Managing healthy skin for babies

The arrival of a new baby is an exciting experience for parents, but the early days of parenthood can be overwhelming and unsettling. Managing and protecting their baby's sensitive skin is of great importance and healthcare practitioners are ideally placed to provide valuable advice and support to new parents. Three common skincare problems – Candida infection, napkin dermatitis and infantile eczema – are discussed in this article.

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Keywords

Candida; dermatitis; nappy rash; eczema; moisturiser

Key points

Atherton D.J. Managing healthy skin for babies. *Infant* 2009; 5(4): 130-32.

1. Prevention and treatment of eczema should be focused on the skin itself rather than the infant's diet.
2. No soaps or foaming cleansers of any kind should be used for washing a baby.
3. Babies should be washed in water alone or if their skin is dry and inflamed, a water-dispersible cream.
4. Fabric and clothing should be soft to the touch and absorbent.

Candida infection

Candida albicans is a yeast which is carried asymptomatically in the mouth, colon or vagina in quite a substantial proportion of the population. Newborn infants, especially the premature, are very susceptible to infection with this yeast (termed *candidiasis* or *candidosis*), probably reflecting the immaturity of their immune systems. The major source of the infection is the mother's vagina at the time of delivery. *Candida* yeasts are also attracted by the persistently moist conditions found in the napkin area.

Oral candidiasis is rather common in the newborn, and causes white plaques on the surface of the tongue and cheeks (**FIGURE 1**). It generally responds well to miconazole gel (Daktarin® oral gel) 2.5mL 12 hourly, continuing for two days after the plaques have disappeared. Lack of response to treatment or frequent recurrence may be the first indication of an immuno-deficiency state.

Napkin candidiasis is common, but it is unclear whether it is a primary infection or just a complication of pre-existing napkin dermatitis. The presence of *Candida* infection is indicated by the deep redness, which does not spare the deeper folds, with scaling at the margins, and pustules scattered beyond the margins of the main rash ('satellite' pustules) (**FIGURE 2**). If candidiasis is suspected a combined antifungal and hydrocortisone ointment, such as Daktacort® ointment should be applied.

Irritant napkin dermatitis or nappy rash

It is common for babies to experience a little irritant napkin dermatitis at some stage, but there is no doubt that this has become less of a problem, particularly in terms of the severity of the rashes one sees, since the advent of the modern superabsorbent disposable nappy. The rash is caused by irritation of the skin by digestive enzymes present in the infant's faeces, the activity of which is heightened by mixing with urine. One of the main reasons that superabsorbent gels in the best nappies are so effective is that they are able to absorb urine quickly and thereby prevent this mixing and help keep the baby dry.

It is typical of irritant napkin dermatitis for the rash to be seen predominantly on the convex surfaces such as the pubic area,

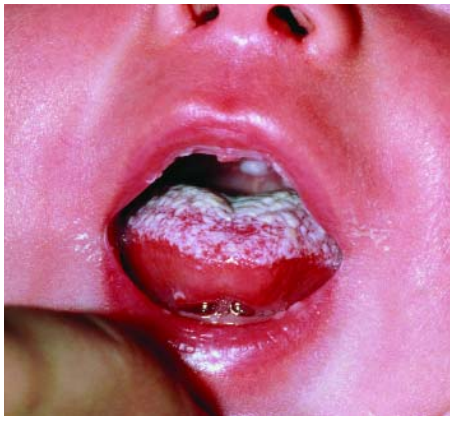

FIGURE 1 Oral candidiasis.

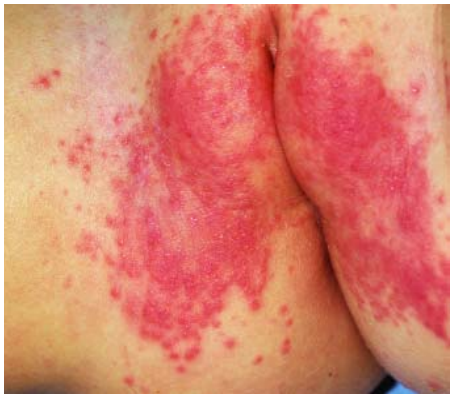

FIGURE 2 Napkin candidiasis.

Photos: Dr P Marazzi/Science Photo Library

and the upper thighs, tending to spare the deep parts of the folds where there has not been close contact with faeces. These are the areas of maximal contact with the nappy.

Treatment must focus on making sure that suitable nappies are in use, and that they are being changed quickly after defaecation. Skin cleansing should be gentle, and there is nothing to suggest that the best quality napkin area wipes are a problem; indeed the softness of the fabric used in their manufacture makes them ideal and good baby wipes no longer contain alcohol.

At home, after defaecation it is ideal to wash the baby's bottom in warm water, using a water-dispersible cream (see below) as if it were soap. A protective moisturiser should be applied at every nappy change. Rather than pastes that contain zinc or titanium oxides, a simpler preservative-free preparation such as Bepanthen® or Diprobase® ointment is preferable.

Atopic eczema ('infantile eczema')

The significance of the word 'atopic' has been the cause of a huge amount of controversy and, in many ways, it is therefore better to talk simply of 'infantile eczema'. For many years this condition was considered to be an allergic disease, due to some kind of problem with the developing immune system. It has always been clear that predisposition to infantile eczema is largely a genetic trait, and we now know that the genes that are responsible are predominantly ones that control the quality of the very outermost layer of the skin, the layer that provides the protective 'skin barrier'. This means that the disease originates more or less exclusively in the skin itself, and it follows that prevention and treatment need to be focused on the skin. The formerly popular focus on the infant's diet is manifestly irrelevant, and cows' milk avoidance was very rarely, if ever effective as a treatment.

