

The skin

The skin forms a hard-wearing outer covering for the whole body. The skin provides a good example of the material on cells and tissues covered so far, because it demonstrates the classification of tissue types and the utilisation of specialised cells to bring about a variety of important functions.

Yet the skin has become important in other ways to humans. To many, it performs a cosmetic and adornment function and provides a means of communication between humans. Blushing and fear are examples of just two emotions that can be portrayed through the skin. It can be an indication of health and diet, age and race, even occupation. Skin is painted, tattooed, pierced and preened to attract the attention of others; it is the human equivalent of a male peacock's tail feathers.

The skin consists of three distinct tissues: keratinised stratified epithelium, areolar connective tissue and adipose tissue. These are arranged into three layers:

- epidermis
- dermis
- subcutaneous layer.

Activity



In your own words, describe the journey of an epidermal epithelial cell from its beginning to desquamation, making sure you use the correct terminology.

Epidermis

The epidermis is the outermost and visible layer of the skin. 'Epi' means 'a covering for' the 'true skin' (dermis). It is composed of keratinised stratified epithelium and when viewed under a microscope five distinct layers can be seen. Like all stratified epithelia, it begins life at the basement membrane where the cells appear as columnar cells. As the cells divide (mitosis) older ones get pushed towards the skin surface

and as they journey upwards they transform and get impregnated with a protein called keratin. This causes the cells to harden, dry out and 'die'. Once at the surface the cells have changed from columnar cells to flat, dead scales which are sloughed off into the environment – a process called desquamation. It takes approximately 30 days for this process to happen, although the process slows as we age. Once a person has reached middle-age this process may have slowed to as long as 45 days, which can result in the skin appearing dull and lifeless as the blood supply is not as easily seen.



Hints and tips

The epidermis varies in thickness on different parts of the body and its main function is one of protection. It is often thickest where there is significant wear and tear, such as on the soles of the feet and palms of the hands, and is thinnest on the eyelids and lips.

Formation of the epidermis

The stratum germinativum (basal layer) is the deepest layer, consisting of live cells that are columnar-shaped, each with a nucleus. These cells are moist and obtain nutrients and oxygen from the tissue fluid that seeps from the blood vessels in the dermis and surrounds them. These nutrients are used for mitosis, where each cell divides to form two identical cells. Star-shaped cells called melanocytes are present at this level and they produce melanin, a pigment which gives the skin its natural colour. When stimulated by exposure to ultra-violet light, the melanocytes produce more pigment to protect the deeper layers and structures within the dermis.

As new cells are formed at the stratum germinativum, old ones are pushed towards the surface, undergoing change as they do so. The cells appear to grow spines or 'prickles', giving rise to the stratum spinosum or prickly layer. It is here in the epidermis that melanin is placed into the cells from the melanocytes. In the lower levels there is still some mitosis taking place and in the upper levels, the keratinisation zone begins where the cells are impregnated with a protein called keratin.

Present at the stratum spinosum level of the epidermis are Langerhan cells – specialised cells that respond to the presence of antigens and help the white blood cells destroy invading micro-organisms, and so form part of the immune system.

As the cells enter the stratum granulosum or granular layer, keratinisation is completed and the cells 'die', losing their moisture and hardening. The nuclei and the cell wall break down as they work upwards towards the surface.

The absence of nuclei and cell walls in the stratum lucidum causes it to appear clear when viewed under a microscope. An enzyme has destroyed the melanin and the keratin has dried the cells, causing them to flatten and giving a transparent appearance. There is also a thick, mucus-like substance present at this area of the epidermis called the Rheims barrier, which forms as the cells of the stratum granulosum expel water and mix with the fatty acids present in the skin. This barrier prevents water, products and micro-organisms penetrating the epidermis into the dermis.



Hints and tips

The pigment melanin absorbs ultra-violet light and in doing so darkens and produces a chemical called 7-dehydrocholesterol, a precursor to Vitamin D. The absorption of this light ensures that the collagen and elastin fibres in the dermis are maintained intact, preventing a loss of elasticity and the onset of premature ageing. The darker the skin naturally, the more protection from UV light is provided and the more likely the signs of ageing appearing later in life.

Key terms

Germinative zone – this layer consists of the stratum germinativum and the stratum spinosum.

