Skin rashes in children

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Abstract
Skin rashes in children require careful history-taking and assessment and examination of the skin. This article reviews rashes in paediatrics, with a step-by-step approach to the classification and identification of the rash.

Introduction
Skin disorders in children necessitate careful observation and thorough assessment of the child’s history. During examination, consider the appearance of the rash and the site and pattern of its development.1

Skin rashes in children are a very common sign and often very difficult to diagnose, as more than one skin disease may be involved. Table I illustrates various criteria involved in successfully diagnosing a rash.2

| Table I: An assessment of dermatological conditions in a paediatric patient 2 |
| Initial assessment of the rash |
| Are there any fluid filled vesicles? |
| Is the rash raised (papular) or flat (macular)? |
| Is the rash red? |
| Is the rash scaly? |
| Is the rash itchy? |
| When did the rash start? |
| Where did the rash start, and how did it spread? |
| History |
| What is the past medical and drug history? |
| Did the patient present with other symptoms (e.g. fever, headache)? |
| Has the patient been exposed to new topical applications (e.g. soap, lotions)? |
| Has the patient ingested any unfamiliar foods? |
| Has the patient had close contact with someone else with the same symptoms? |
| Has the patient travelled recently? |
| General examination |
| If a systemic illness is expected, refer to a medical practitioner for further management. |
| Examination of the skin |
| Examine the whole skin, even if the rash seems localised. Ensure that the patient is comfortable, with a close caregiver nearby. A rash resulting from a topical application will be present in a specific area (e.g. under arms, nappy area). A rash resulting from a systemic cause will be generalised and symmetrical. Systemic illness may also present in the mouth (e.g. syphilis, drug reactions like Stevens-Johnson syndrome). |

Common terminology
The terminology in Table II will be used in the article.

| Table II: Terminology used in dermatological conditions2,3,4 |
| Terminology | Definition |
| Macular rash | A non-palpable rash with colour changes in limited areas |
| Papular rash | A palpable rash with raised, solid lesions and colour changes in limited areas |
| Vesicular rash | Elevated lesions that are filled with clear fluid (blisters) |
| Ulcer | A skin or mucous membrane lesion occurring as a result of the loss of superficial tissue, usually involving an inflammatory processes |
| Plaque | A differentiated area on a flat skin surface area (may also occur on a mucous membrane) |
| Nodule | A circumscribed swelling or an elevated lesion |
| Petechiae | A small red or purple spot that is not elevated, and does not blanche when pressure is applied, usually the result of haemorrhages from tiny blood vessels in the skin |
| Crusts | Hard outer layer of lesions, which may be due to dried serum or pus from ruptured vesicles |
| Blisters | A fluid-filled structure within the epidermis or under the epidermis |

Classification according to clinical presentation
Figures 1, 4, 7 and 9 illustrate a step-wise approach to the classification and identification of skin rashes according to clinical presentation.1,2,3 Selected skin conditions are also discussed.
**Vesiculobullous rashes**

*Impetigo*

Impetigo is a highly contagious bacterial skin disease which can affect any population, but mostly occurs in children two to six years of age (Figure 2a and b). Common causes include infection with *Staphylococcus aureus* and *Streptococcus pyogenes* (impetigo without bullous lesions), either alone or in combination. Impetigo may present as either a bullous or non-bullous rash. Non-bullous lesions are more common and consist of vesicles that later rupture. The contents then dry out to form a gold-coloured crust. The areas mostly affected include the face and limbs. The bullous lesions consist of fluid-filled blisters that rupture less easily. Bullous lesions may occur in the neonatal population. It is important not to open the lesions. Treatment normally involves bathing of the crusts using antiseptics. Topical treatment is used for small localised patches and involves the use of fusidic acid and mupirocin. Seven days of topical treatment may be more effective than a 10-day course of treatment, because the longer treatment course is thought to make contact sensitisation more likely. Extensive disease involvement or topical treatment failure necessitates the administration of oral antibiotics. According to the South African Treatment Guidelines (2008), amoxycillin should be initiated and, if no response is detected, flucloxacillin should be administered for five days. Other guidelines include flucloxacillin as a first-line treatment option.

