

SECTION 1

# THE BASIC TOOLS

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# Chapter 1

## Terminology and Glossary

**Table 1.1** Terms and definitions

Term	Definition
Acanthocyte	Epidermal cell which has lost its adhesion to other cells and has become rounded, often found in sterile pustules and vesicles caused by immune-mediated disease
Acral lick dermatitis	Chronic raised erythematous lesion, usually of a distal limb, due to persistent self-trauma by licking, can develop to furunculosis
Acromelanism	Increase in hair colour at the extremities associated with lower body temperature
ACTH stimulation test	Dynamic cortisol test used in the diagnosis of hyperadrenocorticism, hypoadrenocorticism and adrenal hyperplasia like syndrome
Actinic dermatitis	Dermatitis caused by exposure to solar radiation
Adrenal hyperplasia like syndrome	Descriptive term used for a group of endocrine skin diseases causing hairloss whose pathogenesis is not totally elucidated
Allergen specific immunotherapy	Immunomodulatory treatment for atopic dermatitis using the allergens to which the patient has reacted on allergy testing
Allergy	Abnormal increased immune response to harmless foreign protein
Alopecia	Hairloss due to failure of the hair follicle
Alopecia X	See adrenal hyperplasia like syndrome
Atopic dermatitis	Skin disease caused by exposure and hypersensitivity reaction to environmental allergens
Atopy	An inherited tendency to produce IgE antibody in response to exposure to allergens
Aural haematoma	Fluid accumulation of uncertain aetiology within the cartilage affecting all or part of the pinna
Autoimmune disease	Programmed (often genetically) destruction of self-protein by the immune system
Bacterial culture	Culture of bacteria from uncontaminated samples such as pustules on a plate using growth medium
Bullous pemphigoid	Rare immune-mediated skin disease, often with poor prognosis, resembling the pemphigus group of diseases
Callus pyoderma	Chronic raised lesion with hairloss over a bony prominence subjected to friction (e.g. elbow), can develop to furunculosis
Canine/feline acne	Pustules and/or comedones on the chin with several underlying causes, similar in appearance to but differing in aetiology from human acne
Castration responsive dermatosis	See adrenal hyperplasia like syndrome
Coat brushings	Examination for surface living ectoparasites
Colour dilute follicular dysplasia	(Colour mutant alopecia) Skin condition associated with blue or fawn variants, resulting in hairloss, scaling and dermatosis, usually of dorsal head and trunk

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**Table 1.1** (Continued)

Term	Definition
Corn	Keratin accumulation, usually of the weight bearing digital pads, often with protrusion into the dermis resulting in discomfort
Cushing's syndrome	Hyperadrenocorticism, caused by adrenal or pituitary tumour or ectopic cortisol producing tissue
Cutaneous adverse reaction to food	Skin disease caused by or exacerbated by an immunological or non-immunological reaction to ingested food
Cytology	Examination of cells and microbes by microscopy from superficial or deep skin lesions or ear canals
Deep pyoderma	Bacterial infection involving the epidermis and the dermis
Demodicosis	Dermatosis caused by multiplication of <i>Demodex</i> spp. mites within the hair follicle, usually associated with a local immune defect
Dermatophyte	Parasitic fungus, with a predilection for the hair which causes infection
Dermatophytosis	Infection caused by parasitic fungi with predilection for the hair
Dexamethasone test, high dose	Dynamic cortisol test used to differentiate pituitary and adrenal dependent hyperadrenocorticism
Dexamethasone test, low dose	Dynamic cortisol test used in the diagnosis of hyperadrenocorticism, may differentiate between pituitary and adrenal dependent cases
Diagnosis of elimination	Diagnosis which can only be reached definitively by systematically ruling out a differential list of diagnoses
Discoïd lupus erythematosus	Localised immune-mediated disease, normally benign, frequently affecting the dorsal nose
Epitheliotropic lymphoma	T lymph cell diffuse and generalised tumour of the epidermis
Erythema	Reddening of the skin due to inflammatory change
Erythema multiforme	Skin reaction pattern usually caused by immune-mediated disease, especially food or drug reaction
Exclusion diet	Diet used for food elimination trial in patients being tested for adverse cutaneous reaction to food
FCε receptor	Receptor on antigen presenting cell, specific to an antigen measured in allergy serology
Fine needle aspirate	Sample of cells ± fluid harvested from inside a lesion by suction through a 19 or 21 gauge hypodermic needle attached to a syringe
Flare factors	Extrinsic or intrinsic factors which exacerbate an existing skin disease, for example, secondary bacterial infection, hot or humid environment
Follicular dysplasia	Abnormal or incomplete structure or function of hair follicles
Folliculitis	Inflammation of the hair follicle, multifactorial including bacterial infection, ectoparasitic infestation and immune-mediated disease
Food elimination trial	Feeding an exclusion diet for the investigation of the possibility of adverse cutaneous reaction to food, usually of 3–12 weeks duration
Fungal culture	Culture of fungal elements from a plucked hair sample on a plate containing growth medium and usually a colour indicator
Furunculosis	Foreign body reaction to keratin and hair follicle components dragged into the dermis in severe and usually persistent inflammatory disease
Glabrous skin	Skin which does not normally have hair