The main stress placed on an infant's skin is air, which has a very drying effect, particularly in the winter months when the central heating is on. Other important stresses include soaps and other de-fatting cleansers, skin contact with foods and saliva, particularly when combined with friction. It seems that infants with a normal skin barrier are generally able to deal with these stresses, but those with a substandard barrier often do not, and the result is inflammation, visibly

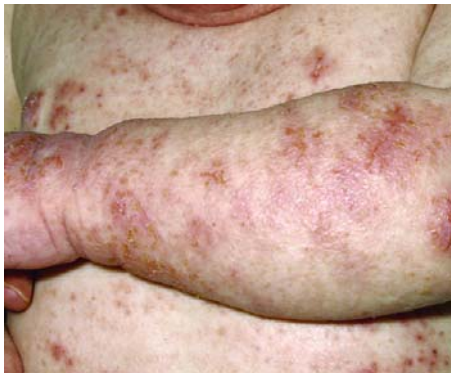

FIGURE 3 Atopic eczema

manifest as eczema.

Infantile eczema characteristically starts on the cheeks, and spreads in due course to the trunk and limbs, and most typically to the more distal limb flexures of the antecubital and popliteal fossae, and the wrists and ankles (**FIGURE 3**). It is also characterised by intense itchiness which provokes rubbing and scratching, which in its turn aggravates the condition. Another characteristic feature is the tendency for the napkin area to be relatively spared, probably because it is protected from the drying effect of air.

It appears that the quicker eczema is treated the less problematic it is likely to become. There are principally three components to treatment, which incorporate measures to help prevent recurrence. These are:

- Avoidance of irritants:
  - excessively dry air (by turning off the heating in a baby's bedroom, for example)
  - using no soaps or foaming cleansers of any kind for washing a baby
  - minimising skin contact with irritating foods, especially acidic foods such as fruit, fruit juice and tomato sauces, salty or spicy foods
  - making sure that all fabrics in contact with the skin are soft (non-abrasive) and absorbent
  - avoiding treatments that themselves irritate sensitive skin.
- The frequent application of protective moisturiser to shore up the skin's inadequate defences.
- The application of a suitably mild topical steroid to deal with inflammation when this is more than minimal – moisturisers alone are very unlikely to get rid of eczema once established, though they may keep it at bay subsequently.

Particular issues which need to be considered are discussed below.

Bathing

The increasing exposure of babies to de-fatting cleansers of one sort or another has been a major feature of the last 25 years. However 'skin-friendly' the claims, these products are invariably a bad idea. Babies should be washed in water alone, or, if their skin is at all dry or inflamed, a water-dispersible cream such as Cetraben® or Diprobase® should be used during the bath exactly as if it were soap. These products clean well but they do not remove the skin's natural oily defences. Baths done this way are good for inflamed skin.

Moisturisers (emollients)

The best moisturisers for treating eczema and napkin dermatitis are those that provide the most effective protection and that have the least potential to irritate the skin themselves. Creams and lotions invariably contain preservatives which can be irritating when used as leave-on moisturisers, and which can even lead to allergy. One of the most popular but also the most irritating can be aqueous cream BP. Therefore dermatologists prefer ointments, which generally do not need to contain preservatives. Ideal preparations for a leave-on moisturiser include:

- a mixture in equal parts of white soft paraffin and liquid paraffin ('50/50')
- Epaderm® or Hydromol®
- Diprobase® ointment

Fabrics and clothing

- **Fabrics**. It is important to select the right fabrics for a baby with sensitive skin. This means choosing fabrics which are soft to the touch and absorbent. Good quality cotton fulfils these criteria but so now do many synthetic materials or mixtures.
- **Clothing**. The way the fabrics are made into clothing is also very important. Seams and labels should also be soft and non-abrasive, and ideally they should be on the outside of the garment, not the inside as has traditionally been the case.
- **Care of clothing**. It also seems sensible to choose the right way to care for your baby's clothing. Important elements of this process are:
  - the best quality washing machine you can afford
  - careful attention to the performance of the washing machine, particularly in respect of efficient rinsing
  - non-biological products such as Fairy Non bio that have minimal fragrance

and have been evaluated for skin safety are ideal.
– a suitable fabric softener to minimise the friction of clothing; again it is best to choose products that have been thoroughly evaluated for skin safety.

Care of the skin in the premature neonate

The skin of the preterm neonate is immature immediately after birth. However, in neonates of more than 25 weeks' gestation, it matures to full-term condition within the next three weeks. In contrast, in the very premature (less than about 25 weeks' gestation), the skin may remain immature for up to about eight weeks after birth. This leads to many problems, particularly a very high rate of water loss through the skin, high heat losses, and high permeability. While it seems likely that the use of suitable barrier-enhancing moisturisers would be beneficial, there is a dearth of evidence to indicate which, if any, are ideal. For the time being, it may be best to use the simplest ones, such as white soft paraffin BP.

Summary

The skin of the healthy full term infant can largely be expected to look after itself. However, eczema and napkin dermatitis affect large numbers of infants at some stage or another, and may have a major impact on quality of life for baby and parents alike. Good skin care practices can undoubtedly reduce the risk of these problems developing, and should be regarded as a normal part of good parenting.

Further reading

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2. **Harper J., Oranje A., Prose N. eds.** Textbook of Pediatric Dermatology. 2nd ed. Blackwell. 2006.

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