Keratinisation – the process by which cells are impregnated with keratin, lose their moisture and nucleus and then die.

Keratinisation zone – refers to the upper layers of the stratum spinosum and the stratum granulosum together.



Hints and tips

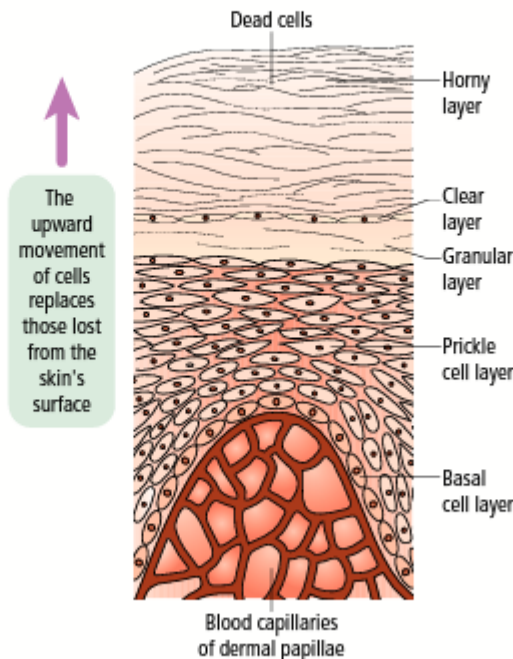
The stratum lucidum is responsible for controlling water in and out of the body. Excessive water loss results in dehydration while excessive absorption of water means the body would become 'water logged' every time we had a soak in the bath or went out in the rain.



Hints and tips

The thickness of the stratum corneum combined with the skin's natural oils provides some 'waterproofing'.

Eventually the cells appear as dry, flat, keratinised flakes of the **stratum corneum** or horny layer. These hardened cells are shed from the surface by natural rubbing from, for example, clothing and by special skin products containing granules that slough off the dead skin. This process is called desquamation.



△ Layers of the epidermis

The dermis or 'true skin'

The dermis is the deeper layer of the skin found directly underneath the epidermis and is also known as the 'true skin' because it contains the structures associated with the skin which perform many of the skin's functions. It is formed from areolar tissue, gives the skin its physical strength and accounts for more than 90 per cent of the skin mass. The fibres, namely collagen and elastin, provide support, strength, elasticity and have moisture retaining properties.

Collagen fibres give the skin its strength, resilience, plumpness and youthful appearance, while elastin fibres give the skin elasticity, enabling it to stretch to accommodate an increase in fat cell distribution in the form of weight gain and/or pregnancy.

The cells of the dermis that connect with the hypodermis underneath form connective tissue made up of two distinct layers:

- 1 the more superficial papillary layer
- 2 the deeper reticular layer.