Growth hormone responsive dermatosis	See adrenal hyperplasia like syndrome
Hair plucks	Examination of length of hair and its root grossly and by microscopically, samples harvested by epilation (see Chapter 3.3.4)
Hamartoma	Developmental raised lesion, often with change in pigmentation
Hepatocutaneous syndrome	(Superficial necrolytic dermatitis metabolic epidermal necrolysis, necrolytic migratory erythema) scaling paraneoplastic syndrome usually associated with liver and pancreatic disease
Histopathology	Microscopic examination of tissue sections by an expert
Hydrolysed diet	Diet containing nutrients of molecular weight lower than allergens used for food elimination diet, but most can be fed long term for treatment as well
Hypersensitivity	Upgraded immune response to harmless or less harmful foreign proteins
Hyperthyroidism	Disease caused by overproduction of thyroxine, usually caused by adenoma or adenocarcinoma of the thyroid gland
IDAT	Intradermal allergy testing
Idiopathic pruritus	Chronic pruritus in the dog or cat where the underlying cause cannot be identified by a thorough diagnostic workup
IgE	Reaginic antibody associated with atopic dermatitis in cats and dogs
IgE serology	Identification of antigen specific IgE (reaginic) antibody from a blood sample for diagnostic purposes in atopic dermatitis
IgG	Antibody group more generally associated with inflammatory reactions
IgG serology	Identification of antigen specific IgG antibody from a blood sample for diagnostic purposes, for example, <i>Sarcoptes</i>
Immune defect	Lack of specific part of the immune system, usually congenital, often inherited
Immune-mediated disease	Disease caused by up- or downregulation of the immune system, or abnormal response to antigens
Immunocompetence	Normally functioning immune system
Immunosuppression	Generalised reduction in function of immune system, usually due to illness or drug therapy
Impression smear	Cells, organisms and debris harvested by pressing a microscope slide onto the surface of a lesion. Usually stained for examination under high power microscope
Interdigital fistulae	Draining tracks of the tissues between the toes caused by deep pyoderma and furunculosis
Intertriginous areas	Areas of skin which rub together, sometimes resulting in maceration and secondary disease
Intertrigo	Inflammation/infection between skin folds
Juvenile cellulitis	(Puppy strangles) Immune-mediated pustular disease of puppies affecting the face usually accompanied by lymphadenopathy and systemic sig
Keratinisation defect	Defects of epidermal development usually causing greasiness and/or scaling
Leishmaniosis	Zoonotic skin and systemic disease, prevalent in some Mediterranean countries caused by <i>Leishmania</i> spp.

