

Inflammatory disorders

Introduction

Skin inflammation characterises a number of common conditions. While infections and other disorders are invariably associated with varying degrees of inflammation, this chapter concentrates on psoriasis, eczema, urticaria and miliaria; disorders that are sometimes classified as eruptions.

Psoriasis

Although there is now a comprehensive body of research on the pathogenesis of psoriasis, a complete understanding of the disease remains elusive. Despite the availability of several treatment options, it is still a difficult condition to manage and treatment concentrates on minimising the severity and extent of symptoms. It is a common multifactorial chronic inflammatory hyperproliferative disease with variable clinical presentations, affecting approximately 1.5–3% of the population across ethnic groups, and men and women equally. Types of psoriasis commonly seen include:

- plaque psoriasis
- guttate psoriasis
- erythrodermic psoriasis
- pustular psoriasis
- flexural psoriasis.

Variations in the location of psoriasis are scalp, palms and soles, elbows, knees, base of spine and flexural areas. The typical picture is of areas of thickened, flaky, silvery white and reddened skin, which may itch and bleed. Nails may also be affected, in severe cases being completely destroyed, and if skin lesions are atypical, the pitting and thickening of nails can aid diagnosis. About 15% of people with psoriasis have joint inflammation that produces psoriatic arthritis. Table 9.1 presents the main clinical variants and Table 9.2 summarises the clinical features of the most common form, plaque psoriasis.

Pathogenesis

The exact pathogenesis of psoriasis remains unclear; however, understanding of the psoriatic process continues to expand. The disease picture features simultaneous hyperproliferation of the epidermis, vascular tissues and fibroblasts, an acute inflammatory reaction and an acceleration in the rate of dermal breakdown and repair. Epidermal transit time is much reduced, down from 28 to 4–8

Table 9.1 Clinical variants of psoriasis.

<p><i>Plaque</i> – Pink or red plaques which usually begin as small red papules that scale as their size increases. Plaques have a well-defined edge unlike the vague edge seen in eczema and tend to be symmetrical. Silvery scaling is characteristic.³</p>
<p><i>Guttate</i> – Derived from the Latin word for ‘raindrop’, a reference to the small, drop-like lesions. Most commonly affects children and young adults, frequently triggered by bacterial infections, for example streptococcus. Each lesion is usually 0.2–1 cm diameter and round-oval in shape.³</p>
<p><i>Pustular</i> – Can occur as part of a chronic, indolent form of psoriasis or as a more widespread, inflammatory condition. Pustules appear on the skin and may affect either small or large areas of the body. In the most severe form there is fever. Up to 95% of those affected are smokers.³</p>
<p><i>Erythrodermic</i> – Widespread reddening and scaling of the skin accompanied by itching or pain. Can be precipitated by severe sunburn, use of oral steroids, severe emotional stress or illness.</p>
<p><i>Flexural</i> – Affects the axillae, perineal creases and inframammary folds. Scale is absent or reduced, leaving shiny deep pink plaques. Most common in older and overweight patients.³</p>
<p><i>Scalp</i> – A favoured site and may be the only area affected. Scale adheres to the hair, producing a dense-tight feeling scale that can cover extensive areas of the scalp.</p>

Table 9.2 Clinical features of plaque psoriasis.

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- Plaques are pink or red and scaly.
 - Plaques coalesce, forming well-demarcated round-oval lesions.
 - Surface scale is silvery white and can become very dense, especially on the scalp.
 - Vigorous rubbing reveals pinpoint bleeding (*Auspitz’s sign*).
 - Plaque size varies considerably from millimetres to several centimetres.
 - In intertriginous areas plaques may become macerated.
 - Extent of body surface area affected varies considerably; it affects extensor surfaces more than flexor and usually spares the face.
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days. Keratinocytes retain their nuclei, there is no granular layer and keratin accumulates in the horny layer. The vasculature in plaques shows abnormalities, with dilated capillaries populating the papillary dermis.

There appears to be an inherited predisposition to psoriasis, and several genetic loci associated with development of the disease have been identified.¹ Supporting evidence for genetic predisposition includes the following.