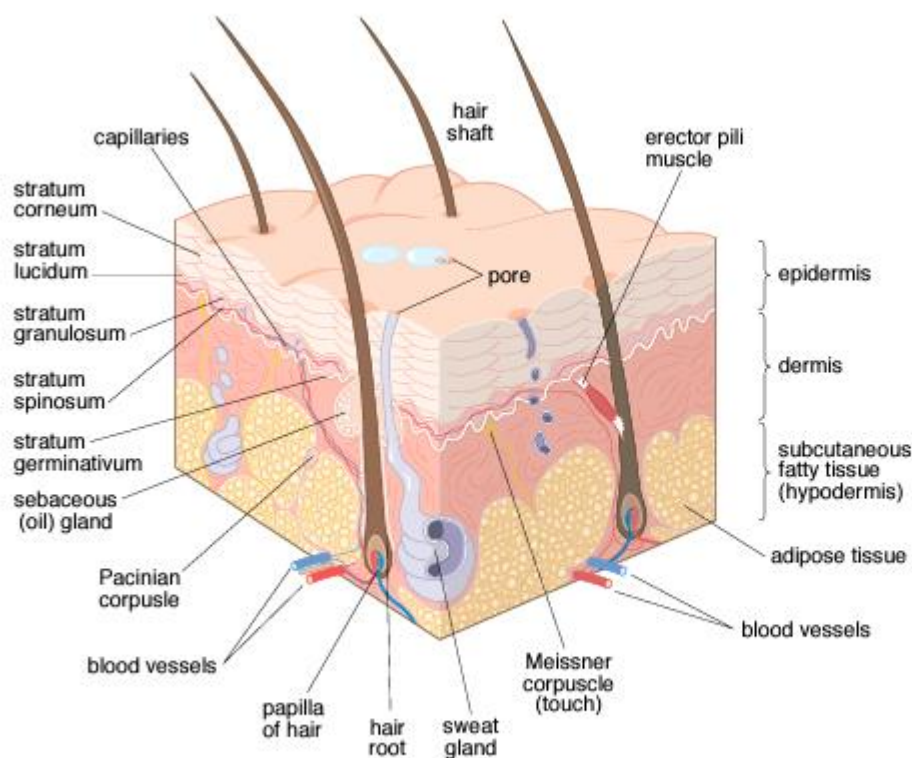
Papillary layer

The papillary layer is the upper most part of the dermis and is in direct contact with the epidermis. It provides vital nourishment to the living layers of the dermis and has irregular protrusions into the

epidermis called dermal papillae. These papillae pull the epidermis down towards the dermis and create ridges, which are what give us our unique finger prints. The papillary layer provides the structures within the reticular layer with nutrients and oxygen from its rich blood supply and supports the epidermis above.

The dermal papillae contain nerve endings which allow the skin to be sensitive to extreme temperatures, pain, pressure, irritation and touch. There is also a network of blood and lymphatic capillaries, which enable cellular respiration and metabolism in the strata germinativum and spinosum in the epidermis. The blood vessels can constrict or expand to control the amount of blood that flows through the skin and dictate whether body heat is dispelled when the body is hot or conserved when it is cold; this helps to control body temperature. The lymph capillaries present in the dermal papilla perform a cleansing function by mopping up any foreign bodies that might enter the skin through an opening and micro-organisms that may have invaded the tissues. They also remove waste products from the process of mitosis in the stratum germinativum.

Mast cells are also present at this level of the dermis, which burst when stimulated during inflammation or allergic reactions to release histamine. This allows more blood to flow to the area for assistance.



△ Structure of the skin

Reticular layer

Found under the papillary layer, the reticular layer has fewer cells and relatively fewer blood vessels than the papillary layer. It is formed of tough elastic and collagen fibres interwoven with reticular fibres, which provide support for the many structures held within this layer. It is this area which carries most of the physical stress of the skin. The cells present in the reticular layer of the dermis are:

- phagocytic cells: white blood cells that help to defend the body against infection by travelling through the dermis (which is a sterile environment) to destroy foreign matter or harmful micro-organisms
- fibroblast cells: responsible for forming new fibrous tissue. They manufacture collagen and elastin within the dermis.

The dermis also contains structures derived from it:

- Hair follicles: this organ will be discussed in more detail later in this chapter, but this appendage of the skin is responsible for controlling body temperature.
- Arrector pili muscle: attached to the hair follicle, this muscle contracts to pull the hair upright to capture a warming layer of air next to the skin.
- Sensory nerve endings: these alert the brain to outside influences such as changes in temperature, pressure and pain.
- Motor nerves: transmit nerve impulses to the glands and organs of the skin such as the sweat glands and arrector pili muscle.
- Sweat glands: secrete sweat – a fluid that consists mainly of water – to cool the body and excrete waste products such as urea. There are two types of sweat glands: eccrine, which are found all over the body, and apocrine, which produce a more milky fluid with a high degree of waste products. These are found in the groin and axillae and are responsible for body odour.
- Sebaceous glands: produce a lubricant and waterproof natural oil called sebum. This contributes to the flexibility and waterproofing of the skin and provides an acid mantle to fight against disease.
- Blood vessels: bring nutrients and oxygen to the other structures of the skin and remove the waste products produced.
- Lymph vessels: work with the blood vessels to remove waste products but also any foreign particle or micro-organisms. They form part of the body's defence mechanism, i.e. the immune system.



Hints and tips

Generally, women have more adipose tissue under the skin which gives women a rounded and softer appearance, especially in the face where it can soften the features. A lack of adipose tissue in men gives them a more rugged and angular facial appearance.

Subcutaneous layer

Under the dermis but overlying the muscular system is a layer of adipose tissue which is a continuation of the reticular layer and its network of collagen and elastin fibres in a gel-like matrix. The fibres are numerous fat cells or adipocytes whose function is to provide insulation, maintain body temperature, protect underlying tissues and organs and act as an energy store.