Younger children should avoid contact with other children until the lesions have crusted over, or at least 24 hours of effective antibiotic treatment have been administered.

**Figure 2a and b:** Impetigo in a child
Staphylococcal scalded skin syndrome

Staphylococcal scalded skin syndrome (SSSS) is characterised by epidermolysis, caused by an exotoxin that is released by S. aureus. SSSS normally occurs in children younger than five years. It initially presents with a superficial, crusted lesion that becomes painful and red within 24 hours. Flaccid blisters develop, with wrinkled skin, and the epidermis peels in large sheets, with normal skin that separates when rubbed (Nikolsky's sign). The infant may also present with fever, chills and malaise within 36-72 hours. The condition should be treated as soon as identified, and precautions should be taken to prevent epidemics in a nursery or pre-school. Appropriate wound care management should be initiated promptly, and this could include the use of polymer hydrogel dressings. Antibiotic therapy should be initiated and may include the use of intravenous cloxacillin or oral flucloxacillin.

Stevens-Johnson syndrome

In children, it is often difficult to distinguish between SSSS and Stevens-Johnson syndrome. However, in children, Stevens-Johnson syndrome is characterised by the involvement of the mucous membranes, which is absent in SSSS. Stevens-Johnson syndrome presents with blisters on the chest area, along with the mucous membrane involvement already mentioned. Conjunctivitis, corneal ulceration and, in severe cases, blindness may occur. The most common aetiology is usually a drug reaction but, in some instances, Mycoplasma spp. have also been identified. Medication associated with Stevens-Johnson syndrome include, but are not limited to, trimethoprim-sulfamethoxazole and the other sulphonamide antibiotics, aminopenicillins, quinolones and the cephalosporins. The causative agent should immediately be stopped, and management includes fluid therapy (including dextrose) and monitoring vital signs. Symptomatic treatment involves appropriate wound management (including the use of emollients) and analgesia. The eyes should be examined regularly. The use of corticosteroids is controversial, and not recommended by the National Department of Health. The use of antibiotics entails treatment with erythromycin intravenously, if the oral route cannot be used, and the choice of drug should be reconsidered once a culture can be obtained.

Varicella (chickenpox)

Chickenpox is characterised by a rash (Figure 3) that is highly contagious and is caused by herpesvirus type III, also called varicella zoster virus. The condition causes a vesicular rash, and usually occurs in children between the ages of one and six years of age. Transmission normally occurs in winter and spring, and the child will initially have flu-like signs and symptoms.

Chickenpox is characterised by:

- **Prodromal phase**: Varicella spreads by either direct contact with the lesions or through droplet spread, and one attack confers permanent immunity. The risk of transmission (i.e. when the condition is most contagious) is highest about two days before the first vesicle appears, and ends when the last vesicle crusts over. The child may present with fever, headache and malaise, and loss of appetite.

- **Rash**: The rash starts as a papule, which then progresses to form a superficial vesicle. An umbilicated vesicle forms (i.e. a vesicle that has collapsed inwards), and this is a characteristic sign of chickenpox. The surface of this vesicle then becomes necrotic. The umbilicated vesicle then forms a crust as the clear fluid dries. All of the various stages of rash formation can occur simultaneously. Secondary bacterial infection (e.g. impetigo) can occur if the vesicle becomes contaminated, sometimes as a result of dirty hands scratching the rash. This whole process can be completed in two weeks; the incubation period is two to three weeks. The mucous membranes may also be involved. The rash mainly involves the upper body and face. The involvement of the scalp, palms and soles is usually characteristic. Chickenpox rash may be severely pruritic.

Management of varicella includes prevention of secondary bacterial infections. Aspirin should not be used in children, as this could lead to Reye's syndrome. Fever should be managed with paracetamol, and calamine lotion can be used for pruritis. Antiviral drugs (e.g. acyclovir) should be considered for immunocompromised patients and patients with varicella-related complications, but should preferably be initiated within 24 hours of the appearance of the rash. Varicella zoster immunoglobulin should be administered for post-exposure prophylaxis in neonates whose mothers develop varicella, either five days before delivery or two days after delivery.