- There is a higher-than-average incidence of psoriasis in relatives of people with psoriasis. However, in some people with psoriasis there is no family history.
- There is an increased incidence of psoriasis in children when one or both parents has psoriasis.
- Twin studies show the concordance in identical twins to be 73%.² However, as in many other diseases with a genetic component, psoriasis involves multiple genes and gene mutations, as well as exogenous factors. It appears that the disease is only expressed after being triggered by other factors. Known triggers include dermatologic and systemic bacterial infections, stressful events, cold climate, sunlight, alcohol and physical trauma.

Koebner phenomenon is a feature of many cases of psoriasis and refers to the recorded incidence that, following a skin injury, psoriatic lesions appear around the site. It may result from antigen-presenting activation of T cells in the skin promoting the psoriatic changes by secreting certain cytokines in genetically predisposed individuals. It has been suggested that psoriasis is a T cell-mediated autoimmune disease³ and psoriasis shares certain common features with other chronic T-cell-mediated diseases including Crohn's disease and rheumatoid arthritis.⁴

Inflammation is a major symptom of psoriasis and infiltration of the skin by activated T cells is regarded as a key factor in its development. Expanded, tortuous capillary loops within the papillary dermis, and extending close to the parakeratotic scale, are a distinctive feature of psoriatic skin and increased vascularisation precedes lesional development. This proliferation and expansion of blood vessels may contribute to plaque formation, by facilitating access of activated T cells to the skin.⁵

It has long been known that *Staphylococcus aureus* and streptococci infections aggravate psoriasis with the guttate form being closely associated with streptococcal throat infections. There is also evidence that sub-clinical streptococcal infection may be a contributory factor in chronic plaque psoriasis.² For some women, psoriasis will significantly improve during pregnancy and relapse in the post-partum period. This suggests a hormonal factor in the disease, which has yet to be fully elucidated.

Psychological impact

Psoriasis can have devastating psychosocial effects, with levels of depression and psychiatric distress among sufferers being significantly higher than among patients with hypertension, cancer, heart disease, diabetes and angina.⁶ Emotional distress is aggravated by physical discomforts produced by the psoriasis such as pruritus, which has been associated with suicide.⁷ The disfiguring nature of the condition can be overwhelmingly depressing for many sufferers. Depressive disease is a clinically important feature of psoriasis with related stress being associated with greater psychiatric morbidity (ibid.).

Adult psoriasis patients report increased levels of social touch deprivation – something directly associated with higher rates of depression than in non-stigmatised individuals. Several studies provide evidence that perceptions of stigmatisation are pronounced among psoriasis patients: for example one study reported that 26% of patients experienced people making an effort to avoid touching them because of their condition.⁸

The psychological impact is likely to be heightened when the onset of disease occurs early in life. Psychological problems can arise from feelings of social rejection, guilt, embarrassment for self and family, and loneliness. Sufferers may also deny themselves enjoyment of leisure activities. It has been suggested that psoriasis can limit career success because employers often fail to understand the nature of the disease. Psoriasis can lead to increased self-consciousness and affect how individuals approach new relationships and damage the stability of existing ones.⁹

Aromatherapy options

The primary aim is to control the extent and severity of the disease, thus limiting the damage to quality of life. Currently, a single effective conventional cure remains elusive. For chronic plaque psoriasis involving less than 20% of the body surface, initial therapy is topical; systemic therapies are employed for patients with unresponsive severe disease. Thus adjunctive topical use of aromatherapy preparations is indicated in less severe cases (*see* Figure 9.1). Various parameters are used to assess the clinical severity of the disease and corresponding treatments:

- sites affected
- extent of disease
- age and gender of patient
- previous treatment history
- general physical and psychological health of patient.

Psoriasis is particularly difficult to treat and not surprisingly the more severe the symptoms, the more difficult it is to provide effective treatment. Each case is assessed individually, including especially the psychological impact of the condition. The concomitant use of essential oils for both physical and psychological benefit is an important treatment strategy and Table 9.3 suggests oils frequently cited for addressing both aspects.

