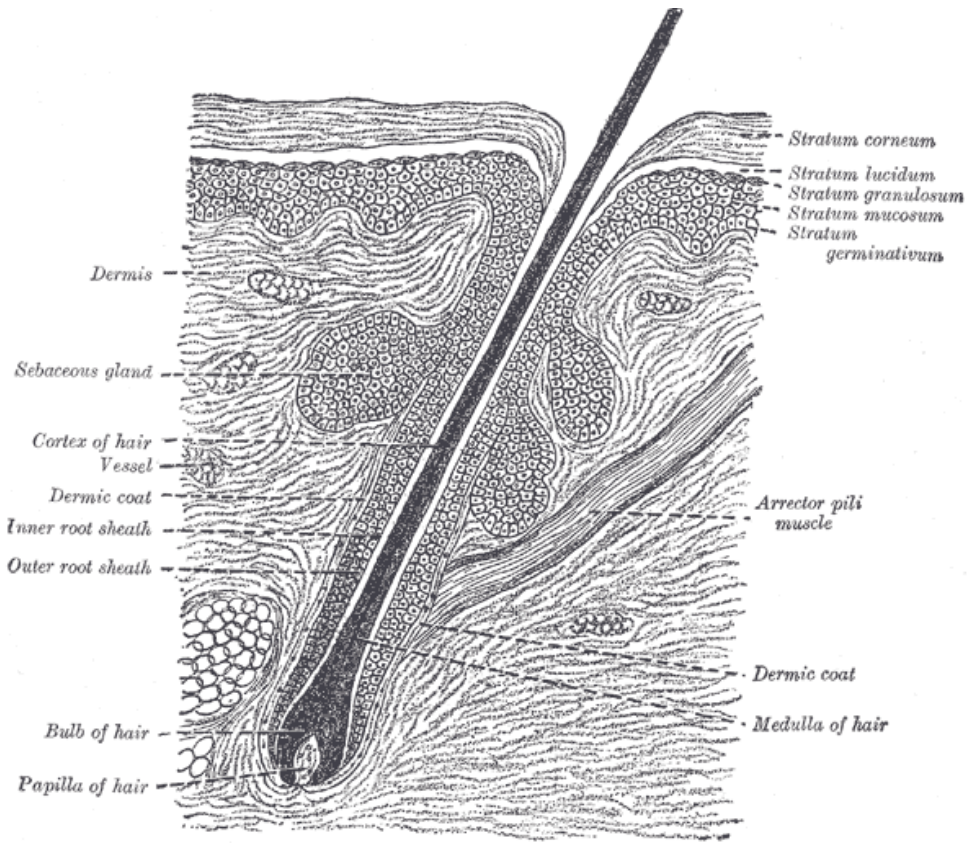


Brief anatomical / histological reminder



EPIDERMIS

DERMIS

HYPODERMIS

Dermatology - Basic descriptive terms

MACULE / PATCH

(Latin *macula* = stain)

The simplest dermatological lesion.

- Circumscribed color change
- No elevation or depression
- Macule: diameter \leq 1 cm
- Patch: diameter $>$ 1 cm

- Flat and can be seen but not felt.
- Noted by a change in colour of the skin.
- Brown, blue, red or with a reduced or absent pigmentation.

Brown (usually due to melanin) (A)

Becker's nevus
Café-au-lait spot
Freckle
Melasma
Phototoxic drug eruption

Blue (melanin or other particulates) (B)

