

Irritated skin - skin in a state of turmoil

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Irritation - what exactly does it mean? In general the term is explained as an overreaction to an insignificant or even trivial incident. Now, what applies for the area of mental balance may also be extended to the skin. Skin irritations, their causes as well as their treatment will be discussed in the following article.

Both, mental and skin irritations are closely related. Whenever we are excited the skin will flush, perspiration increases and the nerves close to the skin surface become increasingly sensitive. Quite a normal response as everybody knows, which, in stress situations or in case of a specific individual disposition may even lead to invidious immune reactions like neurodermatitis. The reaction may still prevail even if the triggering factor has disappeared for a long time already. Nervous reactions will follow and that is exactly how we come to full circle.

Yet, there are not only the extreme cases which throw the skin off balance. There are cases where irritations even are intended, just to mention fruit acid peelings, micro derm-abrasions or similar techniques applied in the cosmetic practice and intended to stimulate the regeneration of the skin. Also sun bathing will lead to stimulation as it increases the melanin production. This example shows that the dosage is one of the crucial factors i.e. whenever the external irritation can no longer be compensated, an erythema (sun burn) will develop. Substance overdose or a prolonged fruit acid peeling may as well involve the risk of cauterised skin.

Hence, there is a whole series of physical, chemical and biological factors with a potential to cause irritations due to an overdosage.

In case of chafing and pinching...

Besides sun burns which can be treated with filming agents like e.g. aloe, anti-inflammatory extracts as e.g. echinacea, D-panthenol and linoleic acid or choline containing liposomes, one of the most frequent causes of skin irritations is inadequate clothing. Tight-fitting clothing will lead to mechanical friction and soreness which can be compared with continued peeling of the skin. And, if on top of it, inadequate breathing of the clothing material leads to a humid microclimate, ideal conditions are given for swellings and a fungal colonisation. The skin barrier will be damaged and fungi will proliferate beyond control. Genital,

anal and foot areas are virtually predestined for it as they are also exposed to intense mechanical strain due to walking and sitting.

Seeking help in cosmetic products is the wrong way in this case. Even on the contrary: Increasing the cleansing and hygienic routines will further aggravate the condition. Cleansing products will degrease the skin in the respective areas. There is only one long-term solution which consists in wearing breathing clothes, optimally fitting shoes and also in a very limited use of surface active cleansing products. Warm water without any cleansing medium may solve the problem in a very short period; however this idea takes its time to get used to.

It considerably reduces the risk of allergic reactions differing from the irritations described above by excessive immune reactions to externally permeating traces of waterproofing agents, dye components, fashion jewels, deodorant biocides, etc.

In case of an unstable skin barrier, perspiration may also be a problem. The evaporation leads to a salt concentration which, compared with the skin tissue is hypertonic and therefore will generate an imbalance of the osmotic pressure. Sensitive persons may react here with itching, and scratching as the quite natural response will further damage the skin barrier. In this case excessive hygienic routines will also be the wrong way to solve the problem.

Irritants: acids, bases & co.

Severe chemical irritations of the skin by external substances will certainly be noticed right after contact and some examples here are the effects of acids, bases and occupational substances. Even dermatics like dithranol (cignolin) which is used for the treatment of psoriasis may lead to severe reactions and protracted dermatoses on healthy skin. If the contact cannot be avoided, it is recommended to use skin protection products and gloves as preventive measure and subsequently apply an appropriate skin care cream.

In case of inflammatory and itching skin areas base creams with evening primrose oil and urea have proved successful. Also olibanum extract (*boswellia sacra*) is supposed to promptly rebuild the skin balance. Due to the resin-like adhering consistency of *boswellia* the practical use was quite limited up to now until a procedure has been developed to encapsulate the substance in nanoparticles.

Some types of skin irritations develop over a certain period of time, especially if they are resulting from skin barrier disorders which are caused by the washout of barrier substances due to surface active substances. Hence, particularly affected are those persons employed in housekeeping and certain branches of industry who frequently come in contact with water containing smaller or larger amounts of detergent components like hospital staff, haircutters, cosmeticians, workers in the metal-processing industry and housecleaning business. Successful preventive measures here are barrier active creams and sometimes also the change to soft water as hard water generally causes additional skin damage.