Functions of the skin

The functions of the skin are described below.

Heat regulation

The skin regulates body temperature in a number of ways:

- The blood vessels dilate and constrict to increase or restrict the flow of blood near to the surface of the skin.
- Adipose tissue acts as an insulator, preventing heat loss.
- Sweat glands produce sweat that evaporates from the skin surface, cooling the body as it does so.
- The arrector pili muscle contracts to trap a layer of air near to the skin surface which is heated by the body and prevents further body heat loss.
- The nerve endings in the skin register a drop in temperature which, if severe enough, will instigate the rapid contraction of the body muscles to cause shivering.

Protection

- The epidermis acts as a protective barrier against invasion by micro-organisms. It also thickens in areas of wear and tear to form calluses.
- The skin has a natural acid mantle, which is formed by the mixing of sweat from the sweat glands and sebum from the sebaceous glands on the skin's surface. This protects the skin from invasion by micro-organisms.
- Melanin produced by melanocytes in the epidermis absorbs ultra-violet light, producing a natural tan and protecting the 'true skin' from damage.
- The nerve endings preserve the skin from harm by informing the body of danger, such as burning from a hot surface.

Sensation

- The nerve endings in the skin warn us of pain, cold, heat, pressure and touch and prevent trauma to the skin.

Secretion

- The sebaceous glands produce sebum, which forms part of the acid mantle and a waterproof covering at the skin's surface.
- The sweat glands produce sweat to cool the body as described above.

Absorption

- Although the skin is designed to prevent penetration of substances, some substances such as light, essential oils and some drugs (e.g. nicotine through patches adhered to the skin) are absorbed through the skin.

Excretion

- The sweat glands excrete waste salts and water. The skin is the largest excretory organ of the human body.

Vitamin D Production

- Vitamin D is essential for the health of the body and most is produced by the body rather than being absorbed from our food. The production of Vitamin D is a by-product of the darkening of melanin in the epidermis when exposed to ultra-violet light.

Repair of the skin

Primary healing of the skin follows minor damage when the edges of the wound are close together. When the skin is damaged the area becomes inflamed and blood thickens to block the open wound. The fibres within the blood interweave and blood cells block the wound to form a clot, which then becomes a scab.

Specialised cells within the blood called phagocytes and fibroblasts arrive at the site where the former begin to remove the cell debris (scab) and the fibroblasts begin to produce collagen fibres to bind the broken surfaces together.

The epithelial cells of the epidermis begin to repair the epidermis from the basement layer and upwards to the skin surface. The scab begins to separate from the wound and as this process continues eventually falls off. Meanwhile, the collagen fibres bind the wound more strongly underneath to restore the skin's resilience.

Secondary healing follows the destruction of more substantial tissue, where the edges are a distance from each other and the wound is deep, for example the case of an ulcer.




The area becomes highly inflamed and an area of necrotic (dead) material develops central to the site in the dermis due to the action of phagocytes. New blood capillaries and fibroblasts develop at the base of the site and begin to grow up toward the skin's surface with infection being prevented by the phagocytes. Once at the level of the epidermis, the epithelial cells replicate and grow towards the centre of the wound, before gravitating to the surface until the full thickness and resilience of the skin is restored.

Skin diseases and disorders




The following infectious skin diseases and disorders are described only to enable the therapist to recognise their appearance and to enable her to decide whether any proposed treatment should go ahead, having given due consideration to the safety of the client and others. They are not described in order to enable the therapist to make a diagnosis. A doctor is responsible for accurate diagnosis and he or she will rely on the assistance of a laboratory to confirm the presence of the offending micro-organism.

Knowledge of non-infectious conditions are again to confirm the safety of the client during the treatment but the therapist may, in some cases, be able to suggest treatment that might improve a particular condition or decide upon adaptations of the treatment.




