Glossary of terms

Ankle flare  Tiny threadlike veins related to perforator incompetence; often precursors to venous ulceration
Atrophic blanche  Absence of pigmentation in the lower leg caused by skin thinning associated with venous leg ulcers
Cellulitis  Inflammation and redness of the skin associated with infection
Dermis  Inner layer of the skin containing blood vessels, nerves, sweat glands and ducts, hair muscles, and fat cells
Discoid  Chronic, recurrent eczema with coin shaped lesions (adults)
Eczema  Inflammation of the skin causing eruption and blistering
Emollients  Moisturisers which may be ointments, creams, gels or lotions
Endogenous eczema  From within with no obvious cause e.g. atopic eczema often associated with genetically linked conditions such as asthma; also caused by venous incompetence e.g. gravitational eczema
Epidermis  Outer layer of the skin consisting of five layers and including pores for sweat ducts and hairs
Erythema  Reddening of the skin
Excoriation  Erosion of the skin caused by the proteolytic enzymes in exudate
Exogenous  From without e.g. contact dermatitis often associated with the application of irritant topical preparations
Fissuring  Ridges in the skin which can extend into the dermis
Folliculitis  Localised infection usually found around hairs e.g. shaving
Hyperkeratosis  Thickening and dryness of the outer layer of the skin often associated with poor hygiene and product build up in leg ulcers
Induration  Hardening and lumpiness of the skin caused by fibrosed, woody scar tissue under the skin
Lichenified  Thickened skin caused by chronic irritation associated with eczema
Lipodermatosclerosis  Collective discolouration and induration indicative of venous disease
Maceration  Damage to the skin caused by excessive fluid e.g. exudate
Perfusion  Supply of arterial blood and oxygen e.g. to the leg
Pompholyx  Intensely itchy vesicles with no known cause (nickel allergy)
Pruritus  Itching caused by dryness or primary disorder e.g. psoriasis
Seborrhoeic  Eczema on the scalp with itchy, red, scaly skin (cradle cap)
Spongiosis  Oedema (swelling) in the epidermis
Staining  Brownish discolouration of the skin caused by the red cell deposits (haemosiderin) from the veins into the tissues of the skin
Stratum corneum  Outer layer of epidermis responsible for protection including Waterproofing
Striae  Stretching & thinning of the skin e.g. after long term topical steroids or stretch marks following excessive weight loss
Transdermal  Evaporation of moisture from the skin causing the stratum corneum cells to shrink with resultant moisture loss (TML) from each other leading to dry skin
Vesicles  Fluid filled blisters < 0.5cm in diameter
Xerosis  Very dry skin with some scaling

References

For further information visit www.activahealthcare.co.uk or ring our customer care line on 08450 606707

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Skin care

Skin conditions account for around 19% of all GP consultations, this is only a part of the overall problem as 80% of mild skin conditions are never presented to a medical practitioner. Failure of the skin is often viewed as being of minor consequence in relation to other medical conditions. Mortality rates are low, however, morbidity is high. Good skin care is relatively easy to provide and can aid control of chronic conditions, such as dry skin and eczema. It is also the key to the relief of frequently, distressing side-effects.

One of the main functions of the skin is as a barrier; it keeps the world out and holds us in.

In the stratum corneum (outer layer) cells are arranged in a neat flat pattern like crazy paving. They butt against one another and form a waterproof seal. The waterproofing effect comes from the lipids (oils) that are synthesised in the skin and in which the cells of the stratum corneum are bedded.

In dry skin conditions the cells of the stratum corneum shrink away from one another and allow potential irritants and bacteria to penetrate the surface. This shrinkage also allows evaporation of moisture from the skin. It may be helpful to visualise the bottom of a reservoir in a drought, the dried out mud plane is similar to how the skin would look under microscopy. This process is known as "trans-epidermal moisture loss".

The aim of any skin care routine is to replace the lost moisture and provide an artificial lipid layer over the skin’s surface to retain it. This very simple principle is invaluable in managing a wide range of skin conditions and maintaining a healthy skin.