![Figure 3: Severe chickenpox in a three-month-old baby](image)

Pustular rashes

Acne

Acne is very rare in children younger than seven years, and usually involves hyperandrogenism. If encountered, it should be investigated and the patient referred to a specialist.
Acne encountered in the first year of life can be classified as either neonatal acne or infantile acne. Neonatal acne is actually referred to as neonatal cephalic pustulosis or sebaceous miliaria. Follicle or pore colonisation, with either Malassezia sympodialis or M. globosa, takes place. Neonatal acne is usually self-limiting and no treatment is necessary.

Infantile acne presents at three to six months of age, more often in boys than in girls. The infant will have typical acne lesions, like comedones. The patient should be referred if the acne lesions persist for a few weeks, if there is a strong family history, or if there are any other developmental abnormalities. Treatment may include antibiotics.

Prepubertal acne may present as early as eight years of age. It is more common in girls, starts on the central forehead, and may be associated with raised levels of dehydroepiandrosterone (DHEAS). Treatment may involve the use of an antibiotic like a macrolide or tetracycline, the latter only if the patient is aged eight years or older.

Figure 4: Classification and identification of a skin rash (step 2)

Step 2

Are the lesions papular?

Yes

No

Continue to Step 3

Papular rashes

Scabies
Urticaria/serum sickness
Keratosis pilaris
Papular acrodermatitis
Molluscum contagiosum
Plane warts
Streptococcal infection (scarlet fever)
Rubella (German measles)
Measles (rubeola)

Papular rashes

Urticaria

Urticaria is a severely itchy vascular skin disorder characterised by smooth but elevated skin patches (wheels). The mucous membranes may be involved as well. The condition may be acute or chronic. The acute condition may be due to irritants, insect bites or allergens. Chronic urticaria may be idiopathic, autoimmune, drug-induced (e.g. salicylates) or due to a food constituent, and may be accompanied by angioedema. The wheals may appear white, pink or red, due to dermal oedema, are normally transient (present for less than 24 hours), and may be accompanied by burning with extreme itching. Management involves removing or treating the cause and the administration of an antihistamine (e.g. promethazine or hydroxyzine). Topical applications are not recommended, as the condition usually involves the whole body. These treatments are only useful if applied immediately after an insect bite. The administration of adrenaline and systemic corticosteroids is indicated in the event of threatening laryngeal oedema.

Streptococcal infection (scarlet fever)

Group A β-haemolytic streptococci (GABHS) are responsible for a variety of diseases in children, including otitis media, impetigo and scarlet fever. The pathogens are transmitted via droplets or after direct contact, and there is an infectious period of 10-21 days. However, if adequately treated, this may be 24-48 hours. The child may present with a sudden high fever, headache, abdominal pain and vomiting during the prodromal phase. A rash may then appear within two hours, and it is normally described as sandpaper-like, consisting of small papules on an erythematosus background. The rash is normally seen on the face and the upper body, and may be associated with palor around the mouth and a strawberry-red tongue. The tongue may initially be white, with the red colouration becoming apparent on day 4-5. Management of the condition includes penicillin (phenoxymethylpenicillin, or pen V) for 10 days. The child should refrain from close contact with other children or going to school, until receiving effective treatment for at least 24 hours.

Rubella (German measles)

Rubella presents with a fine papular rash that starts behind the ears and spreads over the face to the rest of the upper body. A prodromal phase may present, with fever and mild conjunctivitis, before the rash appears. The disease is transmitted via direct contact and indirectly through droplet spread, faeces or urine. The patient is contagious for five days before onset of the rash, and for seven days thereafter. Management is conservative and involves paracetamol for pain and fever. Very importantly, once the condition has been identified, transmission to particularly pregnant women and women of childbearing age must be prevented.