Bacterial infections

Disease/disorder	Cause	Description
Impetigo 	Impetigo is caused by two types of bacteria: <ul style="list-style-type: none"> ● <i>staphylococcus aureus</i> ● <i>streptococcus pyogenes</i> 	Bacteria invade healthy skin through a cut, scratch or insect bite. Appears as fluid filled blisters that rupture and form a yellow crust and may be itchy. Highly contagious and care should be taken not to touch the area. Do not perform treatments if the disease is present. Advise client to see a doctor and return for treatment when the condition has gone.
Furuncle (boil) 	Caused by the bacteria <i>staphylococcus aureus</i>	Bacteria enter an open hair follicle and/or pore and invade the tissue, causing symptoms of pain, erythema, swelling and formation of pus. Can appear anywhere on the body but are common on the face, neck, axillae, buttocks and thigh, where there can be abrasion by clothing. Do not perform if present in the area being treated. Any fluid or pus from the sore is infectious and should be avoided. Advise client to see a doctor and return for treatment when infection has gone.
Carbuncle	As above	Carbuncles occur when a group of follicles or pores are infected by the bacteria in the same area of the body.
Folliculitis 	<i>Staphylococci</i> bacteria	Bacteria enter the hair follicle through unhygienic depilatory treatments such as waxing and shaving. Appears as a red rash with small papules and pustules. Common in the beard area of men and underarm or bikini line. Do not treat the area affected and advise the client to see a doctor and to return for treatment when infection has gone.


Viral infections

Disease/disorder	Cause	Description
Herpes simplex 	Caused by the herpes simplex virus type 1 (HSV-1)	Causes cold sores and found on and around the lips and nose. Virus is transmitted by direct contact and has periods of inactivity and activity. When triggered, the symptoms of itching or burning are followed by formation of fluid-filled blisters being apparent which burst to form a yellow crust and/or scab. Virus can lay dormant in the body before being stimulated into action again. Common triggers include exposure to sunlight, winds or when the body is run down, such as when infected by the cold virus. Do not perform treatments in areas where the disease is present as it is infectious. Advise the client to see a doctor and to return for treatments when gone.
Herpes zoster 	Caused by the varicella zoster virus (VZV)	Same virus that causes chickenpox. Symptoms of the disease begin with pain and/or tingling along the pathway of a sensory nerve and then the breakout of fluid-filled blisters which weep to form crusts. Most common on the back or upper chest wall. Do not perform treatments and advise the client to seek medical advice.
Verrucae or warts 	Caused by the human papilloma virus	There are different types of wart caused by this virus that generally are a painless, firm nodule of keratinised cells that is round or oval in shape. Plane warts are smoother with a flat surface and are more common in children; plantar warts or verrucae occur on the feet and can be painful due to the pressure of standing and walking. Common warts appear on the hands. Warts are contagious and the client should seek medical advice.





Fungal infections

Disease/disorder	Cause	Description
<i>Tinea corporis</i> (ringworm) 	All fungal infections are caused by the same fungus, dermatophyte, that lives normally on the skin surface. However, given the right conditions of warmth and moisture, they reproduce, living off the dead keratinised cells of the epidermis, nail and hair. Pets can also suffer from the condition and can be responsible for the infection.	Ringworm of the body appears as a ring of red, rash-like pimples, slightly raised and clearer in the centre which may appear scaly. Very contagious through direct contact or through items such as towels. Do not perform treatments. Advise client to seek medical advice and to return when the condition has cleared.
<i>Tinea capitis</i> 	Dermatophyte fungus	Ringworm of the scalp is similar in appearance to that of the body, with the addition of broken hairs that are stubbly. Do not perform treatments. Advise client to seek medical advice and to return when the condition has cleared.
<i>Tinea pedis</i> 	Dermatophyte fungus	Ringworm of the foot, commonly called athlete's foot. The skin appears flaky, which turns moist and gives off a characteristic smell. Do not perform treatments. Advise client to seek medical advice and to return when the condition has cleared.


Infestations

Disease/disorder	Cause	Description
Scabies 	A mite called <i>acarusscabiei</i> , commonly known as 'itch mite'	Female mite is responsible for symptoms of this contagious parasitic condition as it burrows into the epidermal layers of the skin to lay eggs. This burrowing leaves red 'tracks' that are extremely itchy and later crusted lesions develop. Common sites are in folds of skin such as between the fingers and toes, the axillary and under the breast, but can appear anywhere. Do not perform treatments. Advise client to seek medical advice and to return when the condition has cleared.




