

# Beauty from “Without and Within”

by STEPHEN HOLT, M.D.

**S**kin health is often a reflection of total body health. There is a tendency to treat skin disorders by topical applications of creams, lotions and ointments. Signs of health and beauty in the skin come from within the body, but on a daily basis the skin receives damaging insults from the environment. Like other organs of the body, the skin needs nutrients and a good chemical and physical environment to maintain its health.

The most common topical products used in cosmetic or dermatology practice are moisturizing agents. However, among the major factors that control hydration are the essential fatty acids. The balance of omega-3 fatty acids (efficiently derived from fish oil) and omega-6 fatty acids (ubiquitous in the form of dietary vegetable oils) is a key issue. It is known that the ratio of omega-6 to omega-3 fatty acids is often grossly disturbed in the normal Western diet with an overabundance of omega-6. There is a common "relative" or "absolute" deficiency of omega-3 fatty acids in Western diets and it is an underestimated cause of dry skin.

Fish oil is the best source and only reliable form of the active types of fatty acids (EPA and DHA) that can be readily incorporated into vital aspects of body chemistry. Taking fish oil is considered not fun because it often causes bad breath and digestive upset. High-quality, deodorizer fish oils are now available in enteric-coated softgels that are more palatable and better absorbed than fish oil liquids or capsules. Studies published in leading medical journals have documented the advantages of enteric-coated fish oil for use as a versatile dietary supplement.

Much research has shown the health potential of the application of antioxidants to the skin in assisting with the prevention of age-related changes in the skin. Skin damage results from normal aging processes, such as thinning of collagen and new growth of unwanted blood vessels (angiogenesis) together with exposure to damaging forces in our environment. Although antioxidants have been shown to be useful in promoting skin health, their usefulness is enhanced when combined with anti-angiogenic agents.

## **Aging skin**

To attempt to prevent or reverse the changes of aging skin, it is first important to understand what changes occur and then apply complete strategies. Many of the typical signs of aging or damaged skin are summarized in Table 1.

Table 1.

### TYPICAL SIGNS OF AGING/ DAMAGED SKIN

- ◆ Coarse wrinkles + Fine wrinkles
- ◆ Thinning of skin
- ◆ Thickening of skin
- ◆ Pigmentation changes
- ◆ Sallowiness
- ◆ Roughness
- ◆ Skin fragility
- ◆ Skin laxity
- ◆ Blood vessel changes
- ◆ Spider veins
- ◆ Telangectasia (abnormal dilation of blood vessels)
- ◆ General dryness of skin
- ◆ Prominent skin follicles
- ◆ Unwanted hair growth

Two factors have emerged as important causes of premature skin aging. The first is the role of sunlight damage. Modest and chronic exposure to strong sunlight causes considerable problems that are summarized in Table 2.

<b>SKIN CHANGES WITH SUNLIGHT EXPOSURE OR IONIZING RADIATION.</b>	
<b>Skin Changes</b>	<b>Comment</b>
Thickening	Thickening of the surface layer of the skin
Pigment	Pigment production by special cells (melanocytes)
Alteration in cells	Alteration in cells that have immune function in the skin (epidermal Langerharn's cells)
Reddening, swelling	Acute problems with reddening, swelling, pain, peeling pain and peeling
Wrinkling	Wrinkling of skin
Elastosis	Appearance of discoloration with small, yellow hyperpigmentation
Freckles	Uneven pigment resulting in mottled hyper-pigmentation
Atrophic change	"Dying bacle' of tissues with associated dermatitis
Pre-cancerous skin	Called actinic keratosis, which looks like "pinkish@" heaps of skin that are scaly or crusted with a poorly defined edge
New blood vessel growth	Spider-like clusters of vessels with broken vein appearance
Skin cancer	Especially basal cell cancer
Malignant melanoma	A serious type of cancer which may limit life expectancy

The second factor, less recognized but quite pernicious, is the use of synthetic chemicals in soaps and poorly-formulated cosmetic products. One obvious strategy to prevent skin aging is the use of sunblock agents, well-designed summer garments and the avoidance of exposure to harsh chemicals.

### **New, exciting advances**

The science of skin health has moved beyond conventional approaches such as skin peels using damaging chemicals and premature cosmetic surgery. Improvements in skin wrinkles, sallow appearance and toughness of the skin are assisted by moisturizing strategies but pigmentation, laxity and broken blood vessels (telangectasia) are difficult to impact. These latter skin changes are amenable to the use of unique, natural ingredients, discovered from biotechnology research.