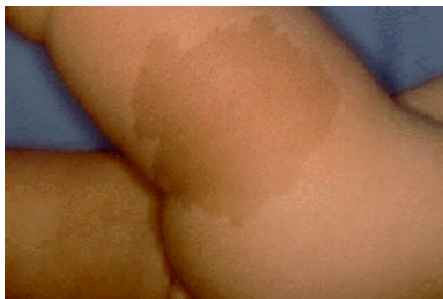
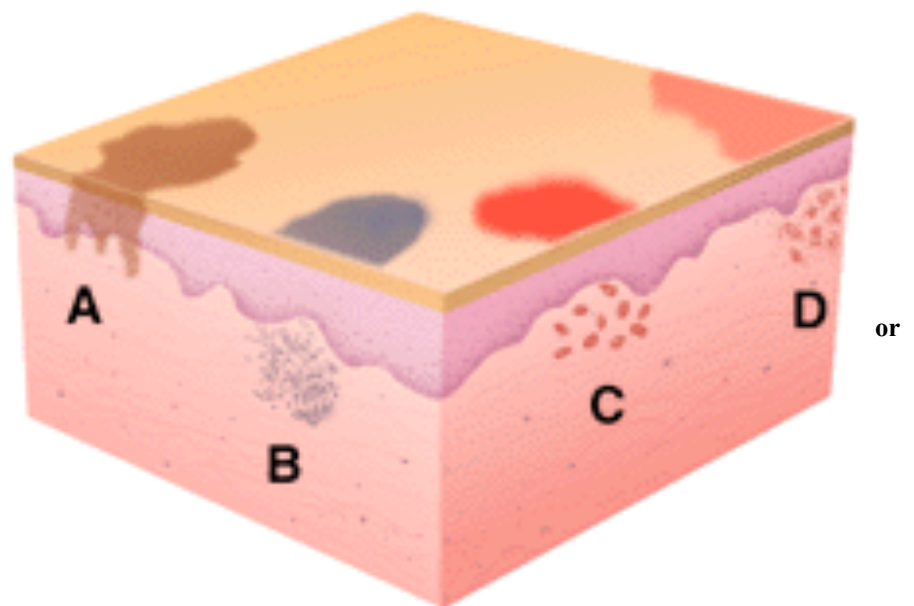
Ink (tattoo)
Mongolian spot
Ochronosis

Red (vasodilatation in dermis without (C) with (D) inflammatory cells present.)

Drug eruptions
Juvenile rheumatoid arthritis
Rheumatic fever
Viral exanthems

Hypopigmented

Piebaldism
Radiation dermatitis
Vitiligo
Tuberous sclerosis



individual completely lacking in

"Cafe au lait" patch. The patches are more darkly pigmented than the surrounding skin because there is an increase in number and activity of melanocytes in the epidermis.



Vitiligo. Irregular white patches on the fingers of a darkly-pigmented melanocytes

PAPULE

Latin papula = pimple

- A solid, elevated lesion
- Flat, pointed or rounded
- 1 cm or less
- Coalesce into plaques

A small, solid and usually conical circumscribed elevation of the skin. They are less than 1cm in diameter. Papules do not contain pus, which distinguishes them from pustules. Papules often occur in clusters and can accompany rashes.

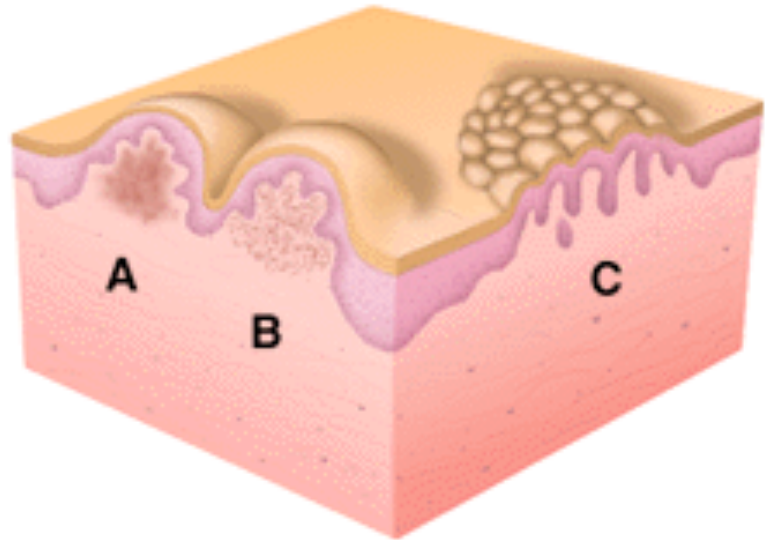
Papules are palpable because there is accumulation of material in the dermis which gives additional substance to the skin.

