

Dermatological history and examination

Skin disease is marked by its variety and visibility. Dermatology is a field where pattern recognition and analysis are critical so experience is key – having seen something previously makes it much easier to recognise it in the future. Accurate history taking and examination are as important as in any other field of medicine. A systematic approach is required, although this may become truncated with experience; however, even the most experienced doctor will have the occasional difficult case where it is necessary to go back to basics.

The diagnosis and management of skin disease makes up a large component of primary care and most GPs develop diagnostic and surgical skills to deal with this demand. In recent years, nurses have been more involved in the provision of dermatological care and have had to make diagnoses in circumstances such as a walk-in clinic.

History

The starting point

- Note basic demographics of the patient:
 - Age – infectious diseases are more common in children but malignancy gets more common with advancing age.
 - Sex – some conditions are more common in men or more common in women.
 - Race and country of origin.
 - Current residence – important in an infectious outbreak.

Consider the lesion

- **Duration:**
 - Onset – sudden versus gradual. Establish whether this is an acute presentation or an ongoing chronic problem.
 - Previous episodes – eg, [photodermatoses](#) tend to recur every spring with the onset of good weather.
 - Change – fluctuation versus persistence. Consider variation in severity – eg, occupational contact allergic dermatitis may improve when on holiday. [Urticaria](#) may be quite dynamic in its presentation but others are much more static ^[1].
- **Location** – as well as skin, remember mucous membranes. The site of lesions is important. [Eczema](#) tends to be on flexural surfaces (in adults and older children) whilst [psoriasis](#) tends to be on extensor parts. Lesions may have a specific distribution – around the genitals, in sweaty regions or in sun-exposed areas. Establish whether the lesion has spread.
- **Provoking or relieving factors** – eg, heat and cold may be either aggravating or relieving factors, especially with urticaria; repeated drug exposures with fixed drug eruptions.
- **Associated symptoms:**
 - Itch – some lesions are renowned for being itchy and others for not being so but this can be misleading ^[2]. Psoriasis is said to be non-itchy but there may be pruritus in the genital area.
 - Tenderness – inflammation is often tender.
 - Bleeding or discharge – bleeding may indicate malignancy and discharge may occur with an infected lesion.
 - Systemic symptoms – such as pyrexia, malaise, joint pain and swelling or weight loss. Some skin lesions are markers for [underlying malignancy](#).

- **Response to treatment** – both patient and doctor initiated. A number of treatments may have been tried prior to consultation – eg, antiseptic lotions, calamine, antihistamines, over-the-counter (OTC) steroid or antifungal creams, herbal remedies or medication prescribed for another family member or friend. Complementary medicines such as Chinese herbs may have unknown ingredients and potency. Partially treated lesions are the most difficult to diagnose.

Do not forget to cover

- **Past medical history:** is often relevant – eg, [diabetes](#) may suggest necrobiosis lipoidica.
- **Family history:** may indicate a familial trend for the disease. Other family members will have been given a diagnosis. A genetic predisposition is important in many diseases, including eczema and psoriasis. Alternatively, concurrent and recent affliction of other members of the family suggests a contagious or environmental aetiology. Familial atypical mole and [melanoma](#) (FAMM) syndrome should be considered where several family members have multiple melanocytic lesions, some atypical, with at least one case of melanoma in the family.
- **Occupation, hobbies and pastimes:** where there may be exposure to chemicals or a very hot environment, for example.
- **Travel:** particularly to exotic locations, may increase the risk of rarer tropical diseases. Consider cumulative exposure to sunlight or sunbeds and history of sunburn, as these increase the risk of skin malignancies.
- **Drugs:** prescribed, over-the-counter or other therapies. Drug eruptions can be highly variable. Illegal drug use may have dermatological manifestations – eg, anabolic steroids and [acne](#).
- **Smoking and alcohol:** alcohol use has an association with psoriasis. Smoking increases the risk of some malignancies and has a close association with [palmoplantar pustular psoriasis](#).
- **Allergies.**

- **Psychological and social sequelae:** people with severe, chronic, visible and disfiguring skin disease may suffer from [anxiety](#), [depression](#) and social isolation; these issues require exploration. Psychological problems may also cause skin disease – eg, dermatitis artefacta.
- See the separate [Living with Skin Disease](#) article.

Examination

In general, a thorough examination of the whole skin is considered best practice but may not be warranted – eg, diagnosis of a verruca.

First just look

- Note whether the patient looks ill or well. Note whether there any clues as to systemic illness.
- Wipe off any creams, make-up or anything else that may obscure the true nature of the lesions.

Now focus on the lesion(s)

- Note the **position** of lesions:
 - Consider whether the **distribution** is symmetrical or asymmetrical. (Symmetrical distribution suggests an endogenous condition such as psoriasis, whilst asymmetry is more typical of an exogenous condition such as tinea.) Some rashes have a characteristic distribution such as with [shingles](#).
 - Note whether flexor or extensor surfaces are involved.
 - Establish whether there are areas of friction or pressure.
 - Note whether sweaty regions are involved.
 - Note whether exposed regions are involved.
 - Consider whether sexual contact is a factor (consider genital lesions but also the lower abdomen and upper thighs).
- Note the **size** of the lesion. Measure for accuracy.
- Establish whether it is single or multiple.

- If a rash exists, consider its **morphology**. Are individual lesions:
 - Macular?
 - Papular?
 - Vesicular?
 - Crusty?
 - Urticarial?
- Note colour, shape, regularity or irregularity. Note whether areas of inflammation around it exist. Consider whether the edge is clearly demarcated or poorly defined.

