



# Skin care of atopic dermatitis in a beauty salon

## *Pielęgnacja skóry osób chorych na atopowe zapalenie skóry w gabinecie kosmetycznym*

### ABSTRACT

Due to the over-reactivity to all stimuli, the skin of people suffering from atopic dermatitis (AD) is a challenge for a cosmetologist.

The article reviews professional methods of skin care for people with AD. In addition, it also presents the main ingredients in the preparations recommended for this kind of skin.

Properly selected and carried out procedures significantly improve the skin condition, and thus develop both the physical and emotional comfort of the patient's life. Any activities related to the professional care of this type of skin should only be carried out during the remission of any active inflammatory changes in the skin.

**Keywords:** atopic dermatitis, atopic skin care, cosmetology treatments

### STRESZCZENIE

Z uwagi na nadreaktywność na wszelakie bodźce, skóra osób chorych na atopowe zapalenie skóry (AZS) stanowi wyzwanie w pracy kosmetykologa.

W artykule dokonano przeglądu specjalistycznych metod pielęgnacji skóry klientów gabinetów kosmetycznych chorych na atopowe zapalenie skóry. Ponadto przedstawiono również główne składniki zawarte w preparatach stosowanych do jej pielęgnacji.

Odpowiednio dobrane i przeprowadzone procedury, w znacznym stopniu poprawiają kondycję skóry, a tym samym polepszają zarówno fizyczny, jak i emocjonalny komfort życia chorego. Jakikolwiek czynności związane z profesjonalną pielęgnacją tego typu skóry powinny mieć miejsce wyłącznie w okresie remisji wszelakich aktywnych zmian zapalnych.

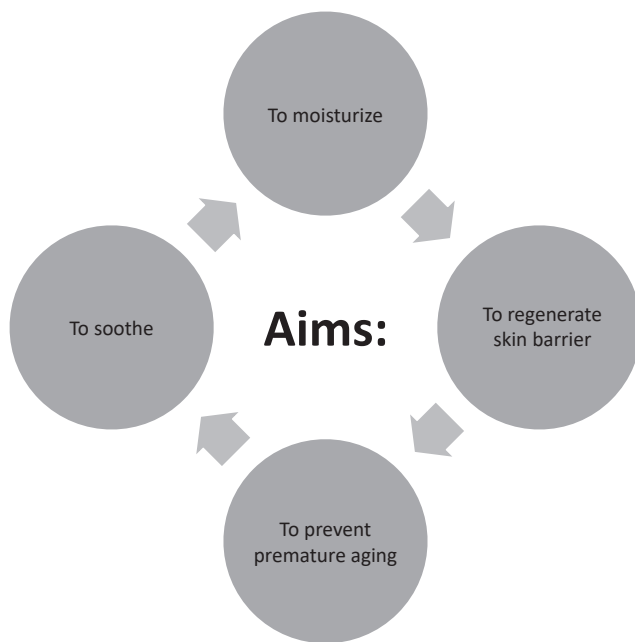
**Słowa kluczowe:** atopowe zapalenie skóry, pielęgnacja skóry, zabiegi kosmetyczne

### INTRODUCTION

In the case of clients suffering from atopic dermatitis (AD), professional care in a beauty salon focuses primarily on moisturizing, soothing, and strengthening skin barrier treatments. Moreover, defects in the structure of the skin, as well as limitations in the synthesis of collagen and elastin by the

steroid agents used in the treatment, make the anti-aging effect a fundamental factor (Fig. 1). Due to the requirement for non-invasive treatments, the application of masks or ampoules based on selected active ingredients is most popular. In the case of clients with AD, it is also possible to use non-aggressive apparatus methods [1-6].





**Fig. 1** Aims in care of atopic skin  
**Source:** Own study

## MASKS

Algae masks are used in treatments for atopic skin due to their wide range of properties. They increase the level of skin hydration and also contribute to the reconstruction of hydrolipid coat. In addition, they also exhibit soothing and nourishing properties. Treatments based on algae masks can be performed both on the face and other parts of the body [2, 3, 7].

Collagen masks are also used in moisturizing and anti-aging treatments for people with AD. They are in the form of dry patches made of freeze-dried ingredients applied to the skin. In order to soak them, an activator containing selected active ingredients is used. They show lifting and water-retaining properties [2, 7, 8].

Biocellulose and ceramide masks are also used in the care of AD skin. The biocellulose masks are utilized in soothing treatments due to their strong cooling and regenerating effects. On the other hand, thanks to their nutritional properties and the ability to prevent excessive water loss, they are used to moisturize and strengthen the skin's hydro-lipid coat [2, 4, 9].

## APPARATUS

In the care procedures of atopic skin, devices such as sonophoresis, iontophoresis, needle-free mesotherapy and oxygen infusion are used. The main aspect that combines these methods is the goal of increasing the absorption of active ingredients present in the preparations [10-12].

## Sonophoresis

It is based on the ultrasounds. They warm up the skin, also accelerate blood circulation and loosen the tissues in the treat-

ment area. Moreover, apart from enhancing the absorption of the applied substances, ultrasounds also speed up skin regeneration and enhance its elasticity [2, 8, 13].

## Iontophoresis

A direct current is used to force the active ingredients go deep into the skin. Two electrodes are used during the treatments - active and passive. The first one should be in direct contact with the introduced substance, while the second one is placed on a selected part of the body. This method uses dissociating compounds in aqueous solutions, gels or creams. Depending on their charge, the active electrode may be a cathode or an anode. The first variant applies to anionic substances, while the second is used for cationic substances. Such dependence causes that after the current flow is started, the active electrode repels ions with an opposite charge, which penetrate the other tissues, exerting a therapeutic effect on them [2, 8, 13].