The accumulated material may be a metabolic deposit, amyloid or mucin, for example (A)

...Or a cellular infiltrate of inflammatory or neoplastic cells -(B)

Often the lesion's substance arises from proliferation of cells in one or more layers of the epidermis (C).

Papules due to dermal metabolic deposits or cellular infiltrates tend to have indistinct margins, whereas those due primarily to epidermal hyperproliferation tend to have very well-demarcated margins. When the papule itself consists of tightly packed individual small hyperkeratotic tiny papules, the lesion is said to be verrucous or warty or vegetating.



This group of variably-sized symmetrical dome-shaped and umbilicated brown papules is diagnostic of molluscum contagiosum, a viral infection

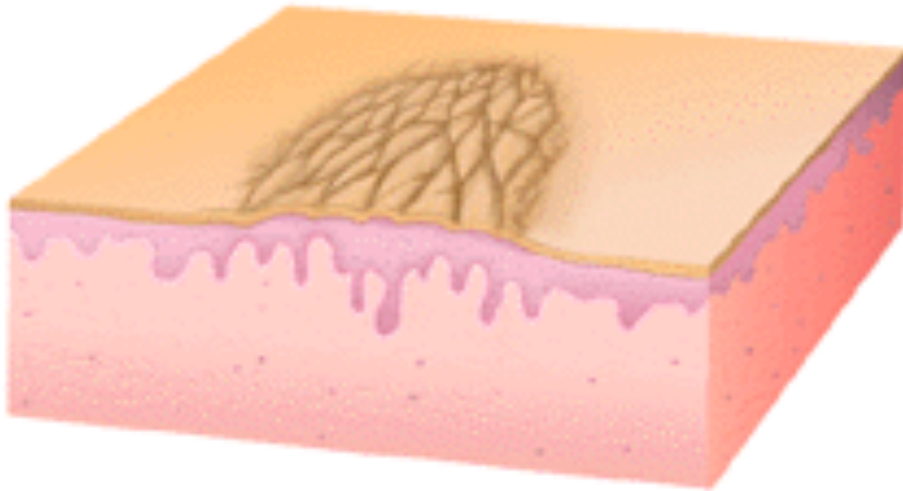
These erythematous scaly papules on the abdomen are diagnostic of psoriasis. They contain both an inflammatory dermal component and a hyperplastic epidermal component. The tendency to occur in areas of skin injury (as in the linear distribution of papules seen here, from a scratch) is typical for a small number of skin diseases, including psoriasis.



PLAQUE

- Circumscribed, solid elevation
- Usually flat-topped
- Surface area > height
- Greater than 1 cm diameter

An elevated lesion that occupies a much larger surface area than a papule. May be a confluence of papules or have the same pathologic features of a papule, but spread out over a larger surface.



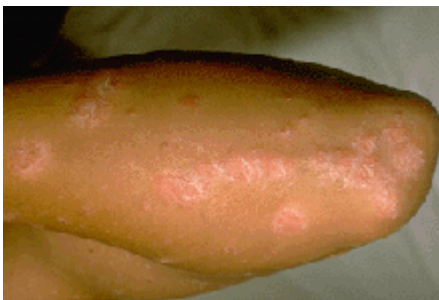
Plaques may be mainly composed of

(A) Dermal elements, e.g. metabolic deposits, granulomatous inflammation or neoplasms

(B) Epidermal components, e.g. hyperplastic epidermis induced by chronic scratching or rubbing ([lichenification](#))

(C) Both.

Generally, plaques with well-circumscribed margins have a greater epidermal component, and those with poorly circumscribed margins have a greater dermal component.