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**Table 1.1** (Continued)

Term	Definition
Lentigo simplex	Normally occurring black pigment spots seen on the lips and eyelids of ginger cats
Lichenification	Thickening and texturing of the skin surface due to inflammatory change
Luminal folliculitis	Inflammation centred on the inside of the hair follicle, usually secondary to an underlying cause
Lupoid onychodystrophy	Persistent multiple nail and nail bed abnormality showing a specific reaction pattern on histopathology consistent with immune-mediated disease
Maceration	Damage to superficial tissues caused by dampness and skin folding
Macule	Discrete area of colour change not associated with skin thickening
Mass	Raised lump in the skin of any size
Metabolic epidermal necrolysis	(Superficial necrolytic dermatitis hepatocutaneous syndrome, necrolytic migratory erythema), scaling paraneoplastic syndrome usually associated with liver and pancreatic disease
Mural folliculitis	Inflammation centred on the wall of the follicle, usually a primary event, often immune mediated
Muzzle	Area of the face around the nose and mouth
Myiasis	Fly strike. Blowflies lay eggs on wounds or macerated tissue. Hatched maggots then destroy further tissue
Myxomatosis	Systemic viral infection of rabbits, usually with mucocutaneous lesions, usually fatal
Necrolytic migratory erythema	(Superficial necrolytic dermatitis hepatocutaneous syndrome, metabolic epidermal necrosis), scaling paraneoplastic syndrome usually associated with liver and pancreatic disease
Nodule	Raised lump in the skin
Onychodystrophy	Disturbance in normal nail production
Papule	1–2 mm diameter discrete inflammatory lesion
Paraneoplastic syndromes	Diseases caused by primary neoplasms, with clinical signs frequently in organs distant from the site of the primary neoplasm
Paronychia	Nail bed infection
Pattern alopecia	Discrete areas of hairloss seen in particular breeds with minimal or no other skin lesions
Pemphigus	Group of immune-mediated skin diseases characterised by separation of the epidermis at different levels
Pemphigus foliaceus	Most common of the pemphigus group of immune-mediated diseases, originally considered to be autoimmune, but external trigger factors increasingly identified
Perianal adenoma	Benign tumour of the perianal glands, more common in males
Pituitary dwarfism	Congenital pituitary deficiency rarely seen in Yorkshire terriers, German shepherd dogs and others, causing persistence of puppy coat, among other signs
Plaque	Raised plate like lump in the skin
Plasma cell pododermatitis	Immune-mediated disease of the footpads of cats, usually with multiple involvement, resulting in swelling and ulceration

Pleomorphism	Variability of morphology of the cells of a single tissue type, can be indicator of malignancy
Pododemodicosis	Demodicosis of the feet alone or as part of generalised disease, often more challenging to treat
Pododermatitis	Inflammation of the feet
Pruritic threshold	Level of inflammation above which pruritus occurs, may be reached by single inflammatory diseases or combined additive effect of two or more
Pruritus	Itch
Psychogenic alopecia	Controversial diagnosis of elimination, where stress is thought to result in overgrooming and hairloss
Puppy strangles	(Juvenile cellulitis) Immune-mediated pustular disease of puppies affecting the face usually accompanied by lymphadenopathy and systemic signs
Pustule	Vesicle containing inflammatory cells with or without bacteria
Pyoderma	Bacterial skin infection
Pyotraumatic dermatitis	Bacterial infection secondary to physical damage to the skin
Recurrent flank alopecia	Benign alopecia, part of adrenal sex hormone imbalance syndrome, frequently seen in boxers, but occurs in other breeds
Sebaceous adenitis	Immune-mediated scaling disorder, resulting in destruction of hair follicles and associated glands, with strong breed predisposition
Seborrhoea	Old term for keratinisation defect (defect of epidermis), also used to describe the clinical sign of greasiness and scaliness
Skin biopsy	A full skin thickness sample harvested so as to preserve all surface, superficial and deep skin structures for examination by a dermatohistopathologist
Skin scrapes	Examination for superficial and deep living ectoparasites using samples harvested by scraping with a scalpel blade and microscopy (see Chapter 3.3.3)
Superficial necrolytic dermatitis	(Hepatocutaneous syndrome, metabolic epidermal necrosis, necrolytic migratory erythema), scaling paraneoplastic syndrome usually associated with liver and pancreatic disease
Superficial pyoderma	Bacterial infection restricted to the epidermis and hair follicles
Surface pyoderma	Bacterial infection restricted to the superficial layers of the epidermis
Systemic lupus erythematosus	Multisystemic immune-mediated disease, skin lesions varied and frequently non-diagnostic
Tape strips	Examination for surface living ectoparasites and microbes sticky tape applied to the skin surface (see Chapter 3.3.2)
Urticaria	Hives, red raised itchy lumps
Vasculitis	Inflammation of the blood vessels resulting in generalised inflammatory reaction which can be caused by drugs or infection
Vitiligo	Discrete patches of loss of pigmentation immune-mediated and possibly other causal factors
Washout period	Length of time for which a drug should be withdrawn before testing or assessing a response to treatment
Woods Lamp	Ultraviolet lamp of specific wavelength used as an aid in the diagnosis of <i>Microsporum</i> spp. of dermatophytosis (Figure 3.7)

