

〈教育セミナー〉

ドライスキンのサイエンス～原点から最前線まで～

ドライスキンへのアプローチ  
—温故知新—

田上 八朗

**Approach to Dry Skin (Xerosis): Lessons from the Past**

Hachiro TAGAMI

**Abstract**

The skin is covered by an extremely thin, soft but highly efficient barrier memberane, the stratum corneym (SC), which protects the underlying wet living cutaneous tissues from water loss but also from the penetration of injurious agents into the skin from the environment. Moreover, the SC can bind water efficiently to make our skin surface soft and smooth. However, recent improvement of our house-warming system has inevitably begun to induce a decrease in indoor humidity, facilitating the development of pruritic dry skin, xerosis, in those elderly individuals whose SC water holding capacity is poor, leading to the development of cracking in such dry SC and inducing an inevitable scratching behavior, which may allow even the penetration of large environmental protein antigens into the skin, and leading to the development of nummular eczema in a fashion similar to that observed in infants with ichthyosis vulgaris caused by filaggrin gene defect who tend to develop pruritic atopic dermatitis to such environmental protein antigens. Moreover, those with renal insufficiency or with diabetes mellitus also tend to develop severe xerosis. These pruritic xerotic changes are caused by the deficiency of so-called low molecular, natural moisturizing factor (NMF) composed of the amino acids derived from the proteolysis of filaggrin and sweat-derived lactic acid and urea. NMF plays an important role in the water-binding capacity of the SC, together with the intercellular lipids that are indispensable for the stratum corneum barrier function and hyaluronan secreted by keratinocytes. Because the deficiency of any of these substances in the SC tends to lead to the development of such pruritic dry skin, it is important to conduct daily skin care by using effective moisturizing agents whose efficiency is well proven scientifically with the *in vivo* high frequency instrumental measurements, as well as by clinical observation.

**Key words:** dry skin, high frequency measurement, natural moisturizing factor, skin care, stratum corneum.