EUROPEAN ACADEMY OF DERMATOLOGY & VENEREOLOGY

Information Leaflet for Patients

Atopic dermatitis

The aim of this leaflet

This leaflet is designed to help you understand more about atopic dermatitis. It tells you what atopic dermatitis is, what causes it, what can be done, and practical advice for managing this condition.

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Atopic dermatitis

What is atopic dermatitis?

Eczema is a general term to describe skin that is inflamed (red, swollen, scaly and itchy). The most frequent form of *eczema* is atopic dermatitis, also known as *atopic eczema* or *neurodermatitis*. The best way to know if you or your child has atopic dermatitis (and not another form of *eczema*) is to consult your clinician. Dermatologists, pediatricians, allergists and some general practitioners are specialised in treating atopic dermatitis. There is usually no need for a blood test or allergy tests to know if you have atopic dermatitis.

How common is atopic dermatitis?

Atopic dermatitis is a common disease. Approximately 10-15% of children and about 3-5% of adults are affected by atopic dermatitis in Europe, but this varies. Atopic dermatitis seems to be more frequent in large cities and in industrialised countries than in rural areas. The reason for this is still unclear, but environmental and lifestyle factors are most likely to blame.

What does atopic dermatitis look like, and what are the signs and symptoms?

Adults and children affected by atopic dermatitis typically show symmetrical red patches of inflamed, dry, itchy skin. These patches may be located on the cheeks (especially in toddlers), arms, legs, wrists, and often skin around the joints. The location of atopic dermatitis patches depends on each individual and may be anywhere on the body surface. Sometimes, the skin thickens when atopic dermatitis has been present for a long time. Atopic dermatitis skin may leak clear fluid ("weeping"), ooze, or bleed during "flare-ups" (a period of worsening/exacerbation; see further information afterwards in "What is a flare-up?"), especially after intense scratching. Atopic dermatitis almost always causes itch, and sometimes pain or burning.

What causes atopic dermatitis?

It is not clear what the cause of atopic dermatitis is. There is probably not one single cause of atopic dermatitis. Several inborn/hereditary and acquired (developed after birth) factors interact with each other to produce the disease, such as dysfunction of both the immune system and the skin barrier (what is usually the protective outer layer of the skin).

Is atopic dermatitis an allergy?

Atopic dermatitis is a complex disease, and a major part of the cause of atopic dermatitis is an allergic dysfunction. Allergy is a harmful response of the body's immune system to normally harmless substances, such as pollens, foods, house dust mites, and other allergens (substances that lead to an allergy). In some atopic dermatitis patients, these allergens may trigger flare-ups of atopic dermatitis. However, the vast majority of atopic dermatitis patients should not follow a specific diet. All diets, especially for children, must be discussed with your clinician, as a diet might otherwise cause harm.

How does atopic dermatitis develop?

Atopic dermatitis is a long-lasting form of eczema which usually starts during childhood, often improving with age, but sometimes lasting into adulthood. Some people may also have atopic dermatitis that starts during adulthood. Factors that are associated with chronic disease include early

onset of disease and presence of an allergic disease such as asthma and/or hay fever.

What is a flare-up?

A flare-up is a period of exacerbation, involving severe itch and very inflamed, painful skin. Some people may experience acute flare-ups alternating with "quiet" phases of mild itch and minor skin inflammation. Even between flare-ups, the skin is often very reactive to temperature changes, stress, or irritant skin products. However, when your skin is already constantly itchy and inflamed, it is difficult to clearly identify flare-ups.

What causes a flare-up in patients with atopic dermatitis?

Trigger factors causing flare-ups vary between individuals. Some classic triggers are weather changes, hot showers, bubble baths, harsh soap, heat, wool, perfume, skin products, sweat, emotional stress, or eating certain foods. Flare-ups are more common during months with low temperature and humidity. Moreover, bacterial and viral infections can worsen atopic dermatitis.

What are the consequences of more severe atopic dermatitis?

Severe atopic dermatitis is more likely to cause sleep loss and fatigue, chronic stress, and even depression. Atopic dermatitis may have significant impact on the quality of life of patients of all ages, as well as their families. It is very important to speak to your clinician if you feel that your atopic dermatitis makes you sad or disturbs your social and/or personal life. If your child has atopic dermatitis with sleep problems, be aware that it may cause some learning issues at school or have an impact on your occupational activities.

What are three important things to know about the treatment of atopic dermatitis?

It is very important to understand 3 points to avoid misunderstandings with health care providers:

1. Atopic dermatitis is a chronic disease, which lasts several years in most cases. It does not mean that you or your child will have atopic dermatitis for their whole life, as most children get better as they grow up. Even when people continue to have atopic dermatitis as adults, they frequently experience quiet, long, stable periods.
2. Atopic dermatitis is not due to an allergy to a single allergen, but allergies, for example against food, may co-exist with atopic dermatitis and sometimes trigger flare-ups.
3. Even if atopic dermatitis can't be cured by a simple short treatment (as an infection is cured by antibiotics), it is possible to control atopic dermatitis over the long term so that life can be as normal as possible for patients. Well-conducted treatment can make a significant difference in the disease.

How to treat the red patches/ inflammation of atopic dermatitis in daily life?