An elegant approach to reversing signs of skin aging has been made by scientists in Quebec, Canada. The research objective was to select a naturally-occurring, biological substance that would help rebuild damaged skin by a variety of mechanisms including skin hydration and the interference of enzymes in the skin that break down collagen. Collagen break down causes skin laxity and unsightly wrinkles. Canadian researchers have shown that these enzymes, called matrix metalloproteinases (MMP), are inhibited by shark cartilage extracts.

Specially prepared shark cartilage fractions have resulted in an extract that has the specific effects of blocking MMP activity. Several studies show that the application of MMP inhibitors contribute to the prevention or reversal of many changes in the skin associated with aging. These extracts of shark cartilage can be shown to stimulate the natural renewal properties of the surface of the skin and strengthen the capacity of the skin to retain moisture, thereby delaying the signs of skin aging. These are revolutionary approaches to optimal skin appearance.

## **Angiogenesis in the skin**

One truly exciting by-product of this research is the demonstration that shark cartilage extracts inhibit unwanted new blood vessel growth (broken blood vessels). Enormous amounts of scientific work over the past three decades have shown that extracts of shark cartilage may alter the process of angiogenesis (new blood vessel growth). Angiogenesis has major implications in a variety of diseases in addition to its role in causing major cosmetic problems.

Although shark cartilage has been perceived as controversial as a cancer cure, recent scientific studies reinforce the major implications that fractions of shark cartilage may have for treating cancer, chronic inflammation, arthritis, common skin diseases (e.g. psoriasis) and some causes of blindness; in addition, shark cartilage appears to have promising abilities to favorably affect wound and burn healing. Within the next year or two, a complete renaissance of interest in shark cartilage will occur in conventional medicine, recognizing that alternative medicine has not rejected the value of the beneficial properties of shark cartilage.

## **Restoring healthy collagen**

Laboratory research by Dr. Dusan Milkovic, Ph.D., has led to the discovery of a combined vitamin approach to prevent oxidative damage to the skin and promote the growth of collagen using a proactive form of boron. Clearly, preventing collagen breakdown with the use of anti-MMP strategies developed by Canadian scientists can be complemented by approaches using phyto-boron and stabilized vitamin C. Boron and vitamin C as topical applications must be specially prepared in a complex format to exert beneficial effects in wound healing and collagen synthesis.

## **The ideal cream**

It is important that topical therapies be esthetically acceptable. "Smooth" creams formulated with natural fragrance such as citrus and peeling or plant oils, are preferred. An ideal approach is to increase the resistance of the skin to damage from the environment, since it is not possible on a practical basis to avoid the environmental influences that damage skin. Skin therapy should ideally protect against irritations and reduce skin excrescences and spider veins.

The use of the proprietary combination of citrus fragrance and liquid shark cartilage extract in a high-quality delivery base appears to be a highly attractive and revolutionary growth approach to skin care. This substance has been subjected to clinical trials, which have shown benefit in all of the aforementioned areas that compose the ideal quality of a holistic, natural skin care product.□

**STEPHEN HOLT, M.D. MRCP (UK), FRCP(C), FACP, FAGC, FACN** President, Illinois College of Physicians and Surgeons. For correspondence with the author: e-mail, stoltmd1@aol.com

### *Resources:*

Internet: [www..atrium-bio.com](http://www..atrium-bio.com)  
[www..enaturalhealth.com](http://www..enaturalhealth.com)  
[www..biotherapies.net](http://www..biotherapies.net)  
[www..naturalskinhealth.com](http://www..naturalskinhealth.com)  
[www.futureceuticals.com](http://www.futureceuticals.com)  
[www..naturalantiangiogenesis.com](http://www..naturalantiangiogenesis.com)

### *Publications:*

Holt S., Barilla J., *The Power of Cartilage*, New York: Kensington Books, Wellness Publishing Inc. Distributors, (1997)

Smeh N., *Health Risks in Today's Cosmetics*, Alliance Publishing Co. (distribution Wellness Publishing),

Requests for literature can be made to:

Atrium BioTech USA, Inc. 9 Commerce Road, Fairfield, NJ 973-808-1400

Future Ceuticals/Van Drunen Farms, Momence, IL. 815-472-3100

Wellness Publishing, Inc. distributors, 973-808-7300.