Measles (rubeola)

Measles has become less frequent due to widespread immunisation. However, outbreaks are still seen from time to time. The condition presents with a prodromal phase, with flu-like symptoms or a severe upper respiratory tract infection with fever, conjunctivitis (Figure 5), dry barking cough, rhinitis and Koplik’s spots (white spots on a bright red inner lining of the buccal mucosa). Three to five days later, a maculopapular
rash appears behind the ears and spreads over the face and body.1,16 The rash may fade or disappear after three days. However, if the fever is still present on the third day, a secondary bacterial infection must be suspected. Complications of secondary bacterial infections may include pneumonia and otitis media.1,16 Transmission occurs through direct contact or via droplet spread.16 The patient is infectious one to two days before the onset of symptoms and four days after the onset of the rash (Figure 6); this may be prolonged if the child is also HIV-positive.1,10,16 The child should not be sent to school for at least five days from the start of the rash.1 Management of the condition includes proper nutrition to decrease the effect of the measles on the child.1,2,6,10,16 Vitamin A may be administered as a single daily dose for two days, and has been shown to reduce complications.1,2,10 Paracetamol may be administered for pain and fever, but antibiotics are not used routinely, only when complications are encountered.1,2,10,16 The prevention of measles is one of the best interventions, and education of all mothers and pregnant women, regarding the importance of immunisation, should be undertaken.2 Measles is a notifiable condition.2,10

Figure 5: Measles in a 10-year-old boy (note the conjunctivitis)

Figure 6: Measles rash

Figure 7: Classification and identification of a skin rash (step 3)

Is the rash red?

Yes

Are the lesions scaly?

Yes

Eczematous rashes
Atopic dermatitis (eczema)

Papulosquamous rashes
(red and scaly)
Seborrhoeic dermatitis
Psoriasis
Tinea corporis
Pityriasis rosea

Purpuric rashes
Enterovirus infection
Septicaemia
Leukaemia
Henoch-Schönlein purpura
Idiopathic thrombocytopenic purpura (ITP)
Vasomotor straining
Child abuse
Trauma

No

Continue to Step 4

No

Examine the rash for signs of blanching

Erythematous rashes
(red and blanching)
Fever and exanthem
Erythema infectiosum
Roseola infantum
Kawasaki disease

Examine the skin for signs of epidermal breakage

Not present

Not present

Present

Present

Not present

No

Yes
Eczematous rashes

**Atopic dermatitis (eczema)**

Atopic dermatitis is a common childhood skin disorder and has a strong genetic link or hereditary tendency.\(^1\),\(^2\),\(^5\),\(^16\) The condition is also associated with an allergic component (atopy), and a large proportion of the children presenting with the disease develop allergic rhinitis or asthma later in childhood.\(^1\),\(^2\),\(^5\),\(^16\) Atopic dermatitis may present in three forms or phases, based on clinical presentation or age:\(^2\),\(^16\)

1. **Infantile atopic eczema** usually presents at three months and subsides by three years of age. The rash is normally found on the face, limbs and trunk (extensor surfaces).\(^2\),\(^16\)
2. **Childhood eczema** presents between the ages of two and three years, with the bulk of the disease manifesting itself at five years of age. The rash presents on the flexural areas (antecubital and popliteal fossae, neck), wrists, ankles, and feet (Figure 8).\(^2\),\(^16\)
3. **Preadolescent and adolescent eczema** starts at 12 years of age and may continue to the early adult years, or indefinitely. The rash normally presents on the face, sides of the neck, hands, feet, and antecubital and popliteal fossae (to a lesser degree).\(^2\),\(^16\)

The acute rash may present with erythema and weeping lesions, and chronic lesions may scale with lichenification (thickening of the skin) caused by chronic scratching. Secondary infection may present with weeping, yellow crusted lesions that do not respond to therapy.\(^2\),\(^16\)

Management of the condition includes the following principles:

