

Neurodermatitis - specific prevention

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Neurodermatitis is a major strain for the persons affected, above all due to the permanently dry and frequently itching skin. A well-designed skin care with appropriate products helps to reduce these symptoms.

The percentage of reported cases of neurodermatitis also called atopic dermatitis or endogenous eczema varies from 10 to 20 per cent for children and from 3 to 5 per cent for adults. Fact is however, that there has been realized a continuous increase over the last years.

There are a lot of different causes for neurodermatitis attacks: passive smoking, physical and mental stress, food from milk to citrus fruits, allergens like dust mites, pollen, animal hair, textiles as well as skin irritations, infections and climatic conditions (sweating).

Prevention

There can however be established a connection between neurodermatitis and other atopic diseases like hay fever (allergic rhinitis) and allergic asthma. Generally, atopic diseases are based on a predisposition which can be attributed to a hypersensitivity of the immune system. Apparently also an insufficient development of the immune system in early childhood due to cultural influences plays a role. Today, neurodermatitis is the number one skin disease among children and obviously, children with a "sheltered upbringing" are affected more frequently.

The disease can affect body parts or the whole body. Frequently observed are itching spots in the bends of the joints, partly also weeping spots in the face and blisters on feet and hands.

Above all, the symptom of extremely dehydrated skin which remains even in between the intermittent attacks is a strain for the persons affected. The dryness can vary according to the season, e.g. increase in winter. The intolerable itching leads to scratching until the skin is completely sore.

Classical therapies

Acute attacks are usually treated with ointments which contain corticoids (cortisone) and/or urea. Cortisone has an antiinflammatory effect and urea is against itching and increases the skin hydration.

Further possible therapies for neurodermatitis are ray treatments for the whole body with UV-A and UV-B after saltwater baths (balneotherapy), taking immune modulators like cyclosporine A and interferon- γ or the topical treatment with tacrolimus.

Creams containing cortisone show disadvantages after a long-term treatment like skin atrophy which means an increased sensibility towards substances with allergenic potential. Among others also metabolic products of fungi which can be found on healthy skin belong to this group. Therefore, the attacks after stopping the cortisone treatment are usually more intense than the previous ones. The prevention of neurodermatitis ranges from coping with stress (mental stress), appropriate consultation on nutrition, the change of negative climatic conditions to a strategy of avoiding skin contact with substances that cause neurodermatitis. Changing to a nutrition low in allergens together with an accompanying relaxation therapy may have very positive effects.

Preventive measures

As the substances causing the attacks penetrate the easier the drier the skin is, neurodermatitis patients are particularly susceptible for preservative and perfume allergies specifically in cases where the skin permeation is increased due to a long-term cortisone therapy.

Also micro-organisms (fungi, bacteria and viruses) penetrate easier and may cause inflammations. Therefore the prevention of dry skin which is the visible symptom for a skin barrier disorder is very important. Furthermore it is recommended to aim at a cortisone-free treatment on a long-term basis.

Just like neurodermatitis, also the phenomenon of dry skin is more frequently diagnosed in comparison to past years. Experts agree on the fact that the appropriate selection of skin care components plays an important role.

Some ingredients in the components generally used today are definitely counter-indicated for

neurodermatitis patients as well as for individuals with dry skin:

Mineral oils (besides water the most frequent ingredient) and related substances like vaseline and ceresin leave a very pleasant and smooth feeling, but in the long run they slow down the self-regenerating energy of the skin. The same applies for the widely used silicones.

Checking the ingredients

Emulsifiers are additives with the useful property of combining fat substances and water into a cream and transporting the substances into the skin. Unfortunately they also have the disadvantage of dissolving ingredients of creams and skin-own substances out of the skin.

A frequent cleansing with water rapidly leads to a dry skin condition and depending on the type of emulsifier to severe skin barrier disorders. These effects attributed to mineral oils and emulsifiers cause the consumers to think that they cannot do any longer without (lots of) skin care creams. In reality their skin has become dependent on those substances and it takes quite a while to regain their independence.

The adaptation to an emulsifier free skin care with natural fat substances in the long run stimulates metabolism and the regeneration of the skin barrier layers.