Eczema and contact dermatitis

<table>
<thead>
<tr>
<th>Exogenous eczema</th>
<th>Endogenous eczema</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contact eczema</td>
<td>Atopic eczema</td>
</tr>
<tr>
<td>• Irritant</td>
<td>Gravitational/Venous</td>
</tr>
<tr>
<td>• Allergic</td>
<td>Seborrhoeic</td>
</tr>
<tr>
<td></td>
<td>Discoid</td>
</tr>
<tr>
<td></td>
<td>Pompholyx</td>
</tr>
</tbody>
</table>

Eczema is divided into two groups endogenous and exogenous. The terms eczema and contact dermatitis can be used interchangeably when describing exogenous eczema. In contact eczema, the irritant/allergen provoking substance should be removed where this has been identified, this is not always a simple matter. Sometimes it takes extensive detective work to establish the ‘offending’ irritant substance. Removal of the irritant/allergen is of prime importance; as is the use of protective clothing if work, housework or activity related. A good skin care routine and rest from the suspect activity are essential in the acute stage of contact eczema. If untreated this kind of skin problem can become chronic and difficult to manage.

Atopic eczema

Atopic Eczema is endogenous; it is an immunologically stimulated response to one or more substances. The term Atopic comes from the Greek for without a place, Eczema comes from the Greek word meaning “to boil”. Atopy describes a group of conditions, which are genetically linked. These are eczema, asthma, hayfever and urticaria; there may be a link in a familial pattern. One or more of the conditions may be present; often one sibling will have asthma and another eczema.

Atopic eczema often presents within the first six months of life as vesicular, (tiny, palpable blisters in the epidermis) weepy skin on the face and head, with a diffuse distribution elsewhere. The skin in the napkin area is often not affected. Parents frequently report that the child does not sleep through the night. The knock on effect of this is that the whole family will probably be exhausted from lack of sleep.

In slightly older children the pattern of the eczema changes, it loses the vesicular appearance and becomes more chronic. There are often bands of lichenified skin in a flexural pattern around wrists, backs of knees and elbows. Lichenified skin is the result of chronic irritation associated with eczema. Inspection of the epidermis reveals magnification of the skin markings with dry thickened skin.
This presents as bands of eczematised skin, often without erythema, particularly around the inside of the wrists, elbows and ankles. The wet wrapping technique is particularly useful in this group as it enables intensive rehydration of the skin and aids control of the irritation. In adults the pattern of eczema is similar to that of childhood but there may be more involvement of the trunk and limbs generally.\(^1\)

In its acute phase eczematised skin is usually erythematosus and exuding. The localised inflammation in the skin causes dilation of capillaries, and oedema in the epidermis (Spongiosis). This forms tiny blisters (vesicles) which in turn coalesce and rupture. The local oedema and inflammation cause pressure on nerve endings in the skin and cause the irritation that is a hallmark of atopic eczema. The resulting itchy, weeping skin leaves a breach in the barrier to infection.

**Signs of infection in eczematised skin**
- Erythema (redness or deeper colour in dark skins)
- Weeping or blisters
- Localised heat
- Yellow crust or exudate
- Tenderness (there may be very reduced movement in the skin)

A clinical deterioration in atopic eczema is often associated with infection. The main pathogen implicated is *Staphylococcus aureus*. Oral antibiotics may be prescribed. Antibacterial/steroid combination preparations are also available.

Traditionally potassium permanganate has been used as an antiseptic for weeping eczema; this should be diluted to a 'rose pink' colour (1:32000 solution). Lotions and bath emollients with antiseptics added are recent additions to the range of antiseptic products available. These products are much cleaner and more user friendly than potassium permanganate which stains skin, nails and clothing brown. It does not wash off so is not suitable for use in domestic bathrooms.