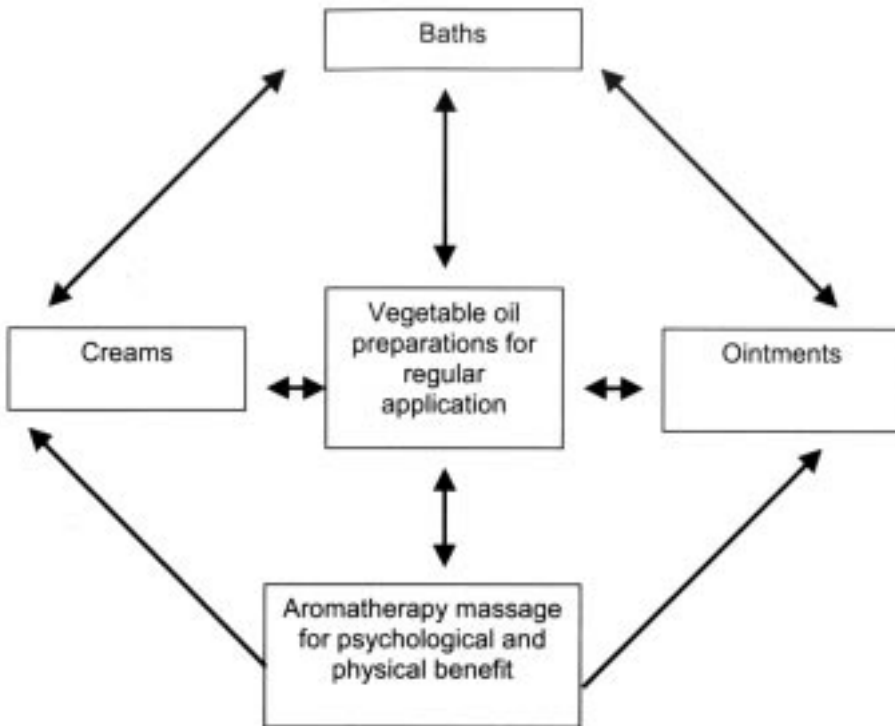


Figure 9.1 Using a sequence of inter-related, emollient-focused therapies offers maximum benefit in cases of mild–moderate psoriasis and dermatitis.

Table 9.3 Key essential oils for addressing the major psychological and physical symptoms of psoriasis.

<i>Achillea millefolium</i>
<i>Boswellia carteri</i>
<i>Chamaemelum nobile</i>
<i>Cistus ladaniferus</i>
<i>Commiphora myrrha</i> var. <i>molmol</i>
<i>Cymbopogon martini</i>
<i>Helichrysum italicum</i>
<i>Lavandula angustifolia</i>
<i>Matricaria recutita</i>
<i>Pelargonium graveolens</i>
<i>Pogostemon cablin</i>
<i>Rosa centifolia</i>
<i>Santalum album</i>

Encouraging a positive attitude is crucial in helping individuals come to terms with what may be a permanent condition and aesthetically pleasing preparations go some way to achieving this. If we consider the following words of a psoriasis patient describing the reality of using prescribed topical preparations it is clear that the aesthetic nature of aromatherapy offers something inherently valuable:

Smearing on the evil smelling, sticky, staining stuff could take up to two or more hours a day, soaking in it another hour or so.¹⁰

Research into the efficacy of essential oils in psoriasis care is scarce; one of the few studies conducted to research the value of using aromatherapy concluded the following essential oils to be of use: bergamot, jasmine, geranium, lavender, melissa and sandalwood.¹¹ *Aloe vera* 0.5% cream resolved psoriatic plaques in 83.3% of patients in a double-blind, placebo-controlled study, compared with 6.6% placebo cure rate.¹² It was noted that patient compliance was excellent, with the cream being well tolerated, and there were no reports of hypersensitivity, dermatitis or adverse symptoms. Biopsy analysis of cured lesions showed a decrease in parakeratosis, epidermal acanthosis, thinning, and reduction of vascular dilatation and inflammatory infiltration. Formulating with essential oils and *Aloe vera* gel will maximise the effectiveness of each product, selecting oils from Table 9.3.

In one study¹³ which looked at the prevalence of pruritus in patients with extensive psoriasis, it was found to be a feature in 84% of cases and in 77% of these it appeared on a daily basis, significantly affecting the quality of life for sufferers. Constant itching not only aggravates the psoriasis patient and their symptoms, it can severely add to the social impact of the disease. As well as using aromatherapy to alleviate itching, adopting these steps will offer further help.