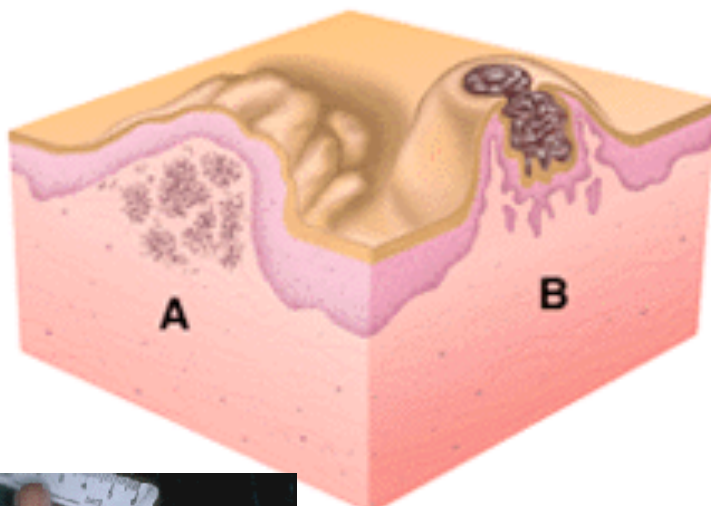


This picture of psoriasis shows both papules (the small reddish scaly lesions), and plaques, formed by the confluence of papules. The silvery, reflective quality of the scales taken together with the distribution of lesions on the extensor surface of the elbow is diagnostic.

NODULE/TUMOUR

- Palpable, variably shaped lesion
- Epidermal, dermal, subcutaneous
- Usually elevated, any size
- Tumor is a term for any mass

Nodules are larger and deeper than papules. They are variable in shape and may have a mixture of epidermal, dermal, and subcutaneous components.



(A) A large dermal infiltrate of neoplastic cells, as might be seen in a cutaneous T-cell lymphoma, or of granulomatous inflammation, as might be seen in mycobacterial or deep fungal infection

(B) A dome-shaped nodule with a central crater filled with debris and a hyperplastic epidermis.

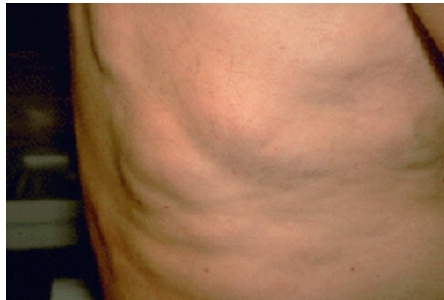


This large, egg-shaped, smooth, flesh-coloured tumour has an ulcer and eschar on part of its surface. An important clue to the malignancy of this lesion is given by the prominent neovascular channels overlying the smooth surface of the tumour. Epidermal in origin.

These shiny, tense, reddish-brown at different depths in the skin. They are suggesting that the major element of the dermis. These lesions are neoplastic melanoma (But the differential includes could be granulomatous inflammation, perhaps from occupational exposure to beryllium, silica, or



papules and nodules appear to arise rather poorly circumscribed, pathological process occurs in the infiltrates from malignant lymphoma, leukaemia, or Kaposi's sarcoma but tuberculosis, [sarcoidosis](#), leprosy, or zirconium.)



These tumours and nodules are flesh-coloured and very indistinct, indicating that the major element of the pathological process occurs in the deep dermis or subcutaneous tissues. These symmetrical soft nodules and tumours represent the most common benign neoplasms of adipose tissue, [lipomas](#), which arise in, and are limited to, the subcutaneous fat.

VESICLE/BULLA

- **Circumscribed, fluid-filled lesion**
- **Subcorneal, intraepidermal, subepidermal**
- **Vesicle: diameter 0.5 cm or less**
- **Bulla: diameter > 0.5 cm**

A fluid-filled chamber arising between the epidermis and the dermis. The fluid may be clear and straw-colored or have variable amounts of blood mixed in.



