disorders cause skin changes such as rash, irritation, and other signs of aging related to inflammatory changes and reduced collagen production.

Environmental Triggers

The same factors that trigger the production of free radicals and oxidative stress, such as cigarette smoke, ethanol, ultraviolet radiation, stress, and nutrient deficiencies, contribute to both autoimmune disease and skin aging. The process of glycation, which is the cross-linking of protein and sugar molecules is another significant cause of oxidative stress and is directly related to diets containing high amounts of refined sugar. Recent studies confirm that a decline in the body's natural antioxidant systems is a key factor responsible for autoimmune disease development and the appearance of aging skin. This article describes the role of antioxidants in reversing the signs of aging and improving immune system health.

Reducing Symptoms

A diet with increased levels of fresh fruits and vegetables and adequate amounts of pure water is one way to reduce oxidative stress. Dietary supplements are another way. And topical ointments containing antioxidants such as vitamin C, vitamin A, related retinoid compounds, and zinc are another way of improving the skin damaged by oxidative stress. Studies show that oral supplementation with the amino acid glucosamine, minerals such as magnesium, and various antioxidant compounds, for instance CoQ10 and alpha lipoic acid, benefit the skin and improve the appearance of wrinkles and fine lines.

Topical preparations containing antioxidants, and in some cases corticosteroids, are usually necessary to keep the skin moist and reduce rashes and other effects of autoimmunity. In addition, topical preparations containing vitamin A are known to protect against the development of skin cancer and skin changes related to autoimmune disease. Dehydration of skin can be improved with preparations containing hyaluronic acid, sodium pyrididone carboxylic acid (NaPCA), lactic acid, urea, squalane, and
DMAE. The integrity of connective tissue is improved with preparations containing manganese and glucosamine, which are present in hyaluronic acid.

**Dietary Supplements**

A number of different dietary supplements are used to reduce oxidative stress, including vitamins A, C, E, B complex, K and D, zinc, copper, manganese, magnesium, CoQ10, quercetin, acetyl-l-carnithine, carnosine, omega oils, green tea extract and alpha lipoic acid. In Europe, the antioxidant nutrient alpha lipoic acid is sold as a drug to treat complications of diabetes because of its ability to reduce mitochondrial-induced oxidative stress. In the United States it is used to prevent diabetic complications, the effects of wasting, cataract formation and reduce the degeneration of heart and other tissues, including the skin.

The recommended dose of alpha lipoic acid is 250-500 mg daily and it should be taken along with biotin. Alpha lipoic acid's primary effects are related to its ability to reduce production of the inflammatory immune system chemical nuclear factor kappa beta and its ability to regulate another immune system chemical known as collagen-regulating factor.

The plant bioflavinoid quercetin, which is also a potent antioxidant, also reduces oxidative stress and inflammation by reducing levels of nuclear factor kappa beta. In addition, quercetin helps reduce clot formation and has beneficial effects on the circulatory system and on the mitochondrial function of cardiac cells.

Carnosine is particularly beneficial in diabetes because of its ability to protect cellular chromosomes from oxidative damage and inhibit the process of cross-linking. Carnosine is also essential for the proper metabolism of zinc and copper. Carnosine helps wound healing and prevents cataract formation because of its ability to rejuvenate connective tissue cells. The recommended daily dose for carnosine is 1000 mg or 1 gram daily. Vitamin K promotes skin health by reducing levels of the inflammatory cytokine interleukin 6. Products containing a 10 mg combination of both vitamin K1 and K2 are recommended. Vitamin K is also essential for bone health and the prevention of arterial calcification. Omega oil supplements, which effectively reduce inflammation, should contain EPA, DHA and GLA to ensure a proper balance of omega-3 and omega-6 oils.

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