- Keep skin cool – warmth aggravates pruritus.
- Take cool showers or tepid baths (maximum 30 minutes).
- Limit the use of soaps and cleansers.

- Keep skin moisturised, as dry skin tends to be more pruritic.
- Always moisturise following bathing.
- Wear light clothing (cotton and silk) for coolness and avoid scratchy pressure from wool and synthetic fibres.

Massage has been shown to decrease itching in post-burn patients¹⁴ and therefore it is entirely possible this may also be achievable in cases of psoriasis. Furthermore, massage can help to counter-balance the stigmatisation so commonly experienced by sufferers. Bathing in tepid-warm water, to which essential oils and carrier oils are added, forms an essential part of the treatment plan, especially if large areas of the body are affected. Scales can be removed and itching reduced by soaking for approximately 20 minutes, followed by the liberal application of an appropriate moisturising formula. Table 9.4 provides a sample bath-soak formula.

Vegetable and infused oils

It is known that inhibition of keratinocyte proliferation can be achieved by inhibiting inflammatory mediators.¹⁵ Many of the oils given in Table 9.3 are considered to have either proven or experiential value as topical anti-inflammatories and therefore may contribute to limiting keratinocyte proliferation. It has been demonstrated in vitro that gamma-linolenic acid (GLA) can significantly inhibit the generation of leucotriene B₄, a major pro-inflammatory metabolite of arachidonic acid known to accumulate in the lesions of psoriasis.¹⁶ This makes topical use of GLA-rich vegetable oils worthy of further research.

In the meantime, first-choice oils for aromatherapy formulations are *Borago officinalis* (borage) and *Oenothera biennis* (evening primrose). A randomised, prospective clinical trial provided good evidence that a vitamin B12 cream containing avocado oil could be an effective long-term topical treatment for psoriasis.¹⁷ It is therefore possible that *Persea gratissima* oil within aromatherapy preparations offers credible efficacy. Other vegetable oils to consider include:

- *Simmondsia chinensis* (jojoba) for its anti-inflammatory, soothing qualities¹⁸
- *Calophyllum inophyllum* oil (tamanu), an excellent anti-inflammatory particularly valuable for scalp treatments but the strong odour requires careful balancing if aromatically pleasing preparations are to be achieved
- *Calendula officinalis* (calendula) used widely for its tissue-healing, anti-inflammatory effects.

In mild to moderate cases, clinical experience suggests that careful formulation of essential oils and carrier oils has a softening effect on the scaly layers, easing their removal. Ointment-based emollients are the best mediums for their hydrating, occlusive effects but their greasy feel can be problematic for some. Emollients should be applied as often as required but at least twice a day and always after bathing or showering.

Hydrosols

For symptomatic relief from itching, undiluted hydrosol sprays or cool compresses are ideal, with *Achillea millefolium* (yarrow), *Hamamelis virginiana* (witch hazel) and *Lavandula angustifolia* (lavender) being of particular value. Hydrosol sprays are especially useful for the scalp and can be the best way to encourage

Table 9.4 Sample formula for bath soak (e.g. psoriasis, dermatitis). Bathing provides an ideal medium for full body application of emollient oils. The temperature of the bath should be tepid-warm, not hot, as heat will exacerbate skin irritation and dryness.

<i>Vegetable oils</i>	<i>Essential oils</i>
<i>Oenothera biennis</i> 8.5 ml	<i>Boswellia carteri</i> 0.5 ml
<i>Prunus dulcis</i> 30 ml	<i>Daucus carota</i> 0.25 ml
<i>Persea gratissima</i> 10 ml	<i>Lavandula angustifolia</i> 0.5 ml
	<i>Matricaria recutita</i> 0.25 ml

This quantity is sufficient for approximately five baths. While soaking in the bath, the body can be gently self-massaged to aid absorption of oils and plaque removal and to minimise the chances of oily residue being left on the edges of the bath rather than on the body. Safety precautions regarding the slipperiness of the bath need to be provided.

compliance with treatment, as they are easy to use and provide quick relief. For some, other mediums are too greasy to be readily used on the scalp. One important point to note, however, is that hydrosols will not be effective at managing the dryness and scaling of psoriasis, so their use needs to be concurrent with emollient preparations.

