Common Paediatric Skin Conditions

&

Birthmarks

**INtroduction**

Learning to recognize common skin conditions is a skill that is extremely valuable in all areas of medicine. In paediatrics in particular it is important to have the ability to identify skin lesions, as such knowledge will enable you to both recognize potentially significant systemic diseases, such as meningococcemia or chicken pox, and reassure concerned parents. The skin serves as a critical barrier to infection and dehydration and as such it is important to keep in mind that disease or impairment of the skin’s normal function can lead to significant morbidity and mortality, particularly in infants as they are more vulnerable to heat loss, dehydration and infection1. Further, as skin disease is so very common, with approximately 1/3 of visits to family practitioners being for dermatologic concerns, you will certainly encounter skin disease during your training and career, regardless of what specialty you pursue1,2.

This module aims to give you a quick and effective guide to recognizing and dealing with some of the more common paediatric skin conditions and birthmarks that you are likely to encounter. However, this is by no means a complete list. If there is any uncertainty regarding the diagnosis of a skin lesion you are encouraged to consult a specialist.

To review the approach to identification and description of skin lesions please refer to the Approach to Skin Lesions module on this site.

**10 common paediatric Skin Conditions**

1. **Atopic Dermatitis (Eczema)**

**Definition**

Atopic dermatitis, or eczema, is a common inflammatory condition of the skin characterized by intense itching (pruritis), hence it is commonly referred to as “the itch that rashes2, 3.” The condition is associated with atopy, which refers to a predisposition toward developing hypersensitivity reactions such eczema, asthma and allergic rhinitis. Atopic dermatitis has a strong familial association and is very common in kids, affecting 5-20% of children worldwide. In most cases onset of the condition occurs before five years of age2, 4. The severity of the condition may wax and wane with most patients having three or more flare ups annually5.

**Clinical Presentation**

Pruritis is typically the most outstanding clinical feature and secondary lesions due to chronic rubbing and scratching are very common2, 4. The appearance of lesions can be varied and may present with any of the following:

* + xerosis (dry, scaly skin)
  + ill-defined erythema
  + small coalescing edematous papules or vesicles
  + lichenification and/or excoriations (secondary to relentless scratching)
  + crusting (if secondarily infected)

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Three age-related stages of atopic dermatitis have been identified2, 4:

**Infantile (2 months – 2 years)**

* Often pruritic, red, scaly or crusted lesions
* Facial and extensor distribution predominates, especially cheeks and scalp
* Entire body may be affected, however diaper area is commonly spared

**Childhood (2-12 years)**

* Greater lichenification and excoriations
* Often has a flexural distribution – antecubital and popliteal fossae, wrists and ankles

**Adult (>12 years)**

* Typically lichenified and more localized (primarily to the hands)
* Flexural areas commonly involved
* The condition generally improves with age and may remit by early adulthood

**Pathogenesis**

Though the specific cause of atopic dermatitis is unknown two major theories exist:

1. The leading theory suggests that atopic dermatitis may result from impairment of the skins function as a protective barrier due to intrinsic structural or functional abnormalities of the skin. Thus the disease evolves as an outside-in process4.
2. The more traditional theory revolves around the idea of immune dysfunction in which immune cells modulate an inflammatory response to environmental factors. More recently, the association of allergies and asthma in the pathogenesis of atopic dermatitis has been called into question4.

**Diagnosis4**

Atopic dermatitis is a clinical diagnosis. Diagnosis requires:

1. Evidence of pruritis (eg. scratching or rubbing reported by parent)
2. Plus three or more of the following:
   * Involvement of skin creases (antecubital or popliteal fossae, ankles, neck, eyes)
   * Dry skin within the past year
   * Visible involvement of flexural surfaces (cheeks, forehead, outer extremities)
   * Symptoms beginning in a child before two years age (this criterion not used for children under four).

If diagnosis is uncertain, referral to a specialist is recommended.

**Treatment6**

* Avoidance of irritating factors
* Emollients and moisturizers to re-establish the cutaneous permeability barrier
* Topical glucocorticoids (creams or ointments)
* Topical immunomodulators (eg. Tacrolimus)
* Antibiotics if staphylococcus infection
* Oral antihistamines for sedation & control of itching

1. **Seborrheic Dermatitis (Cradle cap)7**



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* Greasy yellow scale on erythematous base
* Common on scalp, eyebrows, ears, diaper area & in skin folds
* Affected regions may also develop fissures, weeping & maceration
* May persist until 1 year of age
* Specific cause unknown
* Requires no treatment, however, anti-seborrheic shampoos or topical steroids may speed resolution

1. **Transient Neonatal Pustular Melanosis5, 8**

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* Occurs in 4% of infants, more common in dark skinned infants
* Typically present at birth
* 2-5mm pustules with hyperpigmented, non-erythematous base
* Over time develops central crust & leaves hyperpigmented macules with collarette of white scale
* Cause unknown
* Benign & self-limited
* Pustular lesions resolve within 24-48 hours, hyperpigmented macules fade over weeks/months

1. **Erythema Toxicum Neonatorum5, 9**

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* Most common rash in infants, seen in up to 50% of newborns
* Begins as blotchy macular erythema
* Progresses to pustular/papular rash over trunk, face & extremities
* Usually appears on 2nd/3rd day of life, can appear as late as 2-3 weeks
* Distinguished from infection by lack of tenderness, warmth, or induration
* Cause unknown
* Self-resolving, typically by 5-7 days after appearance, usually by 2 weeks age
* Requires no treatment

1. **Miliaria/heat rash/prickly heat8**

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* 1-3mm erythematous papules (miliaria rubra), pustules (miliaria pustulosa) or crystal-clear vesicles resembling water droplets (miliaria crystallina)
* Appear on face, scalp and trunk,
* Due to obstruction of eccrine sweat ducts with leakage of sweat into dermis/epidermis
* Occur secondary to heat (eg. warm climates) in skin areas with high heat generation or covered by clothing
* Common, particularly in infants and children because of underdeveloped sweat glands
* Self-resolving, can be hastened by removal of wraps/clothing

1. **Milia5, 10**

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* Common (50% of infants)
* Multiple 1-3mm, white-yellow papules on nose, chin & cheeks
* Keratin filled epithelial cysts
* Usually appear in 1st month of life & may persist several months, but may occur at any age
* Benign, self-resolving, require no treatment
* Can be excised and contents expressed

1. **Neonatal Acne5, 7, 9**

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* Open & closed comedones (papules/pustules), on face and upper trunk
* Thought to be due to androgens (maternal & infant)
* Common (20% of infants),
* Often present at birth or develops in second to third week of life
* Self-resolving, usually by three months age, require no treatment

1. **Impetigo7,10**

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* Contagious bacterial infection of epidermis
* Can affect any skin region
* Transmitted by direct contact with infected persons or fomites
* Primary impetigo: more common in children, infection via minor breaks in skin
* Secondary impetigo: any age, secondary infection of trauma/wounds
* Clinical diagnosis, confirmed by gram stain or culture of crust or fluid from bullae
* Clinical features:

Bullous impetigo

* + Always caused by *S. aureus*,
  + Can affect intact skin
  + Vesicles and flaccid bullae (large vesicles) contain clear yellow or slightly turbid fluid +/- surrounding erythema
  + Common in neonates and children <5 years
  + Systemic symptoms common

Nonbullous impetigo

* + More common than bullous
  + Usually due to *S. aureus* or *S. pyogenes*
  + Typically affects trauma sites
  + Scattered discrete 1-3cm lesions with honey-coloured crust and surrounding erythema
  + Most common around mouth/nose
  + Patients may have lymphadenopathy
* Local infections treated with topical saline or aluminium acetate, then 2% mupirocin ointment
* If systemic symptoms present, use beta-lactamase resistant antiobiotic eg. Cephalexin
* If impetigo due to MRSA use Clindamycin

1. **Diaper rash**

Please refer to [Diaper Rash: Clinical Considerations and Evaluation](http://learnpediatrics.com/body-systems/neonate/diaper-rash-clinical-considerations-and-evaluation/)

1. **Acne in Teens**

Please refer to [Acne in Teens](http://learnpediatrics.com/body-systems/general-pediatrics/acne-in-teens/)

**Common Birthmarks**

1. **Mongolian spots/Slate-grey nevus of childhood/Dermal melanosis5, 10**

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* Bluish grey patches over buttocks/back/legs
* May look like bruises
* Common in dark skinned infants
* Due to atypical presence of melanocytes within the dermis
* Tend to fade over 1st year of life, can occur in adulthood
* Requires no treatment

1. **Hemangioma of infancy/capillary hemangioma/Strawberry nevi5, 10**

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* Raised pink/red/purple lesion, soft, compressible
* Most common tumour of infancy; up to 10% in caucasians
* Develop in first weeks of life
* Represents clonal expansion of endothelial cells
* Usually grow rapidly from 6 months – 1 year of age, up to 3 inches diam
* Tend to fade/shrink with time, 50% by 5 years, 90% by 9 years, often disappearing completely
* Treatment with steroids/interferon/laser indicated only if multiple, very large or interferes with function

1. **Port-wine stain/Nevus flammeus10**

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* Flat pink/red/purple patches, typically on face, neck, limbs
* Present at birth
* Can be any size, grow proportionately with child
* May thicken or develop bumps
* Social/emotional complications
* Some association with glaucoma & seizures
* Do not resolve, are permanent
* Laser treatment may be an option
* Former USSR head of state Mikhail Gorbachev has a prominent port-wine stain on his forehead

1. **Salmon patch/Angel kiss/Stork bite/nevus flammeus nuchae5, 10**

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* Minor vascular malformations - Macular stains
* Flat, pink capillary hemagioma, often seen on eyelids, forehead & nape of neck
* Occurs in up to 1/3 of all newborns
* Clinical variant of portwine stain
* Facial lesions usually fade over years, neck lesions may persist into adulthood
* Harmless, no treatment required

**Conclusion**

As dermatological conditions are so common in the general population, you will find that familiarity with the common conditions is an invaluable tool in your medical career. This may be particularly so in paediatrics where significant systemic diseases may first become apparent by the clinicians recognition of characteristic skin lesions. When assessing a patient remember that it is important to bear in mind that the skin’s function as a barrier to infection is of paramount importance and as such any break in the skin or mucous membranes must be treated appropriately to avoid infection. This is especially true in infants who are innately more vulnerable.

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