- Explain the condition to the parents, and help them identify triggers/irritants. The irritants, once identified, must be avoided, and may include soaps, bubble baths and prickly clothing.\(^1\),\(^2\)
- Once the rash has started, atopic dermatitis needs to be treated actively to prevent the spread of the rash to the rest of the body.\(^1\),\(^3\)
- The skin needs to be kept moist, and patients that have dry, thickened skin may use emulsifying ointment instead of soap.\(^1\),\(^2\)
- Inflammation must be treated with steroid creams; hydrocortisone 1% is usually adequate in mild to moderate cases. In young children, moderate-potency steroids (e.g. betamethasone valerate 0.02%) or potent steroids (methylprednisolone 0.1%) may be used if the patient does not respond to hydrocortisone 1%, or for acute exacerbations in areas other than the face and nappy area. However, prolonged regular use of moderate-potency steroids or potent steroids in infants and young children may cause skin atrophy or adrenal suppression.\(^1\),\(^2\) Oral steroids are rarely indicated for atopic dermatitis in children. Chronic dermatitis zinc and tar combinations may be used as a substitute to topical steroids, especially for eczema on the limbs.\(^2\)
- Scratching of itchy lesions may be controlled by educating the parents to distract the child and to keep his or her nails short.\(^1\),\(^10\) Prevention of overheating at night and the use of wet bandages when indicated is important.\(^1\),\(^2\) Antihistamines are useful to control itching when other measures are no longer useful.
- Infections should be treated actively with simple wet dressings (when indicated) and oral antibiotics when a secondary bacterial infection has occurred.\(^1\),\(^2\),\(^10\),\(^16\)

**Figure 8:** Atopic dermatitis (note the flexural involvement)

Papulosquamous rashes

**Seborrhoeic dermatitis**

Seborrhoeic dermatitis usually involves only the scalp (cradle cap), sides of the nose, eyebrows and inguinal region.\(^1\),\(^2\),\(^5\),\(^16\) The cause is unknown but it may present in the early infantile period when sebum production is high.\(^16\) Infantile-type seborrhoeic dermatitis starts soon after birth, continues up to six months of age, and appears moist and infected.\(^2\) The lesions may appear thick and yellow, with oily, scaly patches.\(^16\) The difference between seborrhoeic dermatitis and atopic dermatitis is that there is no positive family history of allergies in seborrhoeic dermatitis.\(^16\) Cradle cap may be prevented with regular use of commercial baby shampoo.\(^16\) Overnight use of emollients (paraffin or olive oil) may be used to soften and loosen the scales.\(^1\) Imidazole creams with hydrocortisone 1%, or salicylic acid (1%) and sulphur (1%) ointment may also be used.\(^1\) Anti-yeast shampoos (e.g. selenium sulphide or ketoconazole) should be applied cautiously to avoid irritation or toxicity.\(^1\),\(^2\),\(^16\)

Erythematous rashes

**Fever and exanthem**

The term “exanthem” may refer to a rash that “bursts or blooms” towards the end of the incubation of an infection, especially illnesses caused by viruses like the coxsackie virus, echovirus, Epstein-Barr virus, adenovirus, parainfluenza virus, influenza virus, parvovirus B19, human herpes virus 6, rubella and measles.\(^16\) The condition should be treated according to the specific clinical findings.
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References:
Roseola infantum

Roseola infantum is caused by the human herpes virus type 6 (HHV-6). It presents with a persistent high fever for three to four days in a child that otherwise appears well, and is typically seen in children from six months to two years of age.\(^1,16\) The rash appears as a rose-pink macule or maculopapule, first on the trunk, then spreading to the neck, face and extremities. Roseola infantum does not cause itching and the rash disappears after two days.\(^1,16\) Management includes the use of antipyretic drugs (paracetamol) and keeping the child comfortable.\(^1,16\)

Purpuric rashes

This includes, but is not limited to, the causes below.