Fluid-filled vesicles all at the same stage of development. They are associated with some localised erythema. Some of the vesicles have a tiny central depression or umbilication typical of herpes simplex virus infection

These tense symmetrical bullae contain flaccid lesion (just under the bandage) These bullae have developed on tenseness suggests that the origin of the at the junction of the epidermis and these lesions strongly suggest the diagnosis of bullous pemphigoid



straw-colored fluid. Another more contains a small amount of blood. clinically normal skin. Their vesicle is deep in the epidermis or dermis. Although not diagnostic,

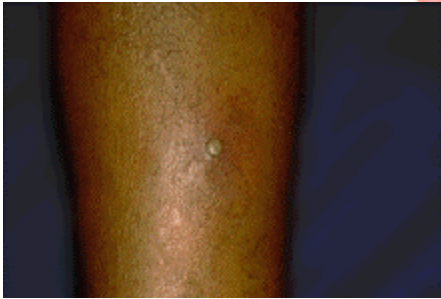
PUSTULE

- A vesicle or bulla with purulent exudate
- May or may not be sterile
- Vary in size and shape

The same morphology as vesicle/bulla, but instead of having clear fluid within the vesicle, it is filled with pus. As with vesicles and bullae, pustules may occur at different levels within the epidermis. When the pus is contained within the dermis, the lesion is termed abscess or furuncle and when deep and dissecting through tissue planes, *carbuncle*.



This solitary pustule is centred on a much larger area of erythema on the leg.



probably sub-corneal, pustules occurring wide areas of skin suggests generalised of pus from one of these lesions would be



Innumerable tiny superficial, on an erythematous base over pustular psoriasis. A Gram stain sterile

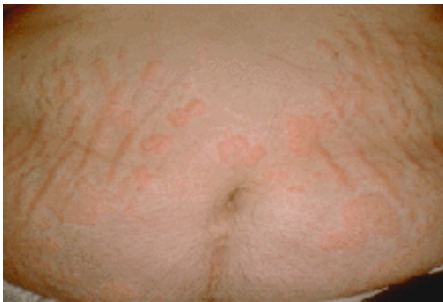
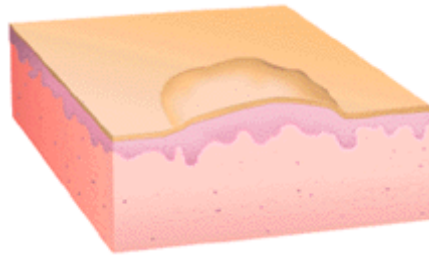


These tightly **grouped** tense pustules are associated with local erythema. Some of the vesicles are umbilicated. All are in the same stage of evolution. A Gram stain of pus from one of these pustules would reveal polymorphonuclear leukocytes only and no microorganisms. Except for being pustules instead of vesicles, these lesions are very similar to the vesicles of **herpes simplex virus infection** and are nearly diagnostic .

WHEAL

- Firm edematous plaque
- Infiltrating fluid may cause blanching
- Usually transient

A raised papule that lacks the associated epidermal hyperplasia or dermal metabolic deposits or cellular infiltrates that define true papules. This lesion is due to the transudation of fluid into the epidermis due to a local, acute change in vascular permeability.

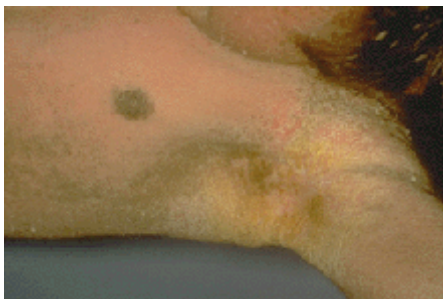
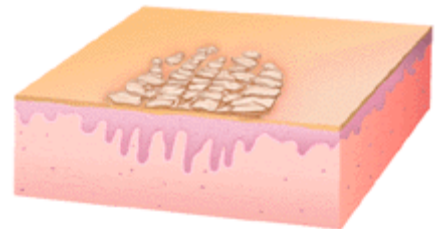


This man has annular, circular, and polycyclic wheals on his abdomen. Wheals have rather indistinct margins, as would be expected for skin lesions where the primary pathological process is in the dermis. In this case the wheals are erythematous, indicating that vasodilatation has occurred.

SCALE

- Stratum corneum becomes perceptible
- Produced by abnormal keratinization or shedding
- Can overly macules, papules, & plaques

This illustration shows a plaque with overlying scale. The plaque in this case has a hyperplastic epidermis and the scales are thick, densely packed, and cracked apart, like dried mud.



focal areas of clinically normal shiny and compact, in contrast to

Diffuse thick and yellow scaling with accentuation in the anterior and posterior axillary folds. This is strongly suggestive of ichthyosis.