Sebaceous gland disorders

Disease/disorder	Cause	Description
Milia 	Activity of the sebaceous gland combined with a fine skin texture	Sebum trapped underneath a layer of epidermal cells gives rise to white or slightly yellow pearl nodules. Found in fine-textured skin, so common around the eye and upper cheek. The epidermis can be broken with a sterile lance and the milia extracted.
Comedones 	Hyperactivity of the sebaceous gland	Sebum trapped in an open pore or neck of a follicle, oxidising in the air to give the characteristic black appearance. Comedones should be softened with heat and/or oil before extraction.
Seborrhoea 	Hyperactivity of the sebaceous gland due to hormonal influences	Excessive production of sebum gives rise to an excessively shiny, oily skin and scalp. Often leads to the development of acne vulgaris.
Sebaceous cysts	Known as steatocystomas, the neck of the sebaceous glands become blocked with epidermal cells and the sebum builds up within the sebaceous gland	Appear as soft or hard mobile swellings under the skin or scalp, which can be painful depending where they are located. Common on the scalp, ears, back, face and chest where there are numerous sebaceous glands. If they cause the client problems they should be surgically removed by a medical practitioner.
Acne vulgaris 	Hyperactivity of the sebaceous gland as a result of hormonal influences	There are the presence of blocked pores, comedones, papules and pustules. Commonly found on the face, back and chest where sebaceous glands are numerous. Severe acne requires medical intervention and the client should be advised to see their doctor.

Sudoriferous gland disorders





Disease/disorder	Cause	Description
Bromidrosis	Activity of the apocrine glands and the action of the bacteria on the skin breaking down the waste products contained within the sweat	Commonly known as body odour. Although there is no risk of cross infection, the salon may wish to refuse treatment on grounds of hygiene and maintenance of reputation.
Anhidrosis	Hypoactivity of the sweat glands caused by dehydration or damage to the sweat glands such as full tissue thickness burns	There is a lack of sweat, particularly noticeable during exertion. This condition can be life threatening as the body temperature can rise to harmful levels.
Hyperhydrosis	Hyperactivity of the eccrine and apocrine glands associated with nerves/stress	The glands over-produce sweat, resulting in visible beads of sweat appearing on the upper lip or clammy hands and/or sweaty feet. The client is safe to treat if they present with this condition. Botox injections have been found to lessen this condition if it is embarrassing for the client.
<i>Miliaria rubra</i> (prickly heat) 	Excessive sweating in hot weather	The sweat glands are blocked by occlusive products such as sun creams but also skin cells or other debris and the sweat accumulates under the skin. Gives rise to a red, itchy rash in the affected areas especially under clothing where increased sweating may occur.

Pigmentation disorders




Disease/disorder	Cause	Description
Ephelides 	Hyperactivity of the melanocytes in the stratum germinativum	Commonly called freckles, activity of some of the melanocytes gives rise to uneven pigmentation patches which darken in sunlight.
Chloasma 	Hyperactivity of the melanocytes through hormonal stimulation	At times when the female body is under hormonal control, such as during puberty, pregnancy, the menopause or when taking the oral contraceptive pill, the melanocytes produce excess melanin in uneven patches which appear darker than the surrounding skin. May appear anywhere on the body but more common on the cheek, forehead and around the eye. The pigment darkens with exposure to UV light but can be avoided by the use of sun protection factor creams.
Vitiligo 	Hypoactivity of the melanocytes giving rise to areas lacking pigmentation	Appear as white patches of no pigmentation so more noticeable and stressful for clients with a darker skin colour. The client should avoid exposure to UV light and should use a sun block in the affected areas.

Albinism	Inactive or absence of melanocytes; normally hereditary	A complete lack of pigment in the skin, hair and eyes which usually appear pink. Sun exposure is dangerous because of the high risk of skin cancer so total sun block should be used on all exposed areas of the body. Skin can be sensitised and so treatment durations and intensities should be considered.
Lentigo	Increased number of melanocytes in an area giving rise to pigmentation	Appears as flat, pigmented area with a defined outline that is unaffected by exposure to UV light.