**Venous/gravitational eczema**

Venous eczema also known as gravitational eczema occurs on the lower limbs. When venous insufficiency is present there is often oedema of the lower limb. The resulting increased permeability of capillary walls allows irritant proteins to infiltrate the interstitial spaces. This irritant reaction causes eczema. The patient may have venous eczema with or without the presence of an ulcer.

The presentation of venous eczema is marked by intensely itchy skin, there may be palpable varicose veins on the skin but often these have ruptured and present as moist, weeping skin. Erythema is often a feature of venous eczema; this is due to the dilation of capillaries in response to the irritant effect. Diffuse erythema may be a sign of cellulitis, however, this is an unlikely diagnosis if the other signs of infection are absent. These being localised heat, tenderness, swelling or increased exudate where an ulcer is present. The exudate may be pale, straw coloured or if heavily colonised with *Staphylococcus aureus*, a bright glistening yellow.

Contact eczema may also complicate the picture where leg ulceration is present. As the long term use of medicaments in the form of dressings and creams may cause sensitivity. This eczema can usually be distinguished by the pattern of its presentation, sometimes in the outline of a particular dressing. Skin management in eczema of the lower limb is treated in a similar way to other forms of eczema. With use of emollients forming the first rung of the skin management ladder. The use of an ointment rather than a cream will reduce the potential for sensitisation. In addition, topical steroids are used where needed. Potent topical steroids may be needed to gain control of the eczematous reaction.

In eczema related to venous insufficiency, it is imperative for the patient’s comfort to gain control of the eczematous reaction. Build up of product residue and the accumulation of dead cells on the skin (hyperkeratosis) can also cause discomfort, and it is important to remove this before the reaplication of emollients and bandages. Good skin care will assist in the relief of eczema, however without reversal of the underlying hypertension, this will offer only temporary resolution. Control of oedema, reversal of venous hypertension and the management of excessive exudate can be achieved by the correct application of adequate compression.

It is vital that the nurse conducts a thorough assessment of the patient’s vascular status and limb measurement so that the correct bandage regime is applied. Padding should be used to protect the skin from damage that could be caused as a result of incorrect bandage application technique.

**Emollients**

Emollients or moisturisers are the preparations used to assist in maintaining a healthy skin. They add moisture to the skin and form an artificial lipid layer over the surface. The value of emollients may be overlooked due to the very simple nature of their action. When a skin condition changes or becomes worse the emollient therapy should be the first treatment to be reviewed.

There is a wide range of emollients available, the choice of preparation is linked to the hydration status of the skin. Creams are used on moist skin as ointments slide off. Emollients are formulated from a combination of water and oil (Creams, Gels) or a mix of oily preparations and waxes (Ointments).

Emollients are also available as gels, lotions and sprays.

**Selection of emollient**

Emollients are only successful if applied...the best emollient is the one the patient uses. Patients will vary in how they tolerate emollients; some patients happily apply ointments whilst others find them too greasy.\(^2\) It is useful to think in terms of what you are trying to achieve with emollient therapy. It may be possible and acceptable for the patient to use a cream preparation during the daytime and add an ointment at bedtime.

Frequent applications of a cream will add moisture to the stratum corneum, the use of an ointment once a day will aid retention of that moisture. The following approach to describing dry skin may assist with emollient selection.
Soap substitutes

Soaps and detergents remove the lipid layer from the skin, they may also exacerbate the problems of dry skin.

Many of the emollient preparations can be used as soap substitutes. There are also products developed specifically for the purpose of skin cleansing.

Application tips for emollients

- Ensure good pot hygiene; use a spatula or spoon to decant emollient from large pots into a small dish or saucer kept for the purpose
- Never put hands directly in pots of emollient this can cause bacterial contamination
- Apply emollients in the direction of hair fall to avoid clogging of pores
- Do not massage or rub the emollient in, this may cause folliculitis. (Folliculitis is a localised infection identified by small ‘whiteheads’ or spots, usually found around a hair)
- The aim of application is to achieve a moist tackiness on the skin surface. Emollient use should be continued until the skin is smooth and supple. Then maintained as a routine method of controlling dryness and skin irritation
- Apply a visible layer of emollient; allow it to absorb into the skin
- Do take extra care when using bath emollients, they are greasy and can make surfaces very slippery

