

## Chapter 3:

# Skin characteristics of premature neonates, neonates and children

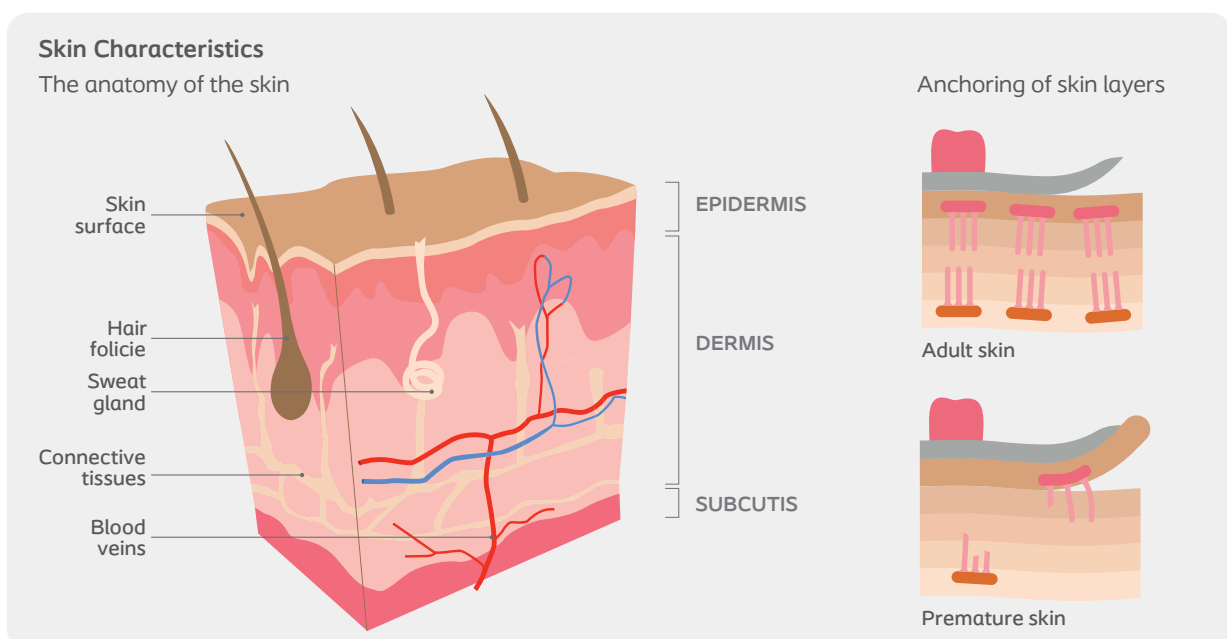
When treating the paediatric population, you need to familiarise yourself with the skin characteristics of this group. The skin of a premature neonate differs from that of the full-term neonate, child or adult. While adult skin has 15-20 cell layers, premature neonates have just a few cell layers, sometimes two to three, and sometimes none at all. Premature neonates are at greater risk of increased heat evaporation and trans-epidermal water loss (TEWL). The skin of a premature neonate is highly permeable, meaning that products applied on their skin may be absorbed into their system. For this reason, topical products, such as liquid skin barrier, adhesive remover, skin cement and benzoin should be avoided because of the risk of systemic toxicity.<sup>1</sup>

Use these products only in extreme circumstances – when nothing else has worked or when the risk of not using these products outweighs the risk of using them. Always be cautious when using them on premature neonate skin.

## What to be aware of

Any product containing alcohol should be avoided in premature neonates until their skin is mature enough to allow its use. However, infants of 37 weeks' gestational age show no drug transcutaneous absorption and have a good skin barrier function.<sup>2</sup> If there is a need to use a product such as chlorhexidine in a solution of alcohol, the skin should be promptly and thoroughly rinsed with sterile water afterwards. It is important to teach the caregivers to always check the components of any product they apply on the skin.

Research also shows that premature neonates present a diminished cohesion between the dermis and the epidermis that can lead to skin tearing when removing the skin barrier.<sup>3</sup> This is why any skin barrier should ideally remain on the skin for at least 24 hours. We recommend keeping the barrier on the skin for up to 48 hours, after which it should be removed carefully.



1 AWHONN, 2007  
2 Oranges T & al, 2015  
3 AWHONN, 2007