- The most frequently used medication to treat the red patches is topical steroids. Most of the time topical corticosteroids (TCS) are applied only once daily, preferably in the evening.
- There are different strengths of topical steroids (mild, moderate, potent, or super-potent) and different formulations (creams, ointments, lotions, or foams) available. Your clinician will prescribe the most adapted strength and formulation according to your age and location of the patches.
- Another frequently used medication to treat the red patches is topical calcineurin inhibitors (TCI).
- There are only two different TCI available, tacrolimus ointment and pimecrolimus cream.
- It is important to treat the red patches with TCS or TCI, as it is the best way to reduce itch and scratching, which drives the disease process further.
- Antihistamines rarely help the itch in atopic dermatitis, unless they have sedating properties.
- Treating the red patches contributes to reinforcing your skin barrier.
- TCS and TCI must be applied until the itch is gone, the red patches disappear, and the skin becomes smooth again. It is very important to not stop TCS or TCI too early to avoid rapid rebound. An approach of gradual tapering in frequency may be best, and flare prevention treatment 2-3 times per week during the maintenance phase is sometimes used.
- Another important thing to bear in mind is to start TCS or TCI as soon as the red patches appear. This is when the skin turns pink and becomes slightly rough. Do not wait for a severe flare-up before starting. If you wait too long before starting the treatment, it will be much more difficult to treat the flare-up.
- Sometimes your clinician will prescribe wet bandages on top of topical steroid applications (see wet wrapping tutorial) in order to boost the efficiency of the treatment.

Are topical steroids dangerous?

Topical steroids are generally very effective and safe, but people with atopic dermatitis frequently have fears about using them. Topical steroids must be differentiated from oral steroids (steroids that are taken in the form of a tablet or syrup). Topical steroids are much safer than oral

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steroids, as they are applied directly on the inflamed skin without affecting the entire body. Side effects are very rare when topical steroids are used in acute atopic dermatitis as prescribed by your clinician. Besides, they may be useful for maintenance treatment to prevent flares. However, if you are an adult or adolescent with atopic dermatitis, you should be aware of two particular situations to avoid side effects:

- Potent topical steroids should not be applied every day on the face for more than one month, because it may induce skin fragility and redness. Intermittent use, for instance application of the topical steroids every other day or 2 times a week, will reduce the risk of side effects.
- Applying topical steroids on the inside of the thighs and increases of the breasts (in females) for longer periods of time may induce stretch marks, particularly in adolescents. Similarly, pregnant women with atopic dermatitis should be cautious when applying steroids on the abdomen to avoid stretch marks.

What are TCI for atopic dermatitis and are they safe?

Maybe your clinician prescribed you tacrolimus or pimecrolimus. These TCI are steroid-free topical treatments. They are not more efficient than topical steroids but may be useful if you have chronic atopic dermatitis, especially on the face or eyelids. They may also be useful on other body locations during the maintenance phase to prevent flare-ups. Both tacrolimus and pimecrolimus are safe to use in children and adults. There is no evidence that topical calcineurin inhibitors may cause cancer. These products do not cause stretch marks, but may cause a stinging sensation, especially at the beginning of treatment.

How about skin infections?

If you have atopic dermatitis, you may have had one or several infections of the skin.

- The skin barrier is fragile in atopic dermatitis sufferers and some microbes such as the bacterium staphylococcus aureus are numerous at the surface of the skin, even in uninflamed skin. Skin
- Infections due to staphylococcus aureus may cause painful yellow crusts on the skin and make your atopic dermatitis worse. This type of infection may need treatment with antibiotics prescribed by your clinician, but can often be solved with increased use of steroid creams. Diluted bleach baths, or other disinfectants, can also be helpful here. Consult your clinician to learn which possibilities are available to you.
- People with atopic dermatitis may also experience episodes of skin infection with a virus such as herpes. Therefore, family and friends with a known or suspected history of herpes virus (e.g., cold sores) should avoid contact with atopic dermatitis sufferers when they are having an active outbreak of herpes.

When and how should atopic dermatitis be treated with systemic drugs?

Most atopic dermatitis patients can be treated well with a combination of emollients and topical anti-inflammatory creams. Severe atopic dermatitis may need systemic drugs for disease control. These drugs may be given orally as pills or subcutaneously as injections. Oral steroids have some risk and little benefit and should mostly be avoided. Cyclosporin A is a fast-acting, immunosuppressive drug licensed in many European countries. Methotrexate, Azathioprine and Mycophenolate are slower-acting immunosuppressive drugs, which are sometimes used by experienced specialists. Dupilumab is a new biolog-

ical drug recently licensed in the EU. It targets only part of the immune system, which is overactive in atopic dermatitis patients. Systemic treatment of atopic dermatitis should be given by experienced specialists only.

What is practical advice for skin care in atopic dermatitis?

- Use gentle non-perfumed washing products (synthetic detergents) and not soap.
- Avoid prolonged hot baths, prefer short lukewarm baths (5-10 minutes) or showers.
- There is no clear recommendation regarding the frequency of baths or showers. Every-other-day or even every day seem to be fine.
- Use an emollient after bathing or showering directly after gently patting the skin dry. The skin can still be a little wet as you apply the emollient.
- Using an emollient regularly is the best way to reinforce your skin barrier. It can be applied either in the evening or in the morning, especially when combined with an anti-inflammatory treatment with TCS or TCI (see above).
- When combined with an anti-inflammatory treatment, emollients should be applied after the anti-inflammatory application.
- The emollient should be as allergen-free as possible. You can use either an ointment (greasier) or cream (lighter), depending on your or your child's preference, degree of skin dryness, and the season.
- Sometimes using emollients on very inflamed skin may cause burning sensations. This should not be interpreted as an allergy to components of the emollients. Sometimes your clinician will tell you to stop emollients during acute flare-ups for a few days.

Abbreviations:

TCI: topical calcineurin inhibitors

TCS: topical corticosteroids

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