**Table 1.2** Histopathological terms

Acanthocytes	Keratinocytes which have become detached from their neighbours, usually in groups often found in immune-mediated disease, have more rounded appearance
Acantholysis	Loss of adhesion of cells, resulting in rounded cells (acanthocytes) clumping in bullae
Acanthosis nigricans	Rare pigmental disorder, usually of dachshunds
Adnexa	The structures associated with the hair follicle
Adnexal glands	Sebaceous glands associated with the hair follicles
Anagen effluvium	Loss of hair, the majority of which is in the anagen phase of growth
Anaplasia	Loss of differentiation of a cell type or tissue
Apoptosis	Cell death programmed by intrinsic or extrinsic factors (viruses, immune system, etc.), can be a primary event
Atrophy	Decrease in thickness of non-cornified epidermis due to reduced number of cells
Ballooning degeneration	Intracellular oedema, common non-specific inflammatory change
Calcinosis circumscripta	Calcium deposition in the skin due to localised disturbances in calcium metabolism
Calcinosis cutis	Calcium deposition in the skin probably due to raised mitochondrial calcium phosphate levels most commonly seen in hyperadrenocorticism
Catagenisation	'Catagen arrest'. Seen with endocrine disease and post-clipping alopecia. Follicle development stops in catagen
Cell poor interface dermatitis	Seen in specific dermatoses such as drug eruption, lupus erythematosus and toxic epidermal necrolysis
Clefts	Common artefact but also caused by acantholysis or degeneration of basal cell, occurring in inflammatory disease
Collagen atrophy	Thin fibrils with reduced fibroblasts as occurs in endocrine disease
Collagen hyalinisation	Loss of structure of collagen in the skin
Collagenolysis	Complete loss of structure of collagen in the skin
Cutaneous amyloidosis	Deposition of amyloid in the skin usually associated with more generalised amyloidosis, especially in the Sharpei
Dyskeratosis	Abnormal keratinisation (production of cornified epithelium)
Dysplasia	Abnormal or incomplete development of a tissue
Eosinophilic granuloma complex	Usually not true granulomata but raised chronic fibroplastic, sometimes eosinophilic reactions of the dermis.
Exocytosis	Migration of inflammatory cells through the epidermis, common non-diagnostic feature of inflammation
Fibroplasia	Increased amount of fibrous tissue, usually due to inflammatory skin disease
Fibrosis	Progression from fibroplasia with increased amount of fibrous tissue in the skin, little or no inflammation present but usually the result of chronic inflammation
Flame figure	Collagen surrounded by eosinophilic material indicating collagen degeneration as in eosinophilic granuloma complex and insect bites, etc.

