

# Skin Disease

➤ **The major functions of the skin are:**

- 1) To maintain a normal body temperature
- 2) To maintain a normal fluid and electrolyte balance within the animal.
- 3) To act as a sensory organ perceiving those features of the environment which are important to the subject's survival.

**Primary and secondary skin disease (Lesion):**

- Diseases of the skin may be **primary or secondary in origin.**

**In primary skin disease** the lesions are restricted initially to the skin although they may subsequently spread from the skin to involve other organs.

On the other hand, cutaneous lesions may be **secondary to disease originating in other organs.**

➤ **Differentiation between primary and secondary skin diseases should be attempted by :**

-**seeking evidence that organs other than the skin are affected.** If there is no such evidence produced during a complete clinical examination of the patient, it is reasonable to **assume that the disease is primary.**

Name of lesion	Nature of lesion	lesion Relation to skin
Scales	Dry, flaky exfoliation	On surface only, no penetration Of skin
Excoriations	traumatic abrasions and	Penetration below surface

<b>Fissures</b>	<b>Deep cracks</b>	<b>Penetrate into subcutis</b>
<b>Pustule</b>	<b>Pus-filled blister, 1 -5 mm</b>	<b>Above, superficial</b>
<b>Early, moist gangrene</b>	<b>Grey-black, cold, oozing</b>	<b>Above skin</b>
<b>Keratosis</b>	<b>Overgrowth of dry, horny, keratinized epithelium</b>	<b>Above skin</b>
<b>Nodules, nodes</b>	<b>Swollen, inflamed, necrotic, up to 1 cm diameter</b>	<b>Above surface, all layers</b>
<b>Hyperkeratosis</b>	<b>Excessive overgrowth of keratinized, epithelium-l</b>	<b>Above skin</b>
<b>Para keratosis</b>	<b>Adherent to skin</b>	<b>Above skin</b>
<b>Discrete lesions Vesicle, bleb, bulla, blister</b>	<b>Fluid (serum or Lymph)-filled, up to 1 -2 cm diameter</b>	
<b>Eczema</b>	<b>Erythematous, itching der</b>	<b>Superficial layer of epidermis affected In epidermis or dermis</b>
<b>Wheal</b>	<b>Erythematous, edematous, transient</b>	<b>Above, all layers affected</b>

Papules (pimples)

Above surface, all layers af

Above surface, all layers affected

- **Pruritus or itching:** is the sensation that gives rise to scratching Relation to skin surface.
- **Hyperesthesia** :is increased sensitivity to normal stimuli .
- All sensations that give rise to rubbing or scratching are therefore included
- with pruritus, more properly defined as scratching.

### Pruritus can arise from peripheral or central stimulation.

When it is **peripheral in origin** it is a **primary cutaneous sensation** like heat, cold, pain and touch; it differs from pain because it is purely epidermal.

- Thus **itching does not occur in the center of deep ulcerations nor in very superficial lesions, such as those of ringworm, where only the hair fibers and keratinized epithelium are involved.**
- Itching can be elicited over the entire skin surface but is most severe at the mucocutaneous junctions.
- **Common causes of Itching include the following.:**
- Cattle : Sarcoptic and chorioptic mange, Nervous acetonemia, Lice infestation.

-Sheep :Lice, mange, blowfly and itch mite infestations Scrapie.

- Horses : Chorioptic mange on the legs, Queensland (sweet) itch along the dorsum of the body, Lice infestation and Perianal pruritus due to *Oxyuris equi* infestation.

- All species The early stages of photosensitive dermatitis,

- Urticarial wheals in an allergic reaction,

### Itching of central origin derives from the scratch center in the medulla.

- It may have a **structural basis**, as in scrapie and pseudorabies,
- or it may be **functional in origin**, as in the nervous form of acetonemia.
- The only lesions observed are those of a **traumatic dermatitis** with removal of the

- ▶ superficial layers to a variable depth, breakage or removal of the hairs and a distribution of lesions in places where the animal can bite or rub easily

### Abnormalities of wool and hair fibers

- ▶ Deficiency of hair or wool in comparison to the normal pilosity of the skin area is **alopecia or hypotrichosis**.
- ▶ **Hirsutism**, abnormal hairiness, manifested by a long, shaggy, usually curly, coat is most common in aged ponies with adenomas of the pituitary gland.
- ▶ **The character of the fiber may also vary with variations in the internal environment.** For example, in **copper deficiency the crimp of fine wool fibers is lost and the wool becomes straight and 'steely'**.
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### clinical signs and special examination

-a general clinical examination is followed by a special examination of the skin and must include inspection and, in most cases, palpation.

-additional information can be obtained by **taking swabs for bacteriological examinations, scrapings for examination for dermatophytes and metazoan parasites,**

**-and biopsy for histopathological examination.**

**- biopsy material should include abnormal, marginal, and normal skin.**

### artifacts are common in biopsy specimens,

**-including nonrepresentative sampling,**

- **crushing the specimen by forceps or hemostat, and**
- **inadequate fixation.**
- **wood's lamp finds a special use in the examination of the skin for dermatophytes.**

- **descriptions of lesions should include size, depth to which they penetrate, distribution on the body and size of the area covered.**

### **abnormalities of sebaceous and sweat secretion,**

- changes in the hair or wool coat and
- alterations in color of the skin should be noted,
- as should the presence or absence of pain.

### **secretion abnormalities of skin glands**

- **the activity of the sweat glands is controlled by the sympathetic nervous system and is for the most part a reflection of body temperature.**
- **excitement and pain** may cause sweating due to **cerebral cortical activity.**
- a **generalized form of hyperhidrosis**, apparently inherited, has been recorded in shorthorn calves.
  
- **local areas of increased or decreased sweating** may arise from peripheral nerve lesions or diseases of the skin sweat gland ducts.
- **a generalized anhidrosis** is recorded in horses and occasionally in cattle.
- **excess secretion of sebum** by sebaceous glands causes oiliness of the skin or seborrhea but its pathogenesis is poorly understood.