Selection of emollient is an individual choice.
Factors to consider are:-

- Lifestyle of the patient and preferred activities
- Does the patient have the opportunity and facility to reapply emollients?
- If it is necessary to wear a business suit, an ointment is probably not suitable
- Size of the container, a 500g pot will not fit in the average handbag

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Creams</strong></td>
<td><strong>Ointments</strong></td>
</tr>
<tr>
<td>• A mix of oil in water, some creams are thicker because they have a higher oil content.</td>
<td>• Mixtures of Soft Paraffin, Liquid Paraffin, Emulsifying Wax and other oils.</td>
</tr>
<tr>
<td>• All contain preservatives and excipients (ingredients).</td>
<td>• Less frequency needed with applications.</td>
</tr>
<tr>
<td></td>
<td>• Maintain (moist tackiness) for longer.</td>
</tr>
<tr>
<td></td>
<td>• No preservatives</td>
</tr>
</tbody>
</table>

**Gels**

- Easy absorbed into warm skin.
- Oil retained under stratum corneum.

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy absorbed into the skin.</td>
<td>Possible sensitivity to excipients and preservatives.</td>
</tr>
<tr>
<td>Spread easily on the skin surface.</td>
<td>May cause rapid transient cooling, over large surface areas.</td>
</tr>
<tr>
<td>Cosmetically acceptable to patients</td>
<td>Need to be applied frequently to maintain hydration level (moist tackiness)</td>
</tr>
</tbody>
</table>

Selection of emollient is an individual choice.
Factors to consider are:-

- Lifestyle of the patient and preferred activities
- Does the patient have the opportunity and facility to reapply emollients?
- If it is necessary to wear a business suit, an ointment is probably not suitable
- Size of the container, a 500g pot will not fit in the average handbag

**Benefits**

- Easy absorbed into the skin.
- Spread easily on the skin surface.
- Cosmetically acceptable to patients

**Problems**

- Possible sensitivity to excipients and preservatives.
- May cause rapid transient cooling, over large surface areas.
- Need to be applied frequently to maintain hydration level (moist tackiness)

**Ointments**

- Mixtures of Soft Paraffin, Liquid Paraffin, Emulsifying Wax and other oils.

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less frequency needed with applications.</td>
<td>Very greasy preparations.</td>
</tr>
<tr>
<td>Maintain (moist tackiness) for longer.</td>
<td>Not always cosmetically acceptable, particularly on the face.</td>
</tr>
<tr>
<td>No preservatives</td>
<td>Easily spreads onto clothing and furnishings</td>
</tr>
</tbody>
</table>

**Gels**

- Mixtures of light oils, water and gelling agents.

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy absorbed into warm skin.</td>
<td>Slightly greasier than a cream.</td>
</tr>
<tr>
<td>Oil retained under stratum corneum.</td>
<td>May cause transient cooling on inflamed skin.</td>
</tr>
</tbody>
</table>

**Lotion**

- High water content with oils and antiseptics added.

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy applied.</td>
<td>Need for very frequent re-application.</td>
</tr>
<tr>
<td>Light, cooling effect, with minimal greasiness.</td>
<td>Contain antiseptic preparations, not suitable for long-term use.</td>
</tr>
<tr>
<td>Use should be restricted to periods of exacerbation with signs of skin infection.</td>
<td></td>
</tr>
</tbody>
</table>

**Spray**

- Mixtures of light oils.