Flame follicles	Tricholemmal keratinisation, seen in endocrine and developmental disorders
Follicular dysplasia	Incomplete or malformed hair follicles
Follicular hypertrophy	Occurs in chronic inflammation
Follicular plugging	Plugging of the hair follicle opening with keratin, common in many diseases, characteristic of some endocrine disorders
Folliculitis	Inflammation of the hair follicle, many different causes, often described by histopathologist
Furunculosis	Foreign body reaction to keratin and hair follicle components within the dermis, frequent sequel to deep pyoderma
Granuloma	Mixed and complex diffuse or nodular inflammatory reaction
Haemangiectasia	Dilation of the dermal blood vessels
Hamartoma	Mass which is a proliferation of normal or embryonic cells
Hydropic degeneration	Intracellular oedema, common non-specific inflammatory change
Hyperkeratosis	Increased thickness of cornified epithelium, found with hyperplastic epidermis in inflammatory skin conditions
Hyperpigmentation	Increased melanin deposition in the epidermis, may be primary, but common secondary to chronic inflammation
Hyperplasia	Increased thickness of non-cornified epidermis due to increased number of cells
Hypokeratosis	Reduced thickness of cornified epithelium
Hypopigmentation	Decreased melanin deposition in the epidermis
Hypoplasia	Decreased thickness of non-cornified epidermis due to reduced number of cells
Impetigo	Pustules affecting the glabrous (sparsely haired) skin of young dogs, follicles not involved
Interface dermatitis	Inflammation of the dermo-epidermal junction
Interstitial	Scattered throughout the epidermis/dermis
Interstitial dermatitis	Inflammatory cell infiltration between collagen bundles seen in a number of hypersensitivity and ectoparasite reactions
Karyolysis	Disappearance of nucleus
Karyorrhexis	Nuclear fragmentation
Keratinocyte	The living structural cell of the epidermis
Lentigo	Macule of hyperpigmentation, for example, acquired lentigo simplex of the eyelid and lips of the ginger cat
Lichenoid	Linear reaction running along or parallel to the basement membrane, usually inflammatory seen in a number of immune-mediated and other diseases
Lichenoid interface dermatitis	More 'active' inflammatory reaction of the dermo-epidermal junction seen in drug eruptions and a number of immune-mediated diseases
Luminal folliculitis	Inflammation directed at the lumen of the hair follicle
Lymphangectasia	Dilation of the dermal lymph vessels
Metaplasia	Development of cells of an abnormal type for the tissue in which they are found
Microabscess and pustules	Cavities filled with fluid and cells, the type being indicative of a diagnosis or underlying cause

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**Table 1.2** (Continued)

Mucinosis	Deposition of mucin in the dermis, normal in the Sharpei, seen in many inflammatory and other dermatoses including hypothyroidism
Mural folliculitis	Inflammation directed at the dermis and epidermis of the hair follicle
Necrolysis	Separation of tissue due to cell death
Necrosis	Changes seen in the cell after death
Nests	Discrete groups of cells in the dermis or epidermis, for example, lymphocytes
Nevus	Developmental defect in the skin
Orthokeratotic hyperkeratosis	Thickening of the stratum corneum with normal morphology
Panniculitis	Inflammation of the subcutaneous fat
Pansteatitis	Alteration to subcutaneous and abdominal fat due to vitamin E and essential fatty acid imbalance
Papillomatosis	Projection of dermal papillae above the skin surface, resulting in roughening of the surface, seen in inflammatory and neoplastic skin conditions
Parakeratotic hyperkeratosis	Thickening of the stratum corneum with nucleation of keratinocytes persisting, characteristic of but not diagnostic for zinc responsive dermatosis
Perivascular dermatitis	Inflammation centred on the dermal blood vessels, non-specific finding in hypersensitivity dermatitis
Pigmentary incontinence	Melanin granules free within the dermis, usually due to damage to the basement membrane zone
Pyknosis	Shrinking of nucleus
Pyogranuloma	Granuloma (mixed and complex diffuse or nodular inflammatory reaction) containing large numbers of neutrophils, for example, furunculosis
Sclerosis	End stage of fibrosis, with scar formation
Spongiosis	Intercellular oedema, common non-specific inflammatory change
Subcorneal pustule	Pustule either sterile or bacterial lying deep to the stratum corneum, occurs in a number of inflammatory and immune-mediated conditions
Subepidermal vacuolar alteration	Localised areas of separation at or below the basement membrane, occur in immune-mediated disease but common artefact
Telangiectasia	Dilation of the dermal blood vessels
Telogen effluvium	Loss of hair which has been arrested in the telogen phase due to stress, endocrine disease, etc.
Telogenisation	High proportion of hair follicles in telogen due to stress, endocrine disease, etc.
Tricholemmal keratinisation	'Flame follicles' seen in endocrine and developmental disorders
Vacuolar degeneration	Intracellular oedema, common non-specific inflammatory change
Vasculitis	Presence of inflammatory cells in and around the blood vessels, often caused by drug reactions and infection
Vesicles and bullae	Cavities filled with fluid but few cells