Skin permeability

Skin permeability in psoriatic skin is increased due to the changes in epidermal structure and increased vascularisation. Differences between the clinical variants of psoriasis have been identified, with erythrodermic psoriatic skin showing more disruption to permeability barrier homeostasis than chronic plaque and pustular skin.¹⁹ This affects essential oil dosages, particularly in light of the fact that any treatment regime is likely to involve the repeated, long-term use of essential oils. Therefore, average concentration guidelines, using non-irritant, non-sensitising essential oils for psoriatic skin are:

- acute inflamed: 1–2%
- chronic, regular use: 2–5%.

It is recommended that formulas are regularly changed to maintain both therapeutic efficacy and safety.

Case example

A woman, 56 years old, presented with localised scalp psoriasis. The plaques were intensely itchy, especially at night. The following was prescribed for one month.

Vegetable oils	Essential oils
<i>Calophyllum inophyllum</i> 1 ml	<i>Matricaria recutita</i> 0.1 ml
<i>Simmondisa chinensis</i> 21 ml	<i>Lavandula angustifolia</i> 0.3 ml
<i>Persea gratissima</i> 3 ml	<i>Helichrysum italicum</i> 0.1 ml

A small amount of the oil was massaged into the local area at night and when possible during the day, although this was dependent upon daily activities and

was not done regularly. After a few days there was a considerable reduction in itchiness and softening of plaques. After one month, all irritation had gone. Treatment continued for a further month and plaques resolved. Prophylactically, the vegetable oil mix alone is now used if any itchiness of the scalp is experienced, which occasionally occurs in the winter months and during periods of stress. There has been no return of psoriatic plaques.

Urticaria

The eruption of multiple wheals (hives) that are usually pruritic characterises urticaria. Wheals arise from the release from mast cells of histamine and other mediators that produce vasodilatation and increased vascular permeability. Angioedema is the same process involving the dermis and subcutis.³ Individual wheals vary in size and shape and arise then disappear within a few hours, leaving no visible trace. In some, the process can last a few days, while in others it may last months or years, with periods of flare and remission.

Classification of urticaria

Urticaria is mediated through allergic and non-allergic mechanisms. Although the most important biologically active chemical involved is histamine, it is known that others are too. A variety of stimuli are responsible for the degranulation of mast cell granules and the release of histamine into the surrounding area. Several pathways, patterns and causes of urticaria are recognised.

- IgE-mediated (type I) hypersensitivity is involved in many acute reactions. The most commonly encountered antigenic substances are drugs (e.g. penicillin), foods (e.g. strawberries, shellfish), latex, nettle, inhaled pollens and moulds.
- Direct release of histamine from mast cells, in a non-immune manner; IgE is not involved. Aspirin, codeine and opiates are common causes.
- Chronic idiopathic attacks can last for weeks or years and specific triggers are rarely identified. Individual lesions last less than 24 hours but new lesions soon reappear. This is not a type I allergic response.
- Physical urticaria can be induced by cold, heat, water, sunlight or pressure.
- Cholinergic urticaria typically affects young adults following exercise or hot baths.

Aromatic management

A good history will help to identify possible triggers, which should be eliminated. As urticaria is typically pruritic (delayed-pressure urticaria is an exception), supportive aromatic care seeks to provide topical relief from itching. Cool hydrosol sprays or compresses are thus indicated. Select from *Achillea millefolium* (yarrow), *Hamamelis virginiana* (witch hazel), *Lavandula angustifolia* (lavender), *Matricaria recutita* (German chamomile), *Mentha piperita* (peppermint) or *Pelargonium graveolens* (geranium). They can be applied neat to wheals.

Histamine induces vascular changes through a number of mechanisms and when injected into the skin results in the 'triple response' of Lewis:

- 1 vasodilation
- 2 pruritus
- 3 wheal.

