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## Life Extension Update Exclusive

### **Calorie restriction delays age-related skin changes in rats**

For those of you who are interested in ways to maintain younger looking skin, a study published in the January/February 2005 edition of the American Medical Association journal *Archives of Facial Plastic Surgery* (<http://archfaci.ama-assn.org/>) found that restricting the dietary calories of laboratory rats helped delay or prevent some of the nonenvironmentally induced changes that occur in aging skin. Although some of the features of skin aging in rats appear to be different than those that occur in humans, the possibility of a dietary means to influence the rate of skin aging is worthy of attention.

Researchers from the Department of Otolaryngology at the University of Illinois at Chicago divided groups of 4 month old young adult, 12 month old adult, and 24 month old rats to receive a calorie restricted or diets that allowed the animals to consume an unlimited amount of food. Skin samples were examined at the study's conclusion.

The trend toward increased epidermal depth, dermal depth and fat layer that occur with aged rat skin were present in the rats that consumed unlimited diets, but prevented in the calorie restricted rats, although the restricted rats had a greater amount of epidermal cells in the tissue samples studied. Calorie restricted rats also showed increased collagen and elastic fibers, fibroblasts, and capillaries compared to nonrestricted rats, leading the researchers to ask if the diet might have a modulating effect in slowing down the breakdown of fibrous connective tissue in older animals. Additionally, tissue from the calorie restricted rats was found to have a higher density of fibroblasts, which are responsible for elastogenesis and become quiescent in human aging skin.

The authors observe that rodent skin morphology appears to be “an age-sensitive variable influenced by calorie restriction,” and recommend verifying the findings in other strains of calorie restricted rodents. Because dietary restriction has been shown to retard age-related changes in many areas of the species studied, it is reasonable to anticipate that it may help slow skin aging as well.

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## Protocol

### **Skin aging**

In spite of the effect of sunlight on the skin, there are other factors that affect skin health that occur regardless of our exposure to sun rays. Dryness, loss of tone and fullness, diminished immune responses, and reduced ability to repair damage are all factors that contribute to the aging process.

Although antioxidants are well-known for their beneficial effects inside the body when taken orally, in the case of skin, there are a number of antioxidants that are helpful when applied topically (Podda et al. 2001).

Human studies have demonstrated pronounced protective effects of antioxidants when applied topically before UV radiation

exposure. With respect to UVB-induced skin damage, the photoprotective effects of antioxidants are significant. Topical application of such combinations may result in a sustained antioxidant capacity of the skin, possibly due to antioxidant synergisms. Free radicals are culprits behind UVA-induced skin alterations, thus indicating a basis for topical antioxidant administration. In a human study, topical application of antioxidants resulted in diminished severity of UVA-induced sun damage. Thus, regular application of skin care products containing antioxidants may be of the utmost benefit in efficiently preparing skin against exogenous oxidative stressors occurring during daily life. Sunscreen agents may also benefit from combination with antioxidants resulting in increased safety and efficacy of such photoprotective products (Dreher et al. 2001).

Nourishing the skin with topical ingredients is important, but in addition it is essential that you feed your skin nourishing food and drink. The effects of aging can be seen directly by looking at skin, not something possible for most organs in the body, which are hidden from view.

<http://www.lef.org/protocols/prtcl-099.shtml>

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## Featured Products

### Self Microdermabrasion

Self MicroDermAbrasion™ Ultra Exfoliate is an exfoliate that removes old cells at the skin's surface, thereby revealing younger-looking skin. Developed by pioneering dermatologist Gary Goldfaden, MD, Self MicroDermAbrasion™ contains concentrated magnesium crystals that wipe away dead skin cells, allowing the more supple skin beneath to easily absorb the many antioxidants contained in the formula. The good news is that Dr Goldfaden has reformulated Self MicroDermAbrasion™ to pack in 40 percent more exfoliating magnesium crystals.



Red tea, a powerful antioxidant, is part of this creamy exfoliate. Red tea is a rich source of alpha-hydroxy acids and natural antioxidants such as vitamins C and E, and flavonoids. Removing the tough upper layer of aged cells at the surface enables nutrients from other complementary antiaging products, such as Rejuvenex® and Hydroderm, to more readily penetrate the skin.

<http://www.lef.org/newshop/items/item00672.html>

### Precious Drops

Precious Drops moisturizer is a fragrance-free and preservative-free complex of plant derived lipids. It includes a plant derived anti-inflammatory agent, and nutritional and moisturizing agents. Precious Drops is produced in a silicone base, adding the attributes of topical silicone to its list of benefits. The product is excellent for sensitive skin and allergy prone individuals. Excellent for extremely dry skin.



Precious Drops are excellent for moisturizing and promoting intense healing. The drops are especially useful in allergic and sensitive individuals. The product can also be used as a powerful eye-gel.

- Excellent for moisturizing
- Use after exfoliation
- Promotes intense skin healing
- Can be used as powerful eye-gel

<http://www.lef.org/newshop/items/item00691.html>

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### Super Sale ends January 31—Don't miss out!

Super Sale prices are in effect until the end of this month, so order now to obtain the lowest prices on your Life Extension nutritional products. Stock up on a year's supply of Life Extension Mix, Life Extension Booster, Rejuvenex, or any of your favorite products, and receive volume discounts on many items, as well as the 10 percent Super Sale discount. Members continue to receive their customary 25 percent off in addition to Super Sale savings. U.S. customers can order now by calling 1 800 544 4440, or order online at <http://www.lef.org/newshop/>

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