Enterovirus infection

The rash caused by enterovirus infection presents with scattered petechiae, and is associated with fever.\(^1,6\) If the child seems unwell, refer for further clinical investigations, e.g. full blood count.\(^1,6\)

Septicaemia

Meningococcal septicaemia should be considered if a child that was previously well suddenly presents with a fever and tiredness.\(^1,6,16\) The glass test has been developed to confirm a non-blanching purpuric or petechial rash.\(^1,6,16\) The glass test involves applying pressure to the rash (with a glass so that the lesion can be viewed while pressure is being applied) and if, under pressure, the rash does not fade, it is non-blanching.\(^1,6,16\) The child may also refuse food, and vomit. Referral should be done immediately.\(^1,6,16\) The rash presents as a erythematous rash that progresses to purple purpura.\(^1,6,16\)

Leukaemia

Leukaemia should be considered in a child that has generalised petechiae or purpura, with no history of trauma or other injury.\(^1\) This child should be referred for further investigation and treatment.\(^1\)

Blue or black rashes

Vascular malformations

This is a collective term used to describe congenital capillary malformations that look like a patch of red-coloured skin, commonly referred to as a port wine stain or a nevus flammeus.\(^17\) However, other skin lesions can be blue or purple or skin-coloured, and these malformations can involve any mix of capillaries (e.g. port wine stain), veins, arteries (e.g. arteriovenous malformation) and lymphatics (e.g. cystic hygroma).\(^1\) These are mostly developmental defects that do not resolve.\(^1,17\) The face is the most affected area, followed by the upper part of the trunk, and most of these lesions are present at birth. However, a rare form of acquired port wine stain can occur at any stage after birth.\(^17\) Management of this condition requires a multidisciplinary approach and intervention from the paediatrician, dermatologist, radiologist and surgeon.\(^1\)

Haemangiomas

Haemangiomas may present as macular erythematous lesions in the first week of life, and then become soft, partly compressible red or purple swellings that are sharply defined.\(^1\) These lesions may present anywhere on the body. Most haemangiomas that are not present at birth grow over months, but then recover fully over several years.\(^1\)

Pityriasis alba

Pityriasis versicolor

Vitiligo

Post-inflammatory hypopigmentation

Vascular malformations

Haemangiomas

Mongolian spots

Blue naevi

Melanoma

Congenital pigmented naevi

Acquired pigmented naevi

Post-inflammatory hyperpigmentation

Figure 9: Classification and identification of a skin rash (step 4)
Management includes reassurance of the benign nature of the disease; however, if complications arise, that will influence other structures, e.g. lip, ear or nose, and referral will be necessary.¹

**Congenital dermal melanocytosis (Mongolian spots)**

Mongolian spots are normally present at birth or present in the first few weeks of life, and this is a hereditary developmental condition.¹,¹⁶ The spots are macular with blue-gray pigmentation, and present on the sacral and gluteal regions of a healthy infant.¹,¹⁸ They spontaneously disappear by four years of age, but can persist for life.¹,¹⁸ Management may include reassurance and cosmetic camouflage.¹,¹⁸

**Hypopigmented lesions**

**Pityriasis alba**

Pityriasis alba is common in prepubertal children, three to sixteen years of age.¹,¹² Lesions present on the face, upper body and limbs,¹,²,¹⁹ and may progress through three stages:¹⁹

- Papular (scaling) erythematous;
- Papular (scaling) hypopigmented; and
- Smooth hypopigmented.

The lesions may eventually subside and resolution of the discolouration may take weeks.¹,¹⁹ Pityriasis alba may be associated with atopic dermatitis.¹⁹ Management includes reassurance that the disease is self-limiting and treatment with topical hydrocortisone 1% ointment.¹,¹⁹ However, prolonged use on the facial area is not recommended.¹⁹

**Hyperpigmented lesions**

These lesions may be flat or be raised. If flat, consider junctional melanocytic naevi, café au lait spots, naevi spilus, pityriasis versicolor and postinflammatory hyperpigmentation.¹ If raised, compound melanocytic naevi, Spitz naevi and warts may be considered.¹

**Congenital pigmented naevi**

Congenital pigmented naevi are usually present at birth, but may develop later, within the first two years of life. If histologically identical to congenital naevi, the condition is called congenital naevus tardive.²⁰ Congenital naevi are considered risk factors for the development of melanoma, eventually.²⁰ A multidisciplinary approach is important and, once the condition has been identified, referral must take place.¹,²,²⁰ Specialists consulted include the dermatologist, plastic surgeon and paediatrician.¹,²,²⁰