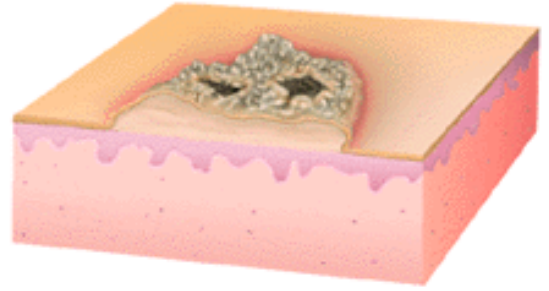


Extensive scaling on the feet, with skin. The quality of the scale is thick, the patient above. It is psoriasis.

CRUST

- Collection of debris on skin surface
- Dried exudate of serum, blood or pus
- A scab

A deposit of dried serum on the surface of the skin.



Very thick mixture of scale and crust on an inflammatory base with a predominantly acral distribution. Note also the thickened, pitted nails, the thickening of the proximal nail folds, and the retraction of the cuticles.

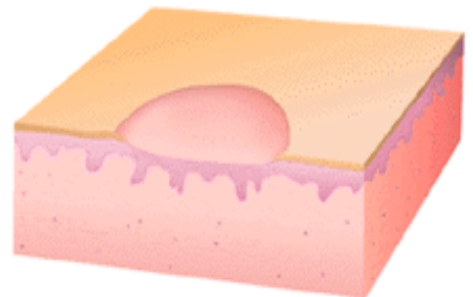
(keratoderma blenorrhagicum, a nearly, but not quite diagnostic feature of Reiter's syndrome)

EROSION

- Focal loss of epidermis
- Loss does not penetrate into dermis
- Heals without scarring

A loss of epidermis, of any thickness. These wounds usually heal without scarring, but can have pigment abnormalities.

If the wound extends through the basement membrane zone, there will be variable amounts of scarring.



Red, shiny, erosions with typical sunburn-like desquamation at the periphery. One fresh lesion (upper left) shows that erosions can evolve from bullae. In this case, pemphigus foliaceus.

This candidiasis in some sweaty fold or other.



immunosuppressed patient has

ULCER

- Focal loss of epidermis and dermis
- Loss does penetrate into dermis



Essentially an erosion that goes through the entire epidermis and into the dermis – or even *through* the dermis. A rolled-up border might be the result of neoplasm, inflammation or edema.



HIV patient with punched out perianal ulcers with red granulating bases. diagnostic of Herpes simplex virus infection.

Variably sized ulcers on a leg. The skin is shiny and hairless, indicating poor peripheral perfusion and has pigment changes suggesting venous incompetence.

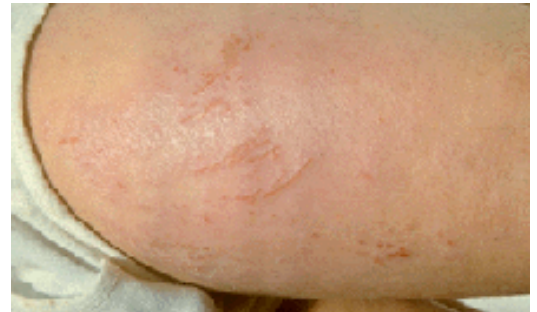


EXCORIATION

- Caused by scratching
- Linear loss of epidermis
- May penetrate into dermis
- May heal with scarring

Linear parallel **excoriation** on the thigh of a boy with atopic dermatitis. These lesions occurred on an erythematous base. The parallel lesions are about a finger thickness apart. Difficult to tell what came first,

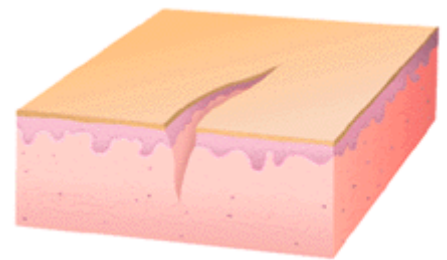
the itch or the scratch. We can conclude only that this patient itches rather badly!



