

# Eye care products – ingredients and effects

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Our eyes are like business cards for our internal frame of mind. Sadness, happiness, curiosity and almost every personal feeling can be read in our eyes and hence is communicated to our fellow human beings. Reasons enough to pay special care to our eyes and the eye area. This will keep them in optimal shape until we attain old age.

**E**ye care is not only a matter of cosmetics...

## Health-oriented and sports-minded

...and here we should begin mentioning that a nutrition rich in vitamins and a regular eye exercise routine and temperature stimuli on the one hand as well as avoiding long-term strains like extended work in front of the computer screen, poorly adapted glasses or bad room lighting on the other hand are as important for the eye care as the cosmetic treatment of the eye area. On top of that, it is absolutely no secret that sports-minded and health-oriented people have less trouble with lachrymal sacs, dark rings around the eyes, swollen eyelids and disorders of the connective tissue. A well-balanced skin hydration protects the skin against wrinkles as well. Cold water and ice treatments at least help to control the loss of elasticity, a condition that cannot totally be avoided in old age, and will induce an increase of adrenaline production and hence an adjuvant endogenous smoothing of the skin.

## Dry eyes

Constant draft, low humidity levels in winter and insufficient tears secretion lead to inflammatory processes and red eyes. Today the dry eye syndrome is widely spread and naturally also influences the skin appearance. It is an interesting fact that the medical eye therapy uses similar active agents as the cosmetic treatment (see below) as e.g. hyaluronic acid, cellulose and saccharide derivatives, polyvinyl pyrrolidone (PVP) to retain the moisture film, and hydrogenated phosphatidylcholine (PC) and triglycerides as lipid components. Liposomal products too are used in this connection. A serious problem in medical as well as in cosmetic products are preservatives. They may cause irritations and sensitization of the very sensitive organ.

## The skin is different

The skin around the eyes has weaker lipid and collagen structures than the other facial skin. On top of that, the skin diameter in this area also is thinner than the diameter of the other skin. Accordingly, any changes of skin elasticity are easier to detect. Dark rings around the eyes are a typical consequence of the thinner skin diameter as the internal blood vessels can be visible. In case that tissue and blood vessels are stressed due to insufficient sleep and excessive alcohol consumption, and if recovery phases are not adequately observed the pre-conditions for an effective long term cosmetic treatment are rather inadequate.

## Cosmetic instruments

The cosmetic eye care is based on four essential elements:

- Base care,
- Active agents,
- Adequate treatment procedures,
- Use of appropriate products without straining additives

**Base care:** Already here there are two different concepts: Many users favour aqueous **eye gels** which are more or less free of lipid components. Others prefer **lipid enriched products** ranging from W/O emulsions to oleogels (water free). No other skin area involves so many subjective perceptions and expectations regarding the product selection. Both of the product groups provide reasonable arguments for their use.

*Eye gels* - gels generally have a cooling effect and this is the reason why consumers rate the gels as rather agreeable to use. They protect the eye area as they are easy to apply without any mechanical stress. And by the way, gels can optimally be combined with water soluble moisturizing substances.

Regarding their composition and application however there are some basic hints to observe: In case that the gels do not create superficial water retaining films as e.g. if hyalu-

ronic acid or other mucous generating agents like aloe vera, algae or CM glucan are added, they should be applied only sparingly or otherwise be combined with an additional lipid enriched cream. Why that? As the water in the gel evaporates the moisturizing substances will concentrate and if the gel is frequently and abundantly applied there may be an immanent risk of overdosing the moisturizers. This however can be avoided by a water retaining film on the surface. The following treatment with a refatting cream though will not retain any water, however it will impede that it can evaporate.

*Eye cream* - eye creams provide moisturizing substances and lipids in various combinations. There are O/W as well as W/O emulsions on the market. In order to achieve easy and comfortable spreading they are frequently combined with spreading oils which, however, are rather misplaced in eye creams as they may easily cause irritations of the mucous membrane of the eye. In case of extremely sensitive skin it is recommended to use preparations without any emulsifiers. Products with DMS technology (DMS = Derma Membrane Structure) or water free oleogels belong to this specific category. The advantage of the last named is that they do not require any preservatives (see above) per se. Their disadvantage is that they practically do not contain any moisturizing substances. In this case it is however possible to firstly apply an active agent in pure form (see below). This combination allows to individually and optimally control skin hydration as well as lipid content of the skin.

An effective compromise solution here are eye gels with emulsifier free DMS concentrate. They provide the specific properties of a gel, contain lipids and yet are free of emulsifiers. These formulations are now on the market as finished products. It is however also possible to combine a moisturizing base gel with a DMS base cream and appropriate active agent concentrates as individually needed. A professional skin diagnosis based on adequate measuring devices helps to determine the amounts and active agents necessary.