**Acquired pigmented naevi**

Acquired pigmented naevi are rarely present at birth, and mostly developed during childhood.¹,²¹ These lesions may include freckles, lentigines, naevi spilus or acquired melanocytic naevi.¹ They do not usually progress to malignancy or melanoma during childhood. However, if the lesions are darkened or irregularly shaped, they should be investigated and removed immediately by a dermatologist.¹,²,²¹

**Other childhood rashes**

**Diaper dermatitis (nappy rash)**

The peak incidence of nappy rash is usually between nine and twelve months, as this condition is associated with less frequent nappy changes and the addition of solids to the diet.¹⁶ Diaper dermatitis is more frequently associated with infants that are bottle-fed than those that are breastfed.¹,¹⁶ Factors that may influence the progression of diaper dermatitis include:

- Skin wetness: Prolonged periods of exposure to urine may increase the vulnerability of the skin, causing abrasion (Figure 10).¹,¹⁶
- Skin/diaper pH: The combination of faeces and urine may increase the pH of the skin, which may promote the activity of faecal enzymes. These enzyme increase the permeability of the skin to bile salts, which may irritate the skin further. Breastfed infants have lower faecal activity and lower pH.¹,¹⁶
- Infection: Candida albicans infection presents with a bright red rash (Figure 11) with scaly margins, and the area affected extends beyond the diaper area, usually into the skin folds and sometimes the perianal area.¹,²,¹⁶

Management includes modifying the factors that affect and worsen the condition, such as moisture, skin pH and infection.¹⁶ This would mean regular nappy changes and, if possible, leaving the child without a nappy to allow the area to dry.²,¹⁶ The use of a barrier cream that includes zinc and castor oil, zinc oxide cream and emulsifying ointment (i.e. Ung emulsificans) is very useful to prevent abrasion, known as ammoniacal dermatitis.² If the area is inflamed, hydrocortisone 1% may be used, but stronger steroids are not recommended.¹

**Figure 10:** Irritant diaper dermatitis (note the sparing of the deep folds)
Sunburn

Sunburn is common in children, who may be exposed to ultraviolet either from direct sunlight, or an artificial light source. Ultraviolet A (UVA) rays are the longest and cause minimal burning; however, UVA exposure can result in premature ageing with photosensitive and photoallergic reactions. Ultraviolet B (UVB) rays are shorter and are responsible for burning and tanning, and have harmful side-effects, such as skin cancer.

Sunburn may present as:
- Redness, tissue swelling and tenderness (characteristic of a first-degree burn); or
- Blistering and necrosis (second-degree burns) and partial thickness burns.

Severe sunburn also be accompanied by nausea, vomiting, headache, fever, chills and dehydration.

Management should include education on prevention, either physical or chemical. Physical prevention could include protective clothing. Chemical prevention is provided by products that give sun protection, and these may include sunscreens (i.e. partially absorb the sunlight) or sunblocks (i.e. block out ultraviolet rays by reflecting sunlight). Sunscreens contain a sun protection factor (SPF), indicated by a number. The minimum SPF recommended for children is SPF 15 with a waterproof base. The higher the SPF number, the greater the protection that is offered. The SPF number is primarily an indication of UVB protection, not UVA protection.

Sunscreens should be applied 15-20 minutes before every sun exposure. The most effective sunscreens are those containing p-aminobenzoic acid (PABA) and PABA-esters, and they protect against UVB. Once sunburn has occurred, it is important to stop the burning process, rehydrate the patient and decrease the inflammatory response. The affected areas can be soaked in cool water, and afterwards an oil-in-water moisturiser can be applied. Paracetamol can be administered for pain and fever.

Conclusion

Rashes are a very common occurrence in children, and often more than one skin condition may be present at the same time. The evaluation of skin conditions requires a systematic, holistic approach. A careful history is important to determine the origin of the rash. Referral is necessary if there are other systemic signs and symptoms.

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References


Figure 11: Diaper dermatitis with fungal involvement (note the involvement of the flexures)