FISSURE

- Caused by drying
- Deep linear split in the skin
- Penetrates into dermis

A canyon-like crack through the epidermis and into the dermis. In contrast to an excoriation, there is no substance of the skin missing from being scratched away. Lateral pressure makes the skin appear whole again. This would not close an excoriation.

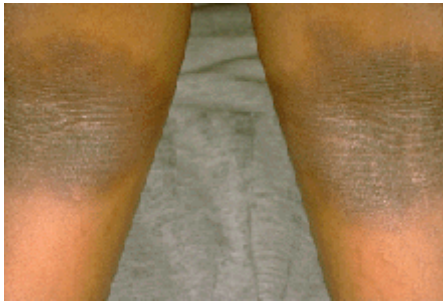
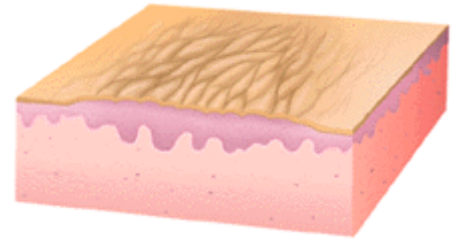


This deep fissure in the thick cornified cell layer of the heel epidermis is caused by xerosis and hyperkeratosis. These lesions are often quite disabling when they occur in weight-bearing skin or in areas subject to repeated flexion.

LICHENIFICATION

- Leathery thickening of all skin layers
- Exaggerated skin markings
- Caused by chronic scratching/rubbing

Hyperplasia of all compartments of the epidermis with acantholysis, papillomatosis, and hyperkeratosis. Thickening of the collagen bundles in the superficial dermis can occur, alongside an inflammatory cell infiltrate.



Symmetrical, dark, poorly defined plaques in the popliteal flexural areas. Grossly thickened, leathery, hyperpigmented skin and the deep, widely-spaced skin markings. This distribution suggests atopic dermatitis.

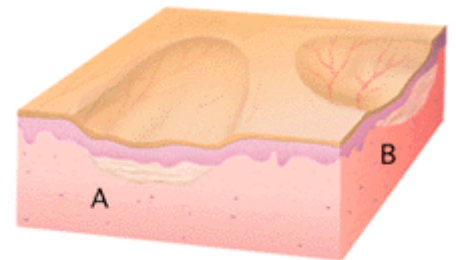


ATROPHY

- Focal depression of the skin
- Results from thinning of the epidermis and/or dermis
- Potent topical steroids can cause

(A) dermal thinning without changes in the epidermis.

(B) thinning and flattening of the epidermis as well as dermal thinning. Epidermal atrophy allows visualization of the superficial dermal vasculature, as shown.



SCAR

- Focal replacement fibrosis of the skin
- Results from destructive processes
- Vary in texture, color, and hair growth
- May be hypertrophic or atrophic

Keloid has the consistency and composition of scar tissue, but unlike scars, grow beyond the border of the injury that incited them.



Atrophic **depigmented** scars surrounded by a **hyperpigmented** border. The lesions are distinctive of **chronic discoid lupus erythematosus**. (Discoid or *Nummular* lesions)

PETECHIAE AND PURPURA

Petechiae; Pinpoint flat round red spots under the skin surface caused by **intradermal hemorrhage** (bleeding into the skin). Petechiae are red because they contain red blood that has leaked from the capillaries into the skin. Petechiae are quite tiny (less than 3 millimetres in diameter) and do not blanch when pressed upon.

Purpura: A haemorrhagic area in the skin. The area of bleeding within the skin, by definition, is greater than 3 millimetres in diameter. The appearance of the purpura depends on age of the lesion. Early purpura is red and becomes darker, then purple, and brown-yellow as it fades. Purpura does not blanch when touched.



Other terms

Annular – ring like

Reticulated - net like

How to approach a rash

Endogenous - from inside - allergy, atopism, drug rashes;

vs

Exogenous - from outside - fungal infestation, contact dermatitis

Symmetry

Distribution

Morphology Surface

Margins

Blisters

Induration

Inflammation