The use of dermatoscopy may aid diagnosis beyond naked eye examination but should only be used by those with appropriate training.

Now touch

- Tenderness.
- Warmth.
- Site within the skin.
- Thickness.
- Consistency (hard, soft, firm, fluctuant).
- Note whether firm pressure leads to blanching.
- Note whether it is friable and whether it bleeds easily.
- Scaling - disorders of the epidermis may produce scale, which may be visible, or gentle scratching of the skin may make it apparent.
- If appropriate, look to see if there is any evidence of infestation - eg, [scabies](#)' burrows.
- Note hair in the local skin and on the head.
- Look at the nails.
- Note whether mucous membranes are involved. Examine the genitals where appropriate.

- Note regional lymph nodes. This may be relevant for infectious or malignant lesions.

Differential diagnosis

Having completed the full history and examination, it is usually possible to make a firm diagnosis but, if not, it is certainly possible to distil a great deal of information about the condition. Very often the impressive names that dermatologists give to unusual conditions are nothing more than a description in Latin. Beware of the 'great mimickers' – eg, [amelanotic melanoma](#), [lupus erythematosus](#), [sarcoid](#), [mycobacteria](#) and [cutaneous T-cell lymphoma](#)^[3]. Diagnostic tables and algorithms have been developed to complement clinical acumen.

Where a firm diagnosis cannot be made with a reasonable degree of confidence, investigations may be helpful and even a therapeutic trial may be beneficial. However, steroid cream can mask some aspects of a disease and dermatologists often complain of the difficulties of diagnosing partially treated disease. Teledermatology is fundamentally changing primary care's access to an expert opinion on a skin condition, although concerns persist about reduced diagnostic reliability and the ongoing need for face-to-face consultations, particularly in the diagnosis of skin malignancies.

One of the most important decisions to make about a skin lesion is whether or not it is malignant. There must be a high index of suspicion, and absolute certainty is rare. For pigmented lesions, change is an important element in diagnosing [malignant melanoma](#). Current guidelines suggest assessing on a weighted seven-point scale^[4]:

Major features of the lesions (score two points each):

- Change in size.
- Irregular shape.
- Irregular colour.

Minor features of the lesions (score one point each):

- Largest diameter 7 mm or more.
- Inflammation.
- Oozing.
- Change in sensation.

Suspicion is greater for lesions scoring three points or more but, if there are strong concerns, any one feature is sufficient to prompt urgent referral, as should:

- Any new solitary nodule or plaque, regardless of colour where a benign diagnosis (eg, a [dermatofibroma](#)) cannot be made with confidence. Half of nodular melanomas are hypomelanotic or amelanotic and may present as a pink nodule.
- A new pigmented line in a nail.
- Lesions growing under a nail.
- Pigmented lesions on mucosal surfaces.

Investigations

Swabs

These can be taken for bacteriology and virology.

Skin scrapings

- Skin scrapings for microscopy can be useful to diagnose [fungal infections](#), [pityriasis versicolor](#) and ectoparasitic infections such as scabies. For dermatophyte infections, scrape the advancing edge of the scaly lesion carefully.

- Nail clippings – ensure a good-sized clipping and scrape from the under the surface of the nail.
- Hair root samples can be useful in suspected [tinea capitis](#).

Most laboratories will supply appropriate specimen containers – usually, small envelopes with a black interior, as it is much easier to see the sample against such a background.

Wood's light

This is an ultraviolet light (wavelength 360–365 nm) used in a darkened room. It should be held at least 10–15 cm from the skin and time should be allowed for dark accommodation to occur. When shone on some fungal infections, the light causes fluorescence.

- *Tinea versicolor* fluoresces with subtle gold colours.
- Erythrasma due to *Corynebacterium minutissimum* fluoresces a bright coral red.
- *Tinea capitis* caused by *Microsporum canis* and *Microsporum audouinii* fluoresces a light bright green but most *tinea capitis* infections are caused by *Trichophyton* species that do not fluoresce.

[Pseudomonas aeruginosa](#), especially in burns, may provide green-yellow fluorescence. [Vitiligo](#) also fluoresces. Its associated depigmentation can be differentiated from hypopigmented lesions by the ivory-white colour under Wood's light. Wood's light can also be used in the evaluation of pigmented lesions, marking out areas of lentigo maligna or melasma (cholasma).

Skin biopsy

- Biopsy may be used to provide a histopathological specimen to aid diagnosis and guide further management. Always provide relevant history, description and differential diagnosis to assist the histopathologist. Histology may not be able to differentiate between some cases of dysplastic naevi and melanoma so that any case of incompletely excised 'dysplastic naevus' should be referred for a further excision.

- Shave and punch biopsy techniques can be used. Shave excisions are less demanding technically, and are useful when the lesion is small and the risk of malignancy is low. Punch biopsies remove a core of skin from the epidermis to subcutaneous fat. Ideally the biopsy should include normal skin, part of the lesion and the transition zone. Excisional biopsies aim to remove the entire lesion, with a margin dependent on the risk of malignancy. Its advantage is that the procedure can provide treatment as well as diagnosis for many lesions but it is more demanding of time, equipment and expertise.
- Biopsy can also be used for immunofluorescence and culture (eg, mycobacterium, leishmaniasis).

Patch and skin prick tests

These are used for the investigation of [contact allergic dermatitis](#) and suspected latex and other allergies.

Further reading

- [Terminology in dermatology](#); DermNet NZ
- [Nomenclature of skin lesions](#); University of Wisconsin
- [Primary Care Society for Dermatology](#)

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