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy applied.</td>
<td>An expensive product for everyday use.</td>
</tr>
<tr>
<td>Great for use during activities.</td>
<td>Frequent applications needed.</td>
</tr>
</tbody>
</table>

- Selection of emollient is an individual choice.
- Factors to consider are:-

- Lifestyle of the patient and preferred activities
- Does the patient have the opportunity and facility to reapply emollients?
- If it is necessary to wear a business suit, an ointment is probably not suitable
- Size of the container, a 500g pot will not fit in the average handbag

**Benefits**

- Easy absorbed into the skin.
- Spread easily on the skin surface.
- Cosmetically acceptable to patients

**Problems**

- Possible sensitivity to excipients and preservatives.
- May cause rapid transient cooling, over large surface areas.
- Need to be applied frequently to maintain hydration level (moist tackiness)
**Topical steroids**

Topical Corticosteroids (Steroids) have been available since the 1960’s; they have revolutionised the care of eczema and other dermatoses. They are not, however, without their problems.

The recognition of the side effects from topical steroids has led to the development of safer methods of titration and application technique. In long-term use topical steroids may cause dermal thinning with loss of collagen tissue, this results in striae. There is understandably some resistance to the use of these preparations, but to date there is little in the way of effective alternative therapy. Emollients should always be the first step in treatment for eczema and dry skin; however, more severe eczema may require topical steroids to break the inflammatory cycle. Topical steroids reduce the cellular inflammatory response by reducing the production of inflammatory mediators-cytokines and promote the synthesis of anti-inflammatory proteins-lipocortin.⁶

In Eczema management steroid therapy is used in the stepped approach. Steroids are classified in potency levels. Dermatologists recommend that treatments move down through the potencies, applying the most appropriate level of steroid to gain control of the inflammatory effects. Then moving down to the lowest, effective potency or emollient therapy. Generally, only mildly potent steroids are used on the face, except under the management of a Dermatologist.

It has been reported that with the continuous use of topical steroids over long periods of time, an increased potency is needed to gain the same therapeutic effect. This phenomenon is known as tachyphylaxis, to avoid this effect, a ‘steroid holiday’ is built into the treatment plan. During this time just emollients are used for a couple of days.⁷

---

**Plymouth Hydration Flow Charts**

<table>
<thead>
<tr>
<th>0 none</th>
<th>Naturally soft supple skin</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 mild</td>
<td>Soft skin maintained by 1-2 daily use of emollients, powdery with occasional irritation</td>
</tr>
<tr>
<td>2 moderate</td>
<td>Dry skin in patches, environmental conditions cause drying easily, skin is mildly flaky with irritation</td>
</tr>
<tr>
<td>3 severe</td>
<td>Very dry skin, feels rough and flaky, distressingly iritant</td>
</tr>
<tr>
<td>4 very severe</td>
<td>Extremely dry skin with possible fissuring or peeling, or acanthosis (epidermal thickening) or dry desquamation without trauma, distressingly iritant</td>
</tr>
</tbody>
</table>

**Soap Substitutes**

<table>
<thead>
<tr>
<th>Method of Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cream</td>
</tr>
<tr>
<td>Emulsifying ointment</td>
</tr>
<tr>
<td>Emollient bath lotions</td>
</tr>
<tr>
<td>Shower gel</td>
</tr>
<tr>
<td>Soap free moisturising bars</td>
</tr>
</tbody>
</table>

**Soap Substitutes**

<table>
<thead>
<tr>
<th>Soap Substitutes</th>
<th>Method of Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cream</td>
<td>May be applied directly to the skin before washing/bathing/showering.</td>
</tr>
<tr>
<td>Emulsifying ointment</td>
<td>May be used in a similar way to cream. (Thorough mixing is essential. A detergent should be used down the drain after use to avoid clogging of drainage pipes.)</td>
</tr>
<tr>
<td>Emollient bath lotions</td>
<td>Developed specifically for washing/bathing, follow manufacturers instruction guide on packaging. (may cause slippery surfaces)</td>
</tr>
<tr>
<td>Shower gel</td>
<td>Developed for showering, very greasy. Only a tiny quantity required, follow instruction guide on packaging. (may cause slippery surfaces)</td>
</tr>
<tr>
<td>Soap free moisturising bars</td>
<td>May contain fragrance or other sensitisers, but if acceptable for the patient, may be used.</td>
</tr>
</tbody>
</table>
To gain the full effect from topical steroids, the skin should first be moisturised. Ideally a gap of one hour should be left before application of the steroid. If applied at the same time as emollients the steroid may be diluted. The steroid preparation must pass through the stratum corneum to the cell receptors in the lower layers of the epidermis and dermis. If applied to dry skin the delivery vehicle cream or ointment will simply re-hydrate the stratum corneum and the full benefit of the steroid will be lost.

