

Eye care - new agents against wrinkles

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The sensitive eye area demands for an excellent base care and well tolerable actives to balance out fine lines, dark circles below the eyes and weakening elasticity.

In daily life eye contact certainly is the most important way of communication which is the reason why eye care plays a major role in the cosmetic treatment of the facial skin. A lasting fresh and smooth appearance of the eye area is a significant element of male as well as female attraction. The first fine lines which then continue to spread are particularly visible around the eye area. And, the other way round the efficacy of an excellent preparation also becomes more apparent than on other skin parts. In addition to the fine lines caused by facial expression frequently also bad skin develops around the eye area. Further disorders are scaling skin, comedones, milia, dark circles and a weakening elasticity of the eye lids and below the eyes.

Harmful influence

Apart from the natural aging process, a series of additional elements like mental factors, duration of sleep, long hours of strenuous work in front of a computer screen, intense sun radiation and above all unbalanced nutrition and unnecessary toxic agents like nicotine significantly affect the eyes. As a rule, all the negative factors mentioned above have a major influence and can only partly be compensated by adequate cosmetic treatment and excellent active agents. Correspondingly there is no other part of the skin where more emphasis should be laid on preventive measures in order to avoid harmful influences. These specific issues should be discussed during the cosmetic treatment.

The skin around the eyes is specifically flexible, soft, permeable and sensitive and wrinkles can develop easily due to a weakening elasticity and dehydration. In this connection the eating habits should again be pointed out. An insufficient water balance becomes visible at once. On the other hand, moisturizing masks promptly improve the appearance which however will not last very long if the endogenous moisture is not increased. It goes without saying that certain types of cosmetic products are not suitable for the eye area. Above all the ocular mucous membranes are very sensitive. Already minor physical and

chemical contacts with dust particles, fumes like chlorine in swimming pools, onions in the kitchen or solvents as well as aerosols result in irritations, running eyes and reddening.

Certain substances are not tolerated...

The eyes may react sensitive to certain ingredients as for instance to specific preservatives and perfumes. Also spreading oils like e.g. isopropyl myristate (IPM) added to emulsions to improve the spreading may be counterproductive in products for the eye care. The same applies for essential oils and higher alcohol concentrations (> 10%). As the ocular mucous membranes have an isotonic environment, they react to hypertonic influences. If the watery phase in O/W emulsions contains higher amounts of water soluble substances, a sparse application of creams is recommended. In cases of sensitive skin reactions like reddening and running eyes have to be expected if the products are too closely applied to the mucous membrane area. This also applies for a series of emulsifiers which may cause stinging. Tensides, which may be called their relatives, are frequently used in shower creams and shampoos and specifically known for said effect. In the European Cosmetic Decree and in medical products therefore the legislative authorities have prohibited a number of substances to be used around the eye. Some of them have to be provided with a warning as e.g. the preservatives silver chloride and benzalkonium chloride. In the substance safety data sheets of the manufacturers it is documented whether the specific components are potentially irritant or irritant free.

Frequently in combination with the data on irritations, information on threshold concentrations are submitted whereas the substance contents generally are kept below the critical amount. It should be considered however that due to evaporation of the water content in the products of about 50%, or in gels even up to 90%, a considerably high substance concentration may result. As the eye area is more sensitive though, the irritative threshold may be surpassed.

The skin around the eye needs an adequate base care as well as active agents. Whereas the base care corrects imbalances of the skin regarding lipid and barrier substances (ceramides & co.) and NMF (natural moisturizing factor) the active agents are divided into two groups. The first group are actives with long term effects which preventively improve the skin condition on a long term base and try to slow down the skin-aging process. The second group are effectives with immediate action which means that after their degradation or removal as for instance after skin cleansing the previous skin condition will be restored.

Requirements for an adequate base care

Active agents and their transport systems use to stir up a lot of interest, as in terms of publicity they always can be sold in company with a good story. Apart from some long-running issues there is a fast change of items, normally even in a three years' term. Base care products in comparison live in the shadows. However, A. Kligman's studies on corneotherapy have shown that they are at least as important as active agents. Corneotherapy was able to demonstrate that even on problem skins clinical effects could be achieved which so far had been known only with the help of pharmaceutical agents and, there are absolutely no side effects to report. Latest dermatological studies regarding the so-called derma membrane structures (DMS) which are emulsifier free bases show similar results. In combination with the appropriate water free preparations like oleogels they are perfectly suitable for a preventive long term care of the eye area.

Useful helpers for the treatment of eye problems

Moisturizing substances like e.g. aloe vera, algae, cucumber, D-panthenol and amino acids are the main substance group for the eye care. Quite a few of these agents definitely are multi talents. In addition to that aloe has anti-inflammatory effects, algae antimicrobial, cucumber tightens the skin and D-panthenol supports the cell formation in case of inflammatory processes. Also successful have been avocado oil, grape seed oil and wheat germ oil. Besides their lipid substances they provide the

skin with phytosterols which improve the barrier function, and with essential fatty acids whereas some of them have anti-inflammatory effects like the gamma linolenic acid in evening primrose oil, and also with vitamins like in the avocado or wheat germs. Oils in pure form are appropriate if the skin is hypersensitive and will not tolerate any products with water phases. The vitamins A, E and C in combination with panthenol are adequate components for masks in the eye area.

Vitamin K which above all has a stabilizing effect on the vascular system has only recently been used for the care of the eye area. Smoothing effects may be achieved with phytohormones as for example from soybeans and red clover. They stimulate the collagen synthesis and the cell formation and slow down the collagen degradation. It is recommended to treat cornification disorders and also acne with phosphatidylcholine which is rich in linoleic acid. This also applies for comedones and the prevention of milia. Phytosterols of the shea butter (see also avocado oil) are successful in cases of barrier disorders. Inflammatory barrier disorders can also be treated with lipid soluble olibanum extract which acts as a 5-lipoxygenase enzyme inhibitor.

Recommended for peelings around the eye are enzymes as e.g. from pineapple or papaya. Before cream masks are applied the skin should be pretreated with a panthenol containing face tonic which makes the skin permeable for the following therapy with active agents.

Active agents are more effective in combination with liposomes (water soluble agents) and nanoparticles (lipid soluble agents). Liposomes are successfully used for normal to oily skin as they are an excellent treatment for bad skin. They can also be applied on low-fat skin however a NMF factor should be added here and it is further recommended to close the skin with a base cream in order to lower the TEWL to a normal level.

Hardening masks are handled similarly. First of all the active agent is applied, followed by a base cream and subsequently the mask which is removed after 20 minutes. Excellent hydrating effects can be achieved with vitamin K, liposomal NMF and spirulina masks.

Dr. Hans Lautenschläger