### Ampoules and concentrates

Specifically for the eye area there is a great variety of different active agents to apply in pure form as concentrates before the skin care cream. Alternatively, they are contained in finished products.

Needless to say however that not every substance keeps to the promised effects particularly regarding a long term use. Therefore it is necessary to distinguish between short term oriented effect agents and preventive agents

for the long term care. Yet, both the substance groups have their *raison d'être*. The effect oriented agent is characterized by its strictly temporary results. Substances and extracts with relaxant effects on the muscles that cause mimic wrinkles belong to this group for instance. Substances with long term effects are e.g. essential fatty acids and choline - with optimal results promised if combined in one single molecule called phosphatidylcholine.

An effective long term UV protection is of fundamental importance. In this connection, **sun glasses** and a **shady spot** are the best pre-conditions. A permanent use of sun blockers is not necessary and stresses the skin. It makes more sense to use sun protection creams when actually needed. **And, a tip on top:** no UV filter will protect against the infrared radiation of the sun (heat radiation). Intense IR radiation combined with an excessive heating of the skin will above all damage the connective tissue in the long run.

**Another tip:** As from own personal experience it can be stated that vitamin K not only can stabilize the superficial blood vessels but also visibly strengthens a weak connective tissue.

### Masks and modes...

In order to achieve immediate effects it is possible to combine masks with active agents. Masks may consist of particularly enriched creams and are abundantly applied around the eyes, sometimes even with a light massage. After their application time only the surplus cream is removed. As a general rule, cream masks do not require a finishing treatment. Modeling masks with a three-stage structure are different though. In this case, the active concentrates are applied first which then are followed by a base cream or oil and as a finishing touch by a hardening mineral paste. The basic idea is to create occlusive conditions for a limited interval of about 20 minutes. Possible skin redness and irritations may be treated easily with linseed or evening primrose oil nanoparticles as well as echinacea extract. Appropriate "mould oils" are grape seed and rose hip oil, both characterized by their high content of essential fatty acids. It should be avoided however that calcium sulphate based modeling masks are directly applied on the skin as the natural fatty acids of the skin will react with the calcium ions and thus affect the barrier layers of the skin.

One of the advantages of these masks is their variability. Depending on the individual needs there is a variety of different substance groups available:

**Revitalizing:** Caffeine from tea products supports the micro circulation and coenzyme Q10 the lipid metabolism.

**Recovering:** Vitamins A, C and E, D-panthenol, avocado oil, wheat germ oil, grape seed extract.

**Smoothing:** Butcher's broom, hyaluronic acid, peptides, para cress, CM glucan, vitamin K and cucumber.

**Soothing:** Linseed oil, evening primrose oil, aloe vera, echinacea, hamamelis.

**Blemished skin:** Yeast, boswellia, phosphatidylcholine, red clover.

**Dark rings:** Vitamin K.

**Skin hydration:** NMF amino acids, urea, mineral salts.

trol. Oils on the other hand are easy to mix with other oils in order to achieve particular massaging properties.

Dr. Hans Lautenschläger

## Make up products

A make up that is adapted to the specific sensitivity of the eyes will compliment the eye care treatment. A guiding principle here are the specific criteria for problem skin. This topic has already been covered in articles in the periodicals Kosmetische Praxis 6/2006, pp. 8-9 and Pharmazeutische Zeitung 8/2008, pp. 28-30.

It is particularly important to use foundations that will not impair the natural regenerative activities of the skin. Among other criteria though it has to be decided whether the products should contain mineral based lipid substances or mainly vegetable based oils. These issues have been discussed in the magazine BEAUTY FORUM 3/2008, pp. 102-106.

## Avoiding additives

The recommendations below apply for each of the following treatment procedures like cleansing, peeling, toning and massages: Largely avoid counterproductive ingredients like preservatives, aggressive tensides or perfumes with allergenic potential.

In most of the cases it is sufficient to **cleanse the skin** with lukewarm water. A cleansing milk without emulsifiers or a vegetable oil can be helpful to **remove the make up**.

If a **peeling** is needed, it is recommended to use enzymatic products that do not contain abrasive particles.

The alcohol content in **toning formulations** should not exceed 12 per cent. This specific alcohol content still has anti microbial effects without dehydrating or irritating the skin.

**Massages** can be applied with water containing creams. Recommended here are emulsifier free base creams to combine with the appropriate oils shortly before their use. If base creams contain additives to control their consistency, the skin should be abundantly covered with the product in order to avoid an abrasive effect when the skin surface gradually dries up. Compared to the use of pure oils cream massages have the advantage that the massage product will not spread beyond con-