As a general rule ointments are preferable to creams, as there are less potential sensitisers in them. However, cream is used on moist areas as ointments slide off wet, excising areas.

**Tubular bandaging**

Tubular bandages are a mainstay of skin care treatments.

They are especially useful in the management of an acute phase of eczema. The bandages can be used in a variety of techniques.

**The wet wrapping technique**

The principle behind this bandaging technique is well established in dermatological nursing. An Acti-Fast tubular bandage suit is applied in two layers, a warm wet layer covered with a dry layer. This technique is used mainly in young children to break the ‘itch scratch cycle’. The wet bandage gives increased hydration and cools the skin so reducing the inflammatory effect of the eczema. The wet layer will dry out, so it needs to be remoistened. This can be done fairly easily using a water spray bottle (bought and kept for the purpose). It is not necessary to take the suit off; the dry layer can be rolled up to allow access.

This technique gives enhanced absorption of topical steroids, therefore, it is generally only used with emollients or mildly potent topical steroids. It is a very useful technique to teach parents as they can use it to forestall an exacerbation of eczema. The wet wrapping technique should not be used on infected skin.

Parents often recognise the early signs of an eczema flare as these may be related to a cold or just a late night. Anything that stresses the immune system slightly can trigger an eczema flare up. With confidence parents may adjust the use of Acti-Fast tubular bandages to suit the child’s activities. It might be that some play activities such as painting or sand play cause a problem. With use of the wet wrapping technique before or after these play sessions it may be possible to control the eczema whilst continuing the child’s play enjoyment.

This bandaging technique is not generally used on older children or adults; as over a larger body surface area there is an increased potential to induce hypothermia.

**The dry wrapping technique**

Acti-Fast can be used over the emollient preparation to assist in maintaining an adequate level of emollient on the skin. The dry bandages are easily rolled into position after emollient or steroid application. They may be used in the presence of infection.

Acti-Fast forms a soft but gentle barrier that helps reduce skin damage from scratching. If skin irritation is a problem, the scratching of the skin through the bandage will help with the absorption of emollient, it will also limit the physical damage from fingernails and rubbing.

If the Acti-Fast bandage layer causes a feeling of overheating, a further application of emollient should be used. Re-application of emollients is simple as the bandages can be rolled back easily, they will retain their shape. When itching is intense there may be occasions when the bandages will stick on scratched areas.

To release the Acti-Fast, simply apply more cream over the top or soak off in warm water.

Dry bandaging can be used in a variety of combinations; it may be used to make a full body suit or simply to wrap one or more limbs.

**Bandage liners**

Bandage liners are used to ease the problem of contact sensitivity related to elastic bandages. A layer of Acti-Fast can be applied over the primary dressing and the bandaging regime is then applied in the usual way. In addition to forming a barrier from sensitisation, Acti-Fast will aid retention of the emollient preparation.

Where compression hosiery or multi-layer compression bandages are being used such as Actico Cohesive short stretch bandage, this may aid patient comfort; as it is often the case that the bandages remain in place for seven days. Without a liner much of the emollient will be absorbed into the orthopaedic wool layer.
Other aspects of atopic eczema management

There are other aspects which when carefully managed can improve outcomes for patients with atopic eczema.

House dust mite

House dust mite is known to aggravate eczema. There are simple but time consuming methods of reducing the level of dust mites present.

