

As soft as a baby's skin: understanding the unique properties of infant skin

The age-old adage, "as soft as a baby's skin," evokes a sense of tenderness and care that resonates deeply with parents and caregivers alike. While this comparison highlights the delicate nature of infant skin, a deeper exploration reveals a complex organ that is fundamentally different from adult skin.¹

© Medpharm

Prof Nurs Today 2025;29(1):4-6

Understanding Infant Skin

For nurses and healthcare professionals, understanding these differences is crucial for providing optimal care to our youngest patients, whose skin health is integral to their overall well-being.¹

Infant skin serves as a vital barrier that supports their growth and protects them from the external environment. Neonates and infants possess unique skin characteristics that are critical for their survival, particularly in the early months of life.¹

At birth, full-term infants have a competent skin barrier, but it is still in a state of development and maturation that continues throughout the first year.¹ This ongoing evolution underscores the importance of maintaining the skin barrier, as it plays a pivotal role in preventing infections and supporting overall health.¹

The Vernix

A remarkable feature of newborn skin is the presence of vernix, a natural, protective substance that coats the skin at birth.²

Composed of water, lipids, and proteins, the vernix serves multiple functions vital to an infant's skin health.^{2,3}

- It not only supports the development of the skin barrier but also acts as an effective moisturiser and provides antimicrobial protection.^{2,4}

Abstract Current guidelines, such as those from South Africa, advocate for leaving vernix intact after birth, allowing it to be naturally absorbed and maximising its protective benefits.⁵ This practice emphasises the importance of preserving the natural elements that contribute to the infant's skin health.

Vulnerability of Infant Skin

Delving deeper into the structure of infant skin reveals its vulnerabilities.⁶

The stratum corneum, the outermost layer of the skin, is approximