

# Skin Conditions I

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## Eczema/dermatitis

**Dermatitis** and **Eczema** are terms used interchangeably to describe a range of skin conditions characterized by dryness, erythema, and itch of the skin, often with weeping and crusting. However the term dermatitis is more correctly used when an external precipitating factor is present (contact dermatitis). While term eczema applied to conditions with endogenous cause in atopic individuals (Atopic eczema).

### Causes of Contact dermatitis

Contact dermatitis may be caused by substances that irritate the skin or spark off an allergic reaction. **Irritant contact dermatitis** is most commonly caused by prolonged exposure to water (wet work). Typical occupations include cleaning, hairdressing, food processing, fishing and metal engineering. Substances that can irritate the skin include alkaline cleansing agents, degreasing agents, solvents and oils. Such substances either cause direct and rapid damage to the skin or, in the case of weaker irritants, exert their irritant effect after continued exposure. Napkin dermatitis is an example of irritant dermatitis and can be complicated by infection, e.g. thrush.

In other cases, the contact dermatitis is caused by an **allergic response** to substances which include chromates (present in cement and rust-preventive paint), nickel (present in costume jewellery and as plating on scissors), rubber and resins (two-part glues and the resin colophony in adhesive plasters), dyes, certain plants (e.g. primula), oxidizing and reducing agents (as used by hairdressers when perming hair) and medications (including *topical corticosteroids*, *lanolin*, *neomycin* and *cetylstearyl alcohol*). Eye make-up can also cause allergic contact dermatitis.

### Patient Assessment

#### Age/distribution

Atopic eczema affects up to 20% of children, in many of whom it disappears or greatly improves with age such that 2–10% of adults are affected.

The distribution of the rash tends to vary with age. In infants, it is usually present around the nappy area, neck, back of scalp, face, limb creases and backs of the wrists. In white children, the rash is most marked in the flexures: behind the knees, on the inside of the elbow joints, around the wrists, as well as the hands, ankles, neck and around the eyes. In black and Asian children, the rash is often on the extensor surface of the joints and may have a more follicular appearance.

In adults, the neck, the backs of the hands, the groin, the ankles and the feet are the most common sites.

#### Itching

The condition is unlikely to be eczema/dermatitis if there is no itch. The skin is usually visibly irritated and the patient will often describe intense itching, which can disturb sleep. Babies or children will rub or scratch at the affected area. Long-standing or chronic eczema is characterised by thickened (lichenified) skin resulting from repeated scratching due to the itch.

### **Occupation/contact**

To know whether or not contact dermatitis is the problem, pharmacist can ask about:

Site of rash, details of job and hobbies, onset of rash and agents handled, and improvement of rash when away from work or on holiday.

### **History of hay fever/asthma**

Many eczema sufferers have associated hay fever and/or asthma. There is often a family history (in about 80% of cases) of eczema, hay fever or asthma. Eczema occurring in such situations is called atopic eczema. The pharmacist can enquire about the family history of these conditions.

### **Aggravating factors for Atopic eczema:**

- Hay-fever season.
- House dust or animal danders.
- Soaps or detergents and cold wind (dry the skin).
- Certain clothing such as woollen material can irritate the skin.
- Cow's milk, eggs and some food colouring (less than 5% of sufferers).
- Emotional factors, stress and worry can sometimes exacerbate eczema.
- Antiseptic solutions applied directly to the skin or added to the bathwater can irritate the skin.

### **Severity**

Severe contact dermatitis (badly cracked /fissured skin, bleeding), or sign of bacterial infection (weeping) required referral.

### **Medication**

- Contact dermatitis may be caused or made worse by sensitisation to topical medicaments.
- Topically applied local anaesthetics, antihistamines, antibiotics and antiseptics can all provoke allergic dermatitis. Some preservatives may cause sensitization.
- Failed medication need referral

### **Effect on quality of life**

In addition to physical symptoms, eczema and its exacerbations can have a profound effect on a patient's quality of life. People living with eczema are at a higher risk of experiencing depression, anxiety and stress. Self-consciousness about the appearance of visibly affected skin, stares and comments impact on self-confidence. Sleep disturbed by itching also has a negative effect on the well-being.

### **When to refer**

Evidence of infection (weeping, crusting, spreading)

Severe condition: badly fissured/cracked skin, bleeding

Failed medication

No identifiable cause (unless previously diagnosed as eczema)

No improvement after 1 week with topical corticosteroids

### **Treatment timescale**

For mild-to-moderate atopic eczema, irritant and allergic dermatitis. If no improvement has been noted after **1 week**, referral to the doctor is advisable.

## Management

1- All forms of dermatitis can cause redness, drying of the skin, and irritation / pruritus to varying degrees. Treatment should include three steps: managing the itch and avoiding the irritant (i.e. non pharmacological advice e.g.: wearing gloves to protect the skin) and maintaining the skin integrity.

Further advice could be given regarding the use of ordinary soaps that tend to dry the skin and their alternatives (soap substitutes).

2- The main agents used are emollients and steroid. Emollient used on regular basis to keep the condition under control and the flare-up is treated by short course of steroid.

## Emollients

- Emollients are the key to managing eczema and are medically inert creams and ointments which can be used to soothe the skin, reduce irritation, prevent the skin from drying, act as a protective layer and be used as a soap substitute.
- There are many different types of emollient preparations that vary in their degree of greasiness.
- The greasy preparations such as white soft paraffin are often the most effective, especially with very dry skin, but have the disadvantage of being messy and unpleasant to use. Patient preference is very important and plays a major part in compliance with emollient treatments.
- Several and frequent applications each day may be required to achieve full effectiveness.
- Standard soaps have a drying effect on the skin and can make eczema worse. Aqueous cream can be used as a soap substitute.
- Adding emulsifying ointment or a proprietary bath oil to the bath is helpful. Emulsifying ointment should first be mixed with water (one or two tablespoonful of ointment in a bowl of hot water) before being added to the bath to ensure distribution in the bathwater. Some patients with eczema believe, incorrectly, that bathing will make their eczema worse. This is not the case, provided appropriate emollient products are used and standard soaps and perfumed bath products are avoided, and in fact, bathing to remove skin debris and crusts is beneficial.

## Topical corticosteroids

1- Two topical steroids are now OTC for a limited range of indications, (mildly potent) Hydrocortisone cream and ointment and (moderately potent) Clobetasone 0.05%.

**Topical hydrocortisone** OTC is licensed for the treatment of irritant and allergic dermatitis, insect bites and mild-to-moderate eczema. OTC hydrocortisone is contraindicated where the skin is infected (e.g. athlete's foot or cold sores), in acne and on the face and anogenital areas. Children aged over 10 years and adults can be treated, and any course must not be longer than 1 week.

**Topical clobetasone** 0.05% can be sold OTC for the short-term treatment and control of patches of eczema and dermatitis in people aged 12 years and over (used for <7 days). The indications include atopic eczema and primary irritant or allergic dermatitis and exclude seborrhoeic dermatitis.

- 2- OTC topical corticosteroids should not be used on the groin, breast fold, genitals, or between the toes because these are common sites of fungal infections; nor on the face, as they can cause perioral dermatitis and acneiform pustules.
- 3- OTC topical corticosteroids should be used with fingertip units. A fingertip unit is the amount of cream you can squeeze on to your fingertip from the tip to the first crease. Half a fingertip unit will cover a patch of skin the same size as the palm of the hand.
- 4- Hydrocortisone cream can be applied as frequently as two to four times per day while clobetasone applied twice a day.

### Antipruritics

Antipruritic preparations are sometimes useful, although evidence of effectiveness is lacking. The itch of eczema is not histamine related, so the use of antihistamines other than that of sedation at night is not indicated. *Calamine* or *crotamiton* can be used in cream or lotion. A combination product containing *crotamiton* with *hydrocortisone* is available. Indications for use are the same as those for *topical hydrocortisone* for contact dermatitis (irritant or allergic) and mild-to-moderate eczema.

## Fungal Skin Infection/ Athlete's foot

Most often, tinea infections are named based on the area affected.

The incidence of athlete's foot (tinea pedis) is not, as its name might suggest, limited to those of an athletic disposition. The fungus that causes the disease thrives in warm, moist conditions. The spaces between the toes can provide a good growth environment and the infection therefore has a high incidence. The problem is more common in men than in women and responds well to OTC treatment.

Site	Name
Scalp	Tinea capitis
Feet	Tinea pedis
Groin	Tinea cruris
Body	Tinea corporis
Nails	Tinea unguium (onychomycosis)

### Patient Assessment

#### Appearance

Athlete's foot usually presents as itchy, flaky skin in the web spaces between the toes. The flakes or scales of skin become white and macerated and begin to peel off. Underneath the scales, the skin is usually reddened and may be itchy and sore. The skin may be dry and scaly or moist and weeping.

#### Severity

Athlete's foot is usually a mild fungal infection, but occasionally the skin between the toes becomes more macerated and broken and deeper and painful fissures may develop. The skin may then become inflamed and sore. Once the skin is broken, there is the potential for secondary bacterial infection to develop. If there are indications of bacterial involvement, such as weeping, pus or yellow crusts, then referral to the doctor is needed.

#### Location

Classically, the toes are involved, the web space between the fourth and fifth toes being the most commonly affected. More severe infections may spread to the sole of the foot and even to the upper surface in some cases. This type of spread can alter the appearance of the condition and severe cases are probably best referred to the doctor for further investigation. If the toenails appear to be involved, referral to the

doctor may be necessary because systemic antifungal treatment may be required to deal with infection of the nail bed where OTC treatment is not appropriate.

### **Previous history**

Many people occasionally suffer from athlete's foot. The pharmacist should ask about previous bouts and about the action taken in response. Any diabetic patient who presents with athlete's foot is best referred to the doctor. Diabetics may have impaired circulation or innervation of the feet and are more prone to secondary infections in addition to poorer healing of open wounds.

### **Medication**

One or more topical treatments may have been tried before the patient seeks advice from the pharmacist. The identity of any treatment and the method of use should be established. Treatment failure may occur simply because it was not continued for sufficiently long enough. However, if an appropriate antifungal product has been used correctly without remission of symptoms, the patient is best referred to the doctor, especially if the problem is of long duration (several weeks).

### **When to refer**

Severe, affecting other parts of the foot  
 Signs of bacterial infection  
 Unresponsive to appropriate treatment  
 Diabetic patients  
 Involvement of toenails

### **Treatment timescale**

If athlete's foot has not responded to treatment within 2 weeks, patients should see their doctor.

### **Management**

- Most cases of athlete's foot are minor in nature and can be treated effectively with OTC products.
- Formulations available for the treatment of athlete's foot include creams, powders, solutions, sprays and paints.
- Regular application of the recommended product to clean, dry feet is essential, and treatment must be continued after symptoms have gone to ensure eradication of the fungus. Advise use for 1–2 weeks after the disappearance of all signs of infection.

#### **1. Azoles (*Miconazole, clotrimazole, bifonazole and ketoconazole*)**

Topical azoles have both antifungal and antibacterial activity. (The latter is useful as secondary infection can occur.) The treatment should be applied 2-3 times daily for 1 week. Formulations include creams, powders and sprays. Azoles have occasionally been reported to cause mild irritation of the skin.

#### **2. Terbinafine**

*Terbinafine* is available as cream, solution, spray and gel formulations. Apply 1–2 times daily for 1 week. There is evidence that *terbinafine* is better than the azoles in preventing recurrence, so it will be useful where frequent bouts of athlete's foot are a problem. *Terbinafine* can cause redness, itching and stinging of the skin; contact with the eyes should be avoided. *Terbinafine* products are not recommended for use in children.

### 3. Griseofulvin

*Griseofulvin 1% spray* can be used OTC for the treatment of athlete's foot. The spray is used once a day and the maximum treatment period is 4 weeks.

### 4. Tolnaftate

*Tolnaftate* is available in powder, cream, aerosol and solution formulations and is effective against athlete's foot. It has antifungal, but not antibacterial, action. It should be applied twice daily and treatment should be continued for up to 6 weeks. *Tolnaftate* may sting slightly when applied to infected skin.

### 5. Undecenoates (e.g. zinc undecenoate, undecenoic acid, methyl and propyl undecylenate)

*Undecenoic acid* is an antifungal agent, sometimes formulated with zinc salt to give additional astringent properties. Treatment should be continued for 4 weeks.

### 6. Hydrocortisone cream or ointment

*Topical hydrocortisone* not recommended in athlete's foot because, although it would reduce inflammation, used alone would not deal with the fungal infection, which might then worsen. Combination products containing *hydrocortisone* together with an antifungal agent are available OTC for use in athlete's foot. Treatment is limited to 7 days. Therefore they are probably best used to control initial symptoms of redness and itch before switching to an imidazole only product after the initial 7 days of treatment. They are suitable for children over 10 years of age.

### Practical point:

1. Product should be applied after careful cleaning and drying of the foot especially between the toes.
2. Creams or solutions are the most effective dosage form for the delivery of active ingredient to the epidermis. Sprays and powders are less effective because they are often not rubbed into the skin. They are probably more useful as adjunct to creams and solutions or as prophylactic agents in preventing new recurrent infections.
3. They can be used during pregnancy.

## Acne

Acne vulgaris is a common condition in young people. It is not usually serious and resolves in most patients by the age of 25. However, it can have a significant psychological impact as it affects young people at a stage in their lives when they are especially sensitive about their appearance.

The pilosebaceous units in the dermis of the skin consist of a hair follicle and associated sebaceous glands. These glands secrete sebum –a mixture of fats and waxes– to protect the skin and hair by retarding water loss and forming a barrier against external agents.

Peak incidence of acne is 14–17 years in females and 16–19 years in males. The condition normally resolves in the majority of patients within 10 years of onset.

## Etiology

Acne is the result of a combination of several factors. The main processes involved are as follows:

1. The hormonal changes that occur during puberty, especially the production of androgens, are thought to be involved in the causation of acne. Increased keratin and sebum production during adolescence are thought to be important contributory factors; the increased amount of keratin leads to blockages of the follicles and the formation of microcomedones.
2. A microcomedone can develop into a non-inflammatory lesion (comedone), which may be open (blackhead) or closed (whitehead), or into an inflammatory lesion (papule, pustule or nodule).
3. Excess sebum encourages the growth of bacteria, particularly *Propionibacterium acnes*, which are involved in the development of inflammatory lesions. Acne can thus be non-inflammatory or inflammatory in nature.

## Patient Assessment

### Age

Acne commonly occurs during the teenage years and its onset is most common at puberty, although it may start to appear a year or so earlier.

#### *Very young*

Acne is extremely rare in young children and babies and any such cases should be referred to the doctor for investigation since an androgen secreting (hormone-producing) tumour may be responsible.

#### *Older*

For patients in whom acne begins later than the teenage years, other causes should be considered, including drug therapy and occupational factors. Oils and greases used at work can precipitate acne and it would be worth asking whether the patient comes into contact with such agents. Acne worsens just before or during menstruation in some women; this is thought to be due to changes in progesterone levels.

### Severity

Only **mild** acne can be managed by the pharmacist using OTC products, moderate and severe acne should be referred.

1-**Mild acne:** Patients suffering from mild acne characteristically have predominately open and closed comedones with few inflammatory (papulopustular) lesions mainly confined to the face. Mild acne is therefore characterized by the presence of a few to several papules and pustules the, but not nodules.

**2-Moderate acne:** A patient with moderate acne has many inflammatory lesions that are not confined to the face. Lesions are often painful and there is a possibility of mild scarring.

**3-Severe acne:** A patient with severe acne has all the characteristics of moderate acne plus the development of cysts. Lesions are often widespread involving the upper back and chest. Scarring will usually result.

### **Affected areas**

In acne, affected areas may include the face, neck, center of the chest, upper back and shoulders, i.e. all areas with large numbers of sebaceous glands. Rosacea is a skin condition that is sometimes confused with acne. Occurring in young and middle-aged adults, rosacea has characteristic features of reddening, papules and pustules. Only the face is affected. It is normally seen in patients over 40 years of age and is more common in women than in men.

### **Medication**

The pharmacist should establish the identity of any treatment tried already and its method of use. Inappropriate use of medication, e.g. infrequent application, could affect the chances of success. Information about current therapy is important, since acne can sometimes be drug induced. *Lithium*, *phenytoin* and the progestogens, levonorgestrel and norethisterone (e.g. in the combined oral contraceptive pill), may be culprits. If acne is suspected as a result of drug therapy, patients should be advised to discuss this with their doctor.

### **When to refer**

Moderate and

Severe acne

Failed

medication

Suspected drug-induced acne

### **Treatment timescale**

A patient with mild acne, which has not responded to treatment within 8 weeks, should be referred to the doctor.

### **Management**

- The general aims of therapy are to remove follicular plugs so that sebum is able to flow freely and to reduce the number of bacteria on the skin. Treatment should therefore reduce comedone formation.
- The most useful formulations are lotions, creams and gels. Gels with an alcoholic base dry quickly but can be irritating. Those with an aqueous base dry slower but are less likely to irritate the skin. A noncomedogenic moisturiser can help if the skin becomes dry as a result of treatment.
- The patient needs to understand that acne is a chronic condition and continuous treatment is needed to keep the problem under control.

### **Benzoyl peroxide (2.5%, 5%, and 10% gels, lotion, cream)**

*Benzoyl peroxide* has both antibacterial and anticomedogenic actions and is the first-line OTC treatment for inflammatory and noninflammatory acne. Anti-inflammatory action occurs at all



strengths. Anticomedogenic action is low and has the greatest effect at higher strengths. It has a keratolytic action, which increases the turnover of skin cells, helping the skin to peel. Regular application can result in improvement of mild acne.

Lack of knowledge about how best to use acne treatments together with occurrence of side effects is the main reason for patients not adhering to the recommended treatment.

#### **Advices on using benzoyl peroxide:**

- At first, *benzoyl peroxide* is very likely to produce reddening and soreness of the skin, and patients should be warned of this.
- Reddening and soreness can be minimized by beginning with the lowest strength preparation, start with a 2.5 or 5.0% product, moving gradually to the 10.0% strength if needed.
- Gels can be helpful for people with oily skin and creams for those with dry skin.
- *Benzoyl peroxide* prevents new lesions forming rather than shrinking existing ones. Therefore it needs to be applied to the whole of the affected area, not just to individual comedones, and is best applied to skin following washing.
- Benzoyl peroxide increases the risk of sunburn. Avoidance of sunlight is not always possible, so the patient should use an appropriate sunscreen or protect treated skin on the chest and back by wearing a t-shirt.
- Warning should be given that benzoyl peroxide can bleach clothing and bedding.
- Contact between benzoyl peroxide and the eyes, mouth and other mucous membranes should be avoided.

#### **Other keratolytics**

Other keratolytics include *potassium hydroxyquinoline sulphate* and *salicylic acid*. They are second-line treatments.

#### **Nicotinamide**

Topical nicotinamide has a mild anti-inflammatory action and is applied twice daily. There is limited evidence of effectiveness. Side-effects may include skin dryness and/or irritation.

#### **Antiseptic agents**

Skin washes and soaps containing antiseptic agents such as chlorhexidine are available. Such products may be useful in acne by degreasing the skin and reducing the skin flora. There is limited evidence of effectiveness.

#### **Topical Retinoids**

- Adapalene, tretinoin and isotretinoin are topical retinoids that are commonly prescribed by the doctor (POM).
- Retinoids are highly effective in the treatment of acne, retinoids stimulate epithelial cell turnover and aid in unclogging blocked pores. Thus, the retinoid family are highly active peelers.
- The drug should be applied once daily in a thin layer on the affected areas of skin for maximum 3 months.

- Adapalene is teratogenic, photoirritants drugs.

## Practical points

### Diet

There is no evidence to link diet with acne, despite a common belief that chocolate and fatty foods cause acne or make it worse.

### Skin hygiene

Regular washing of the skin with soap and warm water or with an antibacterial soap or skin wash can be helpful as it degreases the skin and reduces the number of bacteria present.

### Topical hydrocortisone and acne

The use of topical hydrocortisone is contraindicated in acne because steroids can potentiate the effects of androgenic hormones on the sebaceous glands, hence making acne worse.

### Antibiotics

- Oral antibiotic therapy, available on prescription (i.e. prescription-only Medicine [POM]), usually consists of tetracyclines.
  - Topical antibiotics (such as clindamycin 1%) are used as a treatment for mild-to-moderate acne, but they should always be prescribed in combination with benzoyl peroxide to prevent development of bacterial resistance.
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## Scabies

1. Scabies can be defined as a **pruritic skin condition** caused by the mite *Sarcoptes scabiei*. The infestation occurs at all ages and it is a common public health problem in poor communities.
2. The mite is transmitted by **direct physical contact**. Mating occurs on the skin surface after which the female mite burrows into the stratum corneum to lay eggs. The faecal pellets she leaves in the burrow cause a local hypersensitivity reaction that triggers an allergic reaction invoking intense itching (This normally takes 15 to 20 days in a primary infestation but can take up to 6 weeks to develop. In subsequent infestations this hypersensitivity reaction develops much more quickly).
3. During the asymptomatic period the mite can be passed onto others unknowingly. The eggs hatch and mature in 14 days after which the cycle can begin again.

## Patient Assessment

### Age

Scabies infestation can occur at any age from infancy onwards.

### Symptoms

Severe pruritus, especially at night, is the hallmark symptom of scabies (can lead to loss of sleep). The itch tends to be generalised rather than in specific areas.

Burrows can sometimes be seen as small thread-like grey lines. The lines are raised, wavy and about 5–10 mm long. Commonly infested sites include the web space of the fingers and toes, wrists, armpits, buttocks and genital area.

Patients may have a rash that does not always correspond to the areas of infestation. The rash may be patchy and diffuse or dense and erythematous. It is more commonly found around the midriff, underarms, buttocks, inside the thighs and around the ankles.

In adults, scabies rarely affects the scalp and face, but in children aged 2 years or under and in the elderly, involvement of the head is more common, especially the postauricular fold.

### **History**

The itch of scabies can take several (6–8) weeks to develop in someone who has not been infested previously. The scabies mite is transmitted by close personal contact, so patients can be asked whether anyone else they know is affected by the same symptoms, (e.g. other family members). In addition history is required to exclude possible allergic contact dermatitis.

### **Signs of infection**

Scratching can lead to excoriation, so secondary infections such as impetigo can occur. The presence of a weeping yellow discharge or yellow crusts would be indications for referral to the doctor for treatment.

### **Medication**

- It is important for the pharmacist to establish whether any treatment has been tried already.
- The patient should be asked about how any treatment has been used, since incorrect use can result in treatment failure.

### **Notes:**

- The itch of scabies may continue for several days or even weeks after successful treatment, so the fact that itching has not subsided does not necessarily mean that treatment has been unsuccessful.
- Treatment failure may have occurred if itching has not ceased after 3 weeks or if new area of itching continues to appear 7-10 days after treatment. In this situation patient should be referred to the doctor (Treatment failure should not be diagnosed before six weeks have elapsed).

### **When to refer**

Babies and children under 2 years  
 Infected skin  
 Treatment failure  
 Unclear diagnosis

### **Management**

Two treatments are recommended, 7 days apart. The treatment must apply to the entire body including the neck, face, scalp and ears in adults. Particular attention should be paid to the webs of fingers, toes and soles of the feet, and under the ends of the fingernails and toenails.

### 1. Permethrin (5% cream)

*Permethrin cream* is an effective scabicide treatment. For a single application in an adult, 30–60 g of cream (one to two 30-g tubes) is needed. The cream is applied to the whole body and left on for 8–12 h before being washed off (best time immediately before bed time). If the hands are washed with soap and water within 8 h of application, cream should be reapplied to the hands. Medical supervision is required for its use in children under 2 years and in elderly patients (aged 70 years and over). *Permethrin* can itself cause itching and reddening of the skin.

### 2. Malathion

*Malathion* is effective for the treatment of scabies and pediculosis (head lice). For one application in an adult, 100 mL of lotion should be sufficient. The aqueous lotion should be used in scabies. The lotion is applied to the whole body. The lotion can be poured into a bowl and then applied on cool, dry skin using a clean, broad paintbrush or cotton wool. The lotion should be left on for 24 h, without bathing, after which it is washed off. If the hands are washed with soap and water during the 24 h, *malathion* should be reapplied to the hands. Skin irritation may sometimes occur. Medical supervision is needed for children under 6 months.

### 3. Benzyl benzoate (25% in an emulsion basis):

Benzyl benzoate has been used to treat scabies for many years. It has now been superseded by more effective products. It has lower efficacy, and causes skin irritation and a transient burning sensation in approximately 25% of patients. This is usually mild but can occasionally be severe in sensitive individuals. In the event of a severe skin reaction the preparation should be washed off using soap and warm water. It is also irritating to the eyes, which should be protected if it is applied to the scalp. In addition, benzyl benzoate has an unpleasant smell. It must apply over the whole body; repeat without bathing on the following day and wash off 24 hours later; a third application may be required in some cases.

### 4. Crotamiton (Eurax®):

Crotamiton has antipruritic and weak scabidical activity. It is recommended for controlling residual itching after treatment with a more effective scabicide. It required application only two to three times a day.

#### Notes:

The treatment should be applied to cool, dry skin.

All the family members should be treated, preferably on the same day because they may be infested but symptomless.

The scabies mite can live only for around 1 day after leaving its host and transmission is almost always caused by close personal contact. It is possible that reinfestation could occur from bedclothes or clothing and this can be prevented by washing them at a minimum temperature of 50°C after treatment.

#### References:

1. Symptoms in the Pharmacy 9th Edition, 2022.
2. Community Pharmacy a guide to management of minor ailments 1<sup>st</sup> Edition, 2018.