The two most important histamine receptors are H₁ and H₂ and activation of these leads to the symptoms described. In urticaria lasting longer than an hour, histamine is unlikely to be the sole cause.²⁰ The following essential oils have demonstrated antihistamine activity and can usefully be formulated into *Aloe vera* gel for topical relief:

- *Lavandula angustifolia* (lavender)²¹
- *Matricaria recutita* (German chamomile)²²
- *Melaleuca alternifolia* (tea tree).^{23,24}

Cedrus deodara (cedarwood) may also be helpful, as it has been shown to stabilise mast cells and inhibit leukotriene synthesis.²⁵ However, the question of whether any or all of these oils have a clinical benefit in specifically controlling the marked pruritus of urticaria awaits further confirmation as there is some evidence suggesting the contrary. For example, in one study, while *Melaleuca alternifolia* (tea tree) reduced histamine-induced skin inflammation, it had no significant effect on itching.²³ However, local anaesthetic effects may be achievable through the topical use of lavender and peppermint oil preparations, thereby contributing a degree of relief.^{26,27}

Miliaria

Commonly known as heat rash, this is a common phenomenon affecting predisposed individuals during hot humid conditions or exercise. If occlusion of the skin occurs it leads to accumulation of sweat on the skin surface and overhydration of the stratum corneum. If conditions persist, excessive sweat continues to be produced but occlusion of the eccrine sweat ducts then leads to its accumulation within the skin. Three levels of occlusion occur, producing distinct forms.

- *Miliaria crystallina* – occlusion of the duct at the skin surface produces small non-itchy vesicles. There is little if any erythema. Most commonly seen in bed-ridden patients and infants. It is a self-limiting condition that resolves without complications.
- *Miliaria rubra* – the most common form, this is familiarly known as ‘prickly heat’. Occlusion of the intraepidermal section of the duct results in chronic periductal inflammatory cell infiltrate in the papillary dermis and lower epidermis. Itchy papules and vesicles surrounded by a red halo or diffuse erythema appear. There is a characteristic stinging or prickling sensation rather than itching. Miliaria rubra also tends to resolve spontaneously when conditions are cooled. If prolonged heat exposure continues, heat exhaustion may result. Secondary infection is a possible complication.
- *Miliaria profunda* – deep-seated nodules develop as occlusion of the dermal section of the duct leads to sweat accumulating in the dermis. Lesions are asymptomatic. It can arise as a complication of repeated bouts of miliaria rubra and the resultant inability to sweat may predispose an individual to heat exhaustion.

Aromatic management

The treatment is essentially the same as for urticaria with an enhanced need to cool the area. Repeated, frequent applications of cool hydrosol compresses and heat avoidance are the best approaches. Prevention consists of reducing exposure to heat and humidity so that sweating is not induced. *Aloe vera* gel provides an ideal medium for application following the use of compresses, offering anti-inflammatory and topically cooling effects. Table 9.5 gives a sample essential oil formulation.

Dermatitis (eczema)

The term dermatitis covers a wide variety of non-infectious skin conditions characterised by red, sore and itchy skin. These include atopic dermatitis and irritant or allergic reactions to household substances. The causes can be broadly divided into contact factors (exogenous dermatitis) or constitutional (endogenous), which is often referred to as eczema. A convenient classification is outlined in Table 9.6. The various conditions share several clinical features. Acute forms are characterised by:

- papules, vesicles or blisters
- poorly defined erythema and swelling
- exudation and crusting
- itching and scaling.

Chronic forms display:

- dryness and painful fissures
- lichenification and excoriation.

Distinguishing between the different types of dermatitis can be difficult, but useful, in order to provide optimal care. These include the following.

- *Atopic dermatitis* – 65% of atopic dermatitis presents before the age of six months.²⁹ Diagnostic features include onset before two years old, itchy, dry skin, visual flexural eczema and a personal or family history (if under four years) of any atopic disease. The incidence in adults is less than that of psoriasis but it can have a chronic relapsing course. In adults lesions are thicker and have more lichenification. Hand involvement seems to be a marker of chronicity.
- *Irritant contact dermatitis* – acute states are often the result of a single exposure

Table 9.5 Sample formulation (5%) for relief of prickly heat or urticaria symptoms.