## Needle-free mesotherapy

It is a combination of the two previously mentioned methods to support epidermal transport. In addition, this method also uses the phenomenon of electroporation, which increases the permeability of membranes in skin cells by electric current. Its impulses cause the formation of micro-holes with a size of a few nanometers in the skin, thanks to which the penetration of the desired substances is improved [2, 8-10, 13].

## Oxygen infusion

Is carried out through a special nozzle, through which pressurised oxygen forces the active ingredients deeply into the skin. In addition to the absorption-enhancing effect, this method increases the oxygenation of the skin, and thus improves its color and elasticity. Because that oxygen stimulates the skin cells to rebuild, oxygen infusion contributes to the strengthening of its structure [2, 13].

## Phototherapy

In beauty salon treatments recommended for clients with AD are also based on light therapy - irradiation with a lamp that generates infrared radiation. It is equipped with two filters - red and blue. For people with AD, the blue one is recommended. These treatments have an anti-inflammatory effect on the body, minimize irritation, redness, and exhibit calming effect. When carrying out the procedure of irradiation with an infrared lamp, it should be placed at the optimal distance from the body, from 30 to 120 cm, depending on the size of the lamp [2, 6, 14].

## EXFOLIATION WITH ACIDS

When treating people with AD, it is forbidden to carry out aggressive chemical peels. However, there is a group of acids which, applied to their skin, do not adversely affect it, but even improve its condition. These include gluconolactone

and lactobionic acid. These acids have an antioxidant effect and have the ability to bind water in the epidermis, resulting in in-depth skin hydration and reduction of free radicals. Moreover, they stimulate the work of fibroblasts, contributing to the increase in collagen synthesis, influences the density and elasticity of the skin structure [4, 14].

## ACTIVE INGREDIENTS

Taking into account the specificity of active ingredients in preparations used in the salon to care for atopic skin, they can be divided into four basic groups. Each of them is characterized by the following properties: moisturizing, soothing, strengthening the lipid barrier of the epidermis and anti-aging.

### Moisturizing properties

These are main elements of the natural moisturizing factor (NMF), such as urea, lactic acid, hyaluronic acid and collagen [13-17].

- **Urea** is a naturally occurring protein metabolite in the body. Depending on the concentration, it works in two ways - moisturizing or keratolytic. In the care of the skin of patients with AD, hydration is of key importance, which means that the preparations used do not contain a concentration higher than 10%. Urea, as an active ingredient, minimizes transepidermal water loss, and effectively neutralizes dryness and roughness of the skin. Being a component of the natural element of the human body, it does not show allergenic properties [16].
- **Lactic acid** belongs to the group of alpha hydroxy acids. This compound occurs naturally in sour milk, kefir and yoghurt. Used in preparations, it has moisturizing properties and lowers the pH of the skin.
- **Hyaluronic acid** belongs to the group of glycosaminoglycans. It is a component of connective tissue and the dermis. Its characteristic feature is extraordinary hygroscopicity. One of its molecules binds about 250 water molecules (in terms of units, it is estimated that one gram of hyaluronic acid retains 6 litres of water in the skin). It also exhibits skin firming properties, which is why it is used during anti-aging treatments [15, 17, 18, 19].
- **Collagen** is also naturally present in the body. The source from which it is obtained for cosmetic purposes are fish and cattle skins. Similarly, to the above-described hyaluronic acid, it helps to maintain an appropriate level of hydration, and thus gives the skin firmness and elasticity [4, 15, 17].

### Soothing properties

The basic compounds that make up this group of active ingredients are allantoin and panthenol. The natural sources of allantoin are comfrey, wheat, rice, and green beans. It has the ability to regenerate the skin as well as effectively reduces the feeling of dryness or tension. Allantoin, as one of the few substances, is distinguished by a very high safety of use due

to the lack of allergenic or irritating features [18]. The second mentioned soothing ingredient, panthenol, belongs to the group of polyhydroxy alcohols. This compound is a precursor of vitamin B5. Due to its low molecular size, it can penetrate deep into the epidermis. Preparations containing panthenol reduce irritation, eliminate the painful burning symptom and accelerate skin renewal processes [18, 19].

### Strengthening the lipid barrier of the epidermis

Gamma-linolenic acid belongs to omega-6 fatty acid, and its source is borage oil, hemp seed oil and evening primrose oil. When applied to the skin, it complements the intercellular space, and thus strengthens its structure [20, 21]. Another compound is squalene. In the chemical context, this substance is a hydrocarbon composed of six isoprene units. It is a component of shark liver fat as well as human tallow. Squalene primarily softens and nourishes the skin. In addition, it also provides antifungal and antibacterial properties. Squalene, a derivative of squalene formed by the saturation of its chemical bonds, is also used in cosmetic preparations. This substance perfectly oils and tones the skin [4, 20, 22].

### Anti-aging effect

Collagen and hyaluronic acid, due to their moisturizing properties, ensure the skin's elasticity and elasticity. Apart from them, this group also includes antioxidants such as vitamin E and retinol. The last one, apart from its anti-aging effect, reduces erythema and inflammation, which is particularly important in the case of the skin of AD patients [4, 23].

## SUMMARY

The skin of people suffering from AD is a great challenge in the work of a cosmetologist. Professional care is focused on: moisturizing, soothing, greasing and antioxidant activity. For this purpose, in beauty salons, mainly non-invasive treatments based on algae, collagen, biocellulose or ceramide masks are carried out. In addition, methods based on devices such as iontophoresis, sonophoresis, needle-free mesotherapy, as well as oxygen infusion are used to increase the absorption of active ingredients applied. The recommended active ingredients in cosmetic preparations include collagen and hyaluronic acid, which effectively increase the level of hydration and improve skin structure.

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