• Use of a damp cloth for dusting, this removes the dust mite. Ordinary dusting just moves the dust around, the dry dust will settle elsewhere.
• Regular vacuuming of the mattress will limit the accumulation of dust in the bed.
• Regular washing or wiping down of soft furnishings, such as curtains.
• Regular washing of bedding including duvets and pillows.
• Feather pillows and duvets should be avoided.
• Carpets harbour dust even if vacuumed daily. An alternative floor covering that can be washed easily such as vinyl may be useful.
• The bedroom should be cool and well ventilated.
• Soft toys should be washed frequently or alternatively placed in a polythene bag in the freezer overnight. It may be useful to have two of any favourite toy to accommodate the washing/freezing routine.
• Mattress and pillow covers are available commercially.

Pets

Fluffy pets can be a source of aggravation for eczema.

The dander (dead hair and skin cells) can be very difficult to eradicate even with daily vacuuming. Fluffy pets should not be allowed into the bedroom. Weekly washing of pets may decrease the level of dander around the home. This may not be feasible with cats! If it is suspected that the pet is implicated in exacerbating the eczema, a trial without pet might be useful. A small child will be playing on the floor so it is virtually impossible to protect them completely from the effects of pet hair. The acknowledgement that the family pet may be perpetuating the eczema is often a difficult issue to deal with; families need support and understanding. It is not as simple as it may at first seem; dogs and cats are often viewed as a member of the family.

Diet

Atopic eczema mainly affects children therefore special caution should be taken before adjusting the diet. Dietary manipulation is best managed under the supervision of dietician. Unless a definite connection can be made between a food item and an exacerbation of eczema; in which case it would be sensible, with caution, to restrict the food item. If this forms a part of an essential aspect of the diet, as with dairy products, dietetic supervision should be obtained.

Steroid potencies

<table>
<thead>
<tr>
<th>Mildly Potent</th>
<th>Hydrocortisone, Synalar 1:10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderately Potent</td>
<td>Betnovate 1:4 RD, Eumovate</td>
</tr>
<tr>
<td>Potent</td>
<td>Betnovate 0.1%, Elocon,</td>
</tr>
<tr>
<td>Very Potent</td>
<td>Dermovate, Nerisone forte</td>
</tr>
</tbody>
</table>

Measuring topical steroids

All steroid creams and ointments have standardised tubes, the nozzle has a 5mm diameter; this enables accurate measurement of the topical steroid. The measurement most frequently talked about is the Fingertip Unit or FTU. The development of this measurement allows for more accurate dosage. One FTU is equivalent to the length of the average male adult fingertip; that is from distal joint to the tip of the finger; approximately 2.5cm. A strip of ointment/cream 2.5cm long equals 0.5g. In practice, if a large area is to be treated, it is quite messy to keep measuring on the fingertip. For simplicity of use it is easiest to measure the steroid out in 15cm or 3g strips. The flat, back surface of a 15cm ruler is an ideal measuring gauge; it is easy to use and easily cleaned afterwards. There is a dosage guide in each box of steroid cream/ointment.

Application guide for topical steroid preparations

• First measure out a 3g strip of cream/ointment.
• From this strip take a blob of cream/ointment on to your fingertip
• Dab the cream/ointment in a grid pattern over the area of skin to be treated (as if arranging fat when making flaky pastry).
• Space it approximately 3cm apart, then smooth the blobs together to make a fine film of cream/ointment across the skin.
• As with any cream/ointment application work down in the direction of hair growth.

To ensure an even application of the topical steroid preparation, it is useful to follow this guide:

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Eczema and contact dermatitis

Eczema is divided into two groups endogenous and exogenous.

The terms eczema and contact dermatitis can be used interchangeably when describing exogenous eczema. In contact eczema, the irritant/allergen provoking substance should be removed where this has been identified; this is not always a simple matter. Sometimes it takes extensive detective work to establish the 'offending' irritant substance. Removal of the irritant/allergen is of prime importance; as is the use of protective clothing if work, housework or activity related. A good skin care routine and rest from the suspect activity are essential in the acute stage of contact eczema. If untreated this kind of skin problem can become chronic and difficult to manage.