Essential oils:

Mentha piperita 0.5 ml

Lavandula angustifolia 2 ml

Helichrysum italicum 0.5 ml

Add *Aloe vera* gel to make a total of 60 ml and apply to affected skin three times daily immediately following the use of cool compresses, until symptoms clear.

to a substance, with lesions usually disappearing within days. Chronic forms develop as a result of cumulative exposure to irritants and, even following their removal, prolonged reactions may continue.

- *Allergic contact dermatitis* – this depends primarily on activation of allergen-specific T memory cells (delayed hypersensitivity).
- *Seborrheic dermatitis* – this is a chronic, inflammatory, scaly eruption usually affecting the scalp.
- *Discoid (nummular)* – an extremely itchy, vesicular or crusted dermatitis forming circular lesions which typically affect the limbs. Secondary bacterial infection is common.
- *Pompholyx* – is characterised by small multiple clear fluid-filled coalescent vesicles on the palms, fingers or soles. After a few days the vesicles weep and on drying cause painful fissures. It is often provoked by emotional stress, allergens or infection.
- *Venous (varicose; gravitational; stasis)* – chronic patchy dermatitis of the lower legs, associated with venous insufficiency. It commonly affects middle-aged or elderly females. Ulceration can develop.
- *Asteatotic (eczema craquelé)* – this is a dry eczema, has the appearance of paving stones and commonly occurs on the limbs and trunks of the elderly. Fissuring, itching and erythema characterise this form and it is associated with over-washing of patients in care facilities, dry environmental conditions and hypothyroidism.
- *Lichen simplex (neurodermatitis)* – this arises from repeated rubbing or scratching. Lesions are excoriated and become heavily lichenified. Itching is a major feature and extremely difficult to control.

Several of these forms are covered in detail elsewhere in the book.

Aromatic management

There are three stages of dermatitis: acute, sub-acute and chronic with each being part of a dynamic inflammatory process.³⁰ The stages evolve into one another, with scratching and rubbing inhibiting the healing process. A degree of itching is an inevitable feature of eczematous inflammation. Table 9.7 outlines the main clinical features and treatment for each stage.

Table 9.6 A simple classification of eczema.^{3,28}

Type	Variant
Exogenous	Contact allergic Primary irritant Photoreaction
Endogenous	Atopic Seborrheic Discoid (nummular) Hand and foot: hyperkeratotic/fissured; vesicular (pompholyx) Venous (gravitational, stasis) Asteatotic (eczema craquelé) Lichen simplex (neurodermatitis)

Essential oils with anti-inflammatory and skin-healing activity combined with emollient vegetable oils, particularly those rich in GLA, form the mainstay of treatment. Approaches are similar to that for chronic plaque psoriasis (*see* Figure 9.1) but there is a difference in skin permeability between psoriatic skin and lichenified eczematous skin, characteristic of chronic dermatitis: intact lichenified skin may retard essential oil absorption.

Cool compresses

Cool hydrosol-soaked compresses will alleviate itching and inflammation in acute states, by the vasoconstriction produced by the evaporative processes. Occlusion of compresses will inhibit evaporation and should therefore be avoided. Vesicles are macerated and removal of the compress gently debrides the area, preventing serum and crust from accumulating.³⁰ Compresses are replaced after 20 minutes with fresh ones rather than re-soaking with hydrosol solution, which may lead to irritation from the accumulation of scale and crust. Once the acute inflammation has settled, compresses stop, as excessive wetting may lead to cracking and fissuring.

Emollients

Emollients are the first-line treatment for dermatitis and dry skin conditions. They soothe and hydrate dry, scaly skin and by increasing skin hydration this may have an anti-inflammatory, anti-pruritic effect through the inhibition of the pro-inflammatory cytokine interleukin-1alpha (IL-1a).³¹ Emollients require frequent liberal application – four times a day or more – and therefore sufficient quantities need to be supplied. If applied sparingly or too infrequently emollients may appear ineffective. This reticence to use them may be due to the misconception that they are not ‘active’ or because they are unpleasant to use (*ibid.*). It is therefore important that the place of emollients in an overall treatment regimen is clearly explained to the client. The aesthetics of aromatic formulations considerably encourages application and the final choice of essential oils needs to reflect this.

Emollients are thought to restore the integrity of the skin barrier in two ways.

- 1 Formation of an oily barrier over the skin preventing evaporation of water.
- 2 They may penetrate deeper through the stratum corneum and mimic the effects of deficient lipids, preventing the penetration of allergens and irritants.

Table 9.7 Symptoms and treatment of dermatitis.

<i>Stage</i>	<i>Symptoms</i>	<i>Treatment</i>
Acute	Vesicles, blisters, intense erythema. Intense itch.	Cool hydrosol compresses. Emollients: lotions and cream formulations.
Sub-acute	Erythema, scaling, fissuring. Slight to moderate itch. Burning, stinging, pain.	Emollients: creams, lotions, bath preparations and ointments.
Chronic	Lichenification, excoriations, fissuring. Moderate to intense itch.	Emollients: creams, lotions, bath preparations and ointments.

Table 9.8 highlights practical considerations when using emollients.

Individuals using a combination of allopathic preparations such as topical corticosteroids and aromatherapeutic emollients (formulated with or without essential oils) should leave at least half an hour following the application of steroid before applying the emollient, to avoid dilution or spread to unaffected areas. It is important that the steroid is applied prior to the emollient. If the emollient formulation is particularly viscous it can be warmed in the hands to allow easier application. Where itching is problematic the emollient can be cooled in the fridge before application.

Case example

A woman, 30 years old, presented with atopic eczematous lesions on her neck. The lesions were intensely red, highly itchy and excoriated. Since childhood she had experienced regular flare-ups of atopic eczema and avoided dairy produce, gluten and fragranced products, all of which she suspected aggravated the condition. During the previous month, she had experienced personal stresses and was having building work done in the house which she felt had tipped the balance; she described the dust in the house as 'being like sandpaper' against her skin and her lesions were stinging and burning. An initial preparation containing a total of 2% *Matricaria recutita* and *Lavandula angustifolia* essential oils (1:1) in *Simmondsia chinensis* wax and *Calendula officinalis* infused oil (1:1) could not be tolerated and the decision was made to avoid essential oils in favour of a simple emollient cream.

Vegetable, infused oils, waxes and butters

Simmondsia chinensis 10 ml
Calendula officinalis 10 ml
 Shea butter 3 g
 Cocoa butter 3 g
 Beeswax 3 g
 Quantity sufficient for seven days.

Hydrosol

Hamamelis virginiana 20 ml

Table 9.8 Practical considerations when using emollients.

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- Lotions, creams, ointments and bath oils all potentially achieve restoration of the skin barrier.
 - Creams are preferred for day use with heavier ointments reserved for night-time use.
 - Lotions are indicated for wet and weeping dermatitis.
 - Flare-up can be prevented by continual application of emollients even when symptoms have resolved.
 - Provide sufficient quantities for home use, together with smaller containers that can be carried throughout the day, thereby encouraging frequent application.
 - Laundry – high temperatures are necessary to remove grease from clothing and bedding but biological powders and softeners are best avoided.
 - Different emollients may be required for different body sites. For example ointment for limbs, lighter creams for the face.
 - Applications need to follow the direction of the hair follicle to prevent folliculitis developing.
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The cream was applied several times every day. Within 24 hours of starting treatment, the inflammation, burning, stinging and itching had noticeably subsided. Treatment was continued for one month, after which time all signs of erythema and discomfort had disappeared. Treatment continued for several weeks, with non-essential oil containing emollient creams to restore skin health.

Advice for avoiding irritant hand dermatitis

Hand dermatitis is very common and can interfere with daily activity, cause high levels of embarrassment and have social consequences. Several types of hand dermatitis occur: irritant, atopic, allergic, pompholyx and lichen simplex. Allergy, infection, scratching and stress complicate the picture.

As well as providing topical emollient, anti-inflammatory formulations, the following advice can be given.

- Avoid washing hands more than necessary and use tepid water.
- Use cotton towels for drying rather than paper towels.
- Avoid soaps, detergents, solvents and shampoos as far as is practical.
- Wear cotton-lined gloves when using household cleaners and doing any wet work.
- Avoid direct contact with anything that causes itching or burning (e.g. raw meat, tomatoes, potatoes, citrus fruits).
- Wear gloves in cold weather.
- Use emollients throughout the day and always after getting the hands wet.

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