A further reason for persisting skin irritations may be solvents used at the working place and for housekeeping activities which get onto the skin in high concentrations and consequently will also damage the skin barrier. Also alcohol and isopropanol belong to this group however only in concentrations of more than 20 percent. An after-shave lotion with high alcohol content is not the best selection for sensitive skin though.

The doors wide open for germs...

As already mentioned above, biologically induced skin irritations are caused by infections with germs. A healthy skin which, as we all know, has natural germ colonization is not susceptible as the skin barrier is in working function and germs are impeded from penetrating. Should it still happen, experience shows that it may be frequently attributed to water as the medium. After taking a shower or after a visit to the swimming pool but also after cleaning the hands, the skin especially the spaces between the toes and fingers are only superficially dried and tended. Hence, for quite some time after bathing the skin is swollen and moist and therefore open to attack for pathogenic germs.

Increased susceptibility can also be given after the use of immune suppressive drugs or in case of hereditary or acquired immunodeficiency. In these cases, emulsifier free creams with the same structure as the natural skin barrier layers are recommended.

Irritating cosmetic products

Apart from peelings as already mentioned above, there is a whole series of potential skin irritations and allergic reactions during the cosmetic treatment in the beauty institute. Primarily, the components of the products applied are suspected here, whereas the intolerances towards extracts, preservatives, perfumes and UV filters are the most frequent cases. The easier these substances are able to penetrate into the skin, the easier they will trigger irritating reactions. Just to say it with other words: the more the skin is thinned out and opened by peelings and similar treatments the more important are the components in the products used. Though preservatives and co. are explicitly licensed by the German Cosmetic Decree they are only tested for the intact and healthy skin. After abrasive treatments it is thus recommended to avoid products containing these substances at all.

Additionally, vitamins which normally are beyond any suspicion should also be mentioned in this connection. The irritation threshold of vitamin A for example is considerably lower after a micro dermabrasion than it is on untreated skin.

The intact horny layer acts like a reservoir and absorbs externally applied substances in order to release them as required. After the cosmetic abrasion of parts of the horny layer the depot capacity may be considerably reduced and follow-up treatments with respective substance concentrations may have additionally strained the skin so that it will respond even without the presence of problem substances. Even NMF substances should be applied with caution as in case of hypertonic application they tend to react like dried perspiration which, as already mentioned above may lead to temporary soreness and reddened skin.

Skin irritations which develop during the cosmetic treatment in the beauty institute are rather unpleasant though. Experience shows, that cautiously swabbing the affected skin areas with lukewarm water, if necessary with a vitamin K supplement may soon provide some relief. A further treatment with active agents should be avoided and a non-irritant base care be applied. In case of a tendency to dry skin and sensitivity towards hypertonic water phases a highly absorbent and water free oleogel may also be recommended to complete the treatment.

Sensitive skin

If sensitive skin can be diagnosed from appearance the whole repertoire of cosmetic

treatment has to be adapted accordingly. The active agents used in this connection should include aloe, CM glucan, hyaluronic acid, vitamin E, vitamin K, avocado oil, D-panthenol and phosphatidylcholine in form of liposomes and nanoparticles or skin-related base creams. Abrasive treatments should rather be avoided. Also the application of pure oils according to the ayurveda principles may enhance the treatment. Following the medical treatment with corticoids, olibanum extracts may be supportive and help to avoid possible recurrences.

Referring to the above mentioned sun erythema it should be mentioned that during and after the treatment of hyper pigmentations as for example treatments with tyrosinase inhibitors, the skin shows a higher sensitivity to UV radiation due to the deficient natural melanin protection. It is essential to wear protective clothing and to apply an effective sun protection product during this treatment.

Concluding, it should be stated that the selection of an appropriate cosmetic product is a significant criteria although not the only one to observe. If the specific product has not been adapted to the individual skin as well as the respective treatment, irritable effects are inevitable. In the cosmetic practice though an excellent professional training, precise skin diagnosis and adapted cosmetic treatments are the essential preconditions in order to avoid skin irritations.

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