Emulsifier free skin care

Applying emulsifier free skin care products leads to a reduced transepidermal water loss (TEWL) of the untreated skin, which can be a measure for the integrity for the skin barrier layers. Even if the application of the cream has been forgotten the skin still is not completely dry. The linoleic acid containing ceramide I is specifically important for the integrity of the skin barrier layers. The lower its concentration in the skin barrier is, the more frequent the scaly and dry skin conditions can be observed. Measurements have shown that the ceramide I content in the skin of neurodermatitis patients generally is particularly low. Therefore skin care products have proven successful which are able to penetrate linoleic acid in combined form into the skin.

Specifically liposomes and nanoparticles are suitable for the penetration. To soothe the itching, urea additives have very positive effects. As liposomes and to a certain degree also nanoparticles increase the permeability of the skin a follow-up treatment with an

emulsifier free and fat rebalancing cream is recommended to close the skin barrier again.

Protecting the skin barrier

Meanwhile, the so-called DMS-creams have established their reputation of preserving a self-contained skin barrier. DMS is an abbreviation for derma membrane structure and is used for creams whose chemical and physical composition is related to the natural skin barrier. Besides their application for the supportive prevention of neurodermatitis, dermatologists more and more prescribe the DMS creams on private recipes. Among the skin care products neurodermatitis patients can tolerate extremely pure vegetable oils and waxes, e.g. olive and jojoba oil.

As oils in pure form have the disadvantage of leaving an unpleasant oily film, it was managed to bring them into a consistency where they can be handled like creams but still remain free of water (oleogels).

Being free of water means that there is no need for preservatives. Even the minor skin irritations caused by the evaporation of water in water soluble substances which are comparable with the drying salt water on the skin (sea water) are inapplicable here.

Skin cleansing

A skin care factor which frequently is neglected by individuals with skin barrier disorders is skin cleansing. A daily shower bath with shampoo and/or cleansing syndet acts like poison on the skin of neurodermitics, as all these products are degreasing the skin and washing out the few natural barrier substances that are still left. If possible, only pure water should be used and also frequency and duration should be reduced. Especially in areas with very hard water attention should be paid on the fact that the calcium ions included here may easily penetrate in cases of a skin barrier disorder and further continue its destruction. Dermatoses can be frequently observed with individuals who work with water and materials rich in calcium like gypsum and mortar.

Of course, also for the neurodermatitis patient water and a cleansing agent are indispensable in cases of severe pollution. A tried and tested remedy here is the good old curd soap but diluted and only for a moment. Low concentrations of the salts of the stearic and palmitic acids included in the curd soap can be neutralized by the acid layer of the skin and transformed into skin-identical acids. However, when applying them purely or in high concentration they have harmful effects as the

neutralization capacity of the skin is overtaxed and the skin starts to swell.

In any case, products have to be avoided which contain ethoxilized alcohols and other ethoxylates ("PEG's") which can be recognized at the particles at the end of the INCI code "...eth". Also included here are the frequently used refatting agents. Just like the creams containing ethoxylates they have a lasting negative influence on the skin as the body is not able to break them down. Furthermore, after light exposure they can cause inflammatory reactions on the skin (Majorca acne).

Sodium laureth sulfate (INCI: Sodium Lauryl Sulfate) which still is the effective cleansing substance in many of the cleansing products should also be avoided. It is used in dermatological tests today as a standard irritant for comparative purposes.

Oil baths

Dermatologists rather controversially discuss skin care products of this type as only new developments on the base of skin-related membrane substances (Kosmetik International 2001 (3), 98-100) achieve their objective of a greasing of the whole body; traditional products rather have the adverse effect, they degrease the skin.

Perfumes & Co. are a taboo topic

As already mentioned, perfumes and preservatives are a taboo topic for neurodermatitis patients as they easily penetrate the skin due to the skin barrier disorder. It is important to study the INCI codes on the products. Also chemical filters used in sun protection products should largely be avoided. Generally can be maintained that the skin care products used should preferably have only very few different physiological components without allergenic potential.

Choosing the appropriate clothes

The clothes of neurodermitics is supposed to be light and breathing as the salts the sweat releases when evaporating may be irritating for the skin. All materials which increase the itchiness, e.g. wool have to be avoided. Furthermore, there should be paid attention to impregnations and other additives as they may be the cause for the initial irritation.

It can be very helpful for neurodermitics to seek contact to a self-help group as personal experiences can be exchanged.

Dr. Hans Lautenschläger