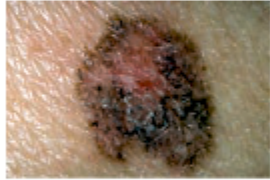

Vascular disorders

Disease/disorder	Cause	Description
Erythema 	Dilation of the blood capillaries superficial to the skin surface	First degree erythema is a healthy reddening of the skin with no distinct outline that dissipates within an hour. It is desirable within a beauty treatment. Second degree erythema is undesirable and appears as a marked reddening of the skin that feels warm to the touch and remains for a couple of hours. Third degree erythema has a defined outline to the reddening and remains visible for days and is painful, e.g. sunburn. Fourth degree appears as third degree but with the addition of swelling.
Telangiectasis (thread veins) 	Persistent dilation of the blood capillaries caused by stimulation, either physical or by extremes in temperature	Blood capillaries are visible under the superficial layers of the epidermis. Commonly found around the nostrils, across the cheek area and areas of the body such as the thighs.
Rosacea 	Skin sensitivity that progresses to a chronic inflammatory condition, exacerbated by alcohol, spicy foods or stress	Characterised by the butterfly-shaped flush across the cheeks and nose. Begins as a tendency to blush easily or sensitivity to temperature, touch or products. Develops into a continuous redness that may also develop pustules and resemble acne. As the condition persists, broken capillaries appear and in severe cases there is swelling and growth of the tissues resulting in extended facial features.
Vascular naevi	Vascular birthmark caused by the blood vessels being very close to the skin surface	Irregular-shaped areas of redness that maybe raised or flat. Appears before, during or after birth.
Port wine stain 	Deep capillary naevus	Present at birth. Irregular-shaped birthmark that can vary from pale pink to purple in colour but is flat to the skin surface. Can appear anywhere on the body but may be distressing to the client if extensive on the face.




Skin disorders involving abnormal growth

Disease/disorder	Cause	Description
<p>Psoriasis</p> 	An inherited non-infectious skin condition. Aggravated by stress and external factors such as products	Irregular-shaped red and scaly patches with a distinct outline. Commonly found on the knees and elbows but in extreme cases on the body, face and even the scalp and eyelids.
<p>Seborrheic or senile warts</p>	Cause is unknown but as the condition is common on sun-exposed areas such as the back, arms, face, and neck, ultraviolet light may play a role	Benign nodular growth that is darker than the surrounding skin. Often referred to as senile warts as common on exposed areas of skin in the elderly.
<p>Skin tags</p> 	Overgrowth of the epidermis	Small, extended growths that protrude from the skin that can be flesh-coloured or pigmented from light brown to black. Harmless and can be removed by advanced epilation methods. An experienced therapist may become qualified to do so.
<p>Keloid scarring</p> 	Overgrowth of scar tissue	Appears at the site of an injury as a smooth, shiny, raised, irregular-shaped scar. Black skins in particular are prone to keloid scarring.

Malignant tumours

Disease/disorder	Cause	Description
<p>Squamous cell carcinoma</p> 	Exposure to sun and UV light, particularly fair skin	Skin cancer affecting the cells of the prickle cell layer (stratum spinosum) of the epidermis. Appears as a raised area of either very dry and scaly or ulcerated skin that has a 'cauliflower' appearance. The cancer can spread to other cells so advise the client to see their doctor immediately.
<p>Basal cell carcinoma</p> 	Exposure to sun and UV light; particularly fair skin	Skin cancer affecting the cells of the basal layer (stratum germinativum) of the epidermis. Appears as a flesh-coloured or pink, flat or raised area of skin that often has blood capillaries visible within it. The client should be advised to see a doctor immediately.
<p>Malignant melanoma</p> 	Over exposure to UV light particularly fair skin	Blue-black pigmented mole that has recently changed in shape, size or colour. Commonly found on areas of the body frequently exposed without adequate sun protection, such as the face, shoulders and arms. The client should be advised to see a doctor immediately.

Allergies

Disease/disorder	Cause	Description
Dermatitis 	Caused by exposure to products such as metals, hair dye, plastics and resins, latex, washing powders, etc.	Mild allergic reaction to an allergen resulting in skin inflammation with a similar appearance to eczema.
Eczema 	Internal factors predisposition a person to the condition. Factors that can worsen the condition include dairy products, stress and perfumed products.	There is erythema and itching at the initial stages and this develops into dry flaking, scaling and weeping and the formation of yellow crusts. Often there is a history of asthma and hay fever in the family.
Urticaria (hives) 	Caused by external allergens such as nettles and heat or by intake of certain foods and drugs such as penicillin.	Allergic reaction of the skin that appears red and itchy with the formation of raised white or pink wheals that can disappear within moments.