

## Fundamentals of Dermatology

### Describing Rashes and Lesions

History remains ESSENTIAL to establish diagnosis – duration, treatments, prior history of skin conditions, drug use, systemic illness, etc., etc. Historical characteristics of lesions and rashes are also key elements of the description. Painful vs. painless? Pruritic? Burning sensation?

Key descriptive elements – 1- **definition** and **morphology** of the lesion, 2- **location** and the **extent** of the disease.

#### **DEFINITIONS:**

- Atrophy:** Thinning of the epidermis and/or dermis causing a shiny appearance or fine wrinkling and/or depression of the skin (common causes: steroids, sudden weight gain, “stretch marks”)
- Bulla:** Circumscribed superficial collection of fluid below or within the epidermis > 5mm (if <5mm → vesicle), may be formed by the coalescence of vesicles (*blister*)
- Burrow:** A linear, “threadlike” elevation of the skin, typically a few millimeters long. (*scabies*)
- Comedo:** A plugged sebaceous follicle, such as closed (whitehead) & open comedones (blackhead) in acne
- Crust:** Dried residue of serum, blood or pus (*scab*)
- Cyst:** A circumscribed, usually slightly compressible, round, walled lesion, below the epidermis, may be filled with fluid or semi-solid material (*sebaceous cyst, cystic acne*)
- Dermatitis:** nonspecific term for inflammation of the skin (many possible causes); may be a specific condition, e.g. atopic dermatitis
- Eczema:** a generic term for acute or chronic inflammatory conditions of the skin. Typically appears erythematous, edematous, papular, vesicular, and crusted. When chronic it leads to lichenification and sometimes hyperpigmentation. Usually itches and burns. May be specific condition; e.g., “nummular eczema”, or nonspecific term “eczematous eruption” or “hand eczema”
- Erosion:** Loss of portion of the epidermis, superficial and non-scarring (*area after a vesicle or bulla ruptures*); also see ulcer
- Eruption:** a “breaking out” of the skin or rapidly developing dermatosis
- Erythematous:** a 5 syllable word for “red”
- Exanthem:** a skin eruption typically due to a viral (or some bacterial) systemic disease
- Excoriation:** similar to erosion, but from self-inflicted removal of some or all of the epidermis (*scratch*)
- Fissure:** Vertical “cut” extending into the dermis. (*anal fissure, “cracked skin” from T. pedis*)
- Hive:** (see wheal)
- Hyperkeratotic:** Localized thickening of the epidermis (stratum corneum layer), (*wart, callous*)
- Keloid:** Abnormally hypertrophied scar
- Lichenification:** Leathery induration and thickening of the skin with hyperkeratosis due to long standing scratching or irritation, marked prominence of normal skin lines (*many chronic dermatoses*)
- Macule:** Flat, nonpalpable lesion with color change (hyper- or hypopigmented, erythematous) less than 5-10mm (larger than 5-10mm → patch) (*freckles, flat nevi*)
- Morphology:** Shape of the primary lesion, e.g. linear, round.
- Nodule:** A solid lesion (5-20mm) with an appreciable deep (dermal and/or subcutaneous) component, (*lipoma, dermatofibroma*)

**Papule:** Raised lesion less than 5-10 mm (larger than 10mm → plaque or nodule) (*wart, actinic keratosis*)

**Patch:** a larger flat, nonpalpable lesion – or macule that is > 1cm, (some will still call these macules)

**Petechiae:** small (< 5mm) hemorrhagic (red-purple) non-blanchable discolorations (>5mm → purpura)  
(*meningococemia, Rocky Mountain Spotted Fever, DIC, viral exanthem*)

**Plaque:** A flat topped, elevated area of the skin larger than 5-10mm, may be formed from coalescence of papules, (*psoriasis, seborrheic keratosis*)

**Primary skin lesions:** the initial recognizable skin lesion or basic skin changes (macule, papule, patch, plaque, vesicle, bulla, nodule, tumor, pustule, wheal, cyst, telangiectasia)

**Purpura:** larger (>5mm) hemorrhagic (red-purple) non-blanchable discolorations (<5mm → petechiae)  
(*vasculitis, Henoch Schonlein purpura*)

**Pustule:** Circumscribed lesion filled with purulent material (*acne, folliculitis*)

**Scale:** Surface alteration resulting in a “flaky” surface, due to abnormal proliferation of the outermost epidermal layer, the stratum corneum, may be fine, or thick and greasy, or loose or adherent.  
(*seborrheic dermatitis, psoriasis*)

**Secondary skin lesions:** Changes which occur as a result of the natural development of, or due to external manipulation of the primary lesion. (*sometimes the secondary changes make it impossible to see and describe the primary lesion*) (scale, lichenification, keloid, excoriation, fissure, erosion, ulcer, atrophy, crust, hyperkeratosis)