Atopic eczema

Atopic eczema is endogenous; it is an immunologically stimulated response to one or more substances. The term Atopic comes from the Greek for without place, Eczema comes from the Greek word meaning ‘to boil’. Atopy describes a group of conditions, which are genetically linked. These are eczema, asthma, hayfever and urticaria; there may be a link in a familial pattern. One or more of the conditions may be present; often one sibling will have asthma and another eczema.

Atopic eczema often presents within the first six months of life as vesicular, tiny, palpable blisters in the epidermis. Weepy skin on the face and head, with a diffuse distribution elsewhere. The skin in the napkin area is often not affected. Parents frequently report that the child does not sleep through the night. The knock on effect of this is that the whole family will probably be exhausted from lack of sleep.

In slightly older children the pattern of the eczema changes, it loses the vesicular appearance and becomes more chronic. There are often bands of lichenified skin in a flexural pattern around wrists, backs of knees and elbows. Lichenified skin is the result of chronic irritation associated with eczema. Inspection of the epidermis reveals magnification of the skin markings with dry thickened skin.

This presents as bands of eczematous skin, often without erythema, particularly around the inside of the wrists, elbows and ankles. The wet wrapping technique is particularly useful in this group as it enables intensive hydration of the skin and aids control of the irritation. In adults the pattern of eczema is similar to that of childhood but there may be more involvement of the trunk and limbs generally.\(^2\)

In its acute phase eczematous skin is usually erythematous and exuding. The localised inflammation in the skin causes dilatation of capillaries, and oedema in the epidermis (Spongiosis). This forms tiny blisters (vesicles) which in turn coalesce and rupture. The local oedema and inflammation cause pressure on nerve endings in the skin and cause the irritation that is a hallmark of atopic eczema. The resulting itchy, weeping skin leaves a breach in the barrier to infection.

3. Prepare and apply emollient or steroid cream

If using steroid creams:
Put a measured amount of cream on the measuring tray. Take a blob on to the finger and apply in dots onto the child's skin to ensure even distribution. Even out with sweeping movements, not a rubbing action.

If using emollient: Put a portion of emollient onto a measuring tray using a spatula and apply to the skin, again using a stroking action in the direction of hair growth.

4. Apply the bandages

Remove the Acti-Fast lengths from the warm water, and squeeze out.
Apply the warm, wet Acti-Fast lengths to the child's arms and body, followed by the dry Acti-Fast as a second layer. The bandages are applied using a rolling action to keep the cream in place. Put the small finger and the thumb through the holes that you have cut in the arm sections to prevent the child from pulling up the bandages and scratching the skin. The holes must be large enough not to constrict the fingers and toes. After applying the Acti-Fast bodysuit check the fingers and toes to make sure no cotton fibres from the lengths have been caught on the nails as this can cause a nail infection.

Keep the bodysuit together by passing the ties made earlier through holes made in both the layers of Acti-Fast. Two ties are generally needed for each arm and leg. The ties should be cut as short as possible to prevent the loops from getting caught in fingers or toes.

For the child's comfort it is a good idea to apply the arm and body sections, then put on the pyjama top or T-shirt, before applying the leg sections. The rest of the clothing can now be put on, making sure that the nappy or pants are put on over the bandages to make them easy to remove when going to the toilet.

Head & Neck applications: It is very rarely recommended that the head and neck are covered with the bandages, and extreme caution should be taken if considering this application, as this could be dangerous and could cause distress to any child. It may be advisable therefore to simply apply the cream or emollient without the bandages.

Clothing

There are several companies who specialise in the production of cotton clothing. Soft cotton clothing is helpful in managing eczema; it is a natural fibre so reducing the risk of irritant reaction. It allows air circulation, this is important as overheating dilates blood vessels in the skin increasing irritant effects. Several light cotton layers are as warm as one thick woollen one.

Laundry

Washing powders/liquids and fabric softeners contain substances, which may irritate eczema. The general principle of using a non-biological washing product and avoiding fabric softeners is appropriate. There are some products available that are manufactured for sensitive skins. As with all things they may not suit everyone.