**Telangiectasia:** dilated superficial capillary/venule; may be linear, spiderlike, or matlike. (*rosacea, BCC*)

**Tumor:** A large solid lesion (> about 2 cm), with deeper dermal or subcutaneous thickness (a large nodule)

**Ulcer:** Loss of skin extending into the dermis, scarring (any loss that penetrates the dermal-epidermal junction scars), see also erosion

**Urticarial:** A well defined, localized area of edema- a wheal, often intensely pruritic.

**Vesicle:** Well circumscribed fluid-filled lesion up to 5-10mm. (>10mm → bulla) (*herpes, varicella*)

**Wheal or hive:** A localized edematous plaque-like lesion, somewhat irregular and transient.

**Remember:**

Changes with size

Macules → patches

Papules → plaques (or nodules)

Vesicles → bullae

Changes with depth

Erosion → ulcer

“Maculo-papular” should be about 50-50 of both

## Morphologic Characteristics

### Shape/arrangement

Round/discoid	coin shaped, no central clearing	<i>nummular eczema</i>
Oval	ovoid	<i>pityriasis rosea</i>
Annular	round, with active margin and central clearing	<i>tinea corporis</i>
Reticular	net-like or lacy	<i>lichen planus</i>
Linear	in a line	<i>contact dermatitis</i>
Iris/target	purple papule in the center of pink macule	<i>erythema multiforme</i>
Serpiginous	snakelike or wavy line track	<i>cutaneous larval migrans</i>
Polycyclic	interlocking or coalesced circles	<i>psoriasis</i>
Morbilliform	measles-like; maculo-papular lesions with confluence on the face and body	<i>roseola, mononucleosis</i>

### Border/Margin

Discrete (psoriasis) or indistinct (many types of eczema) or irregular (malignant melanoma)

### Feel

Indurated (SCC), hard (dermatofibroma), soft (skin tag), sclerotic (venous stasis ulcers)

### Color changes

Erythema - pink (genital warts, roseola), salmon-colored (pityriasis rosea), brawny (candidiasis)

Violaceous – Kaposi's sarcoma, lichen planus

Yellow – xanthoma, psoriatic nails

Tan-brown – most benign nevi

Black – malignant melanoma

Pearly – basal cell carcinoma

Honey-colored crusts – impetigo

### Other changes/aspects

Desquamation – dyshidrotic eczema, toxic shock syndrome

Hyperkeratotic – (hypertrophic stratum corneum) AK's, calluses, warts

Central umbilication or punctation – molluscum contagiosum, BCC

Verrucous – wartlike, seborrheic keratosis and warts

Satellite lesions – candidiasis, impetigo

Macerated – chronically wet – interdigital tinea pedis

Weeping/oozing – acutely inflamed contact dermatitis

Guttate – drop-like (guttate psoriasis)

## **Location and distribution**

Localized, regional, or generalized

Dermatomal – herpes zoster

Sun-exposed areas – sunburn, SLE, porphyria, photosensitivity to drugs

Clothing covered area – contact dermatitis, miliaria

Flexural areas – atopic dermatitis, intertrigo, candidiasis, tinea cruris

Extensor areas – psoriasis, atopic dermatitis in infants, eruptive xanthomas

Truncal – pityriasis rosea, drug eruptions

*(Description terminology is from Mosby's Guide to Physical Examination, Bates Guide to Physical Exam and History Taking and Dermatology texts listed below)*

Dermatology textbooks – *(I am frequently asked which dermatology texts I recommend and use, while there are many excellent texts out there, these three are my personal favorites and are used often in my office.)*

- Preferred texts –
  - Habif – Clinical Dermatology – 5<sup>th</sup> Edition – 2010. Also gives access to great website - Expert Consult by Elsevier. Cost about \$175
  - Klaus – Fitzpatrick's Color Atlas and Synopsis of Clinical Dermatology 6<sup>th</sup> Ed - 2005 – About \$80

### Websites

- EXCELLENT Tutorial for describing skin conditions – Interactive Dermatology Tutorial:  
[http://www.logicalimages.com/morphology/morphology3\\_content.html](http://www.logicalimages.com/morphology/morphology3_content.html)

If your charts do not routinely include words like macules, papules, plaques, nodules, ulcers, petechiae, etc. – then review this tonight to avoid confusion over next few days.

- Dermatologic Image Database from University of Iowa -  
<http://www.healthcare.uiowa.edu/dermatology/DermImag.htm>
- The Electronic Textbook of Dermatology - <http://www.telemedicine.org/stamfor1.htm>
- Johns Hopkins Dermatology Image Atlas – [www.dermatlas.com](http://www.dermatlas.com)
- Dermatology Information System – comprehensive online derm info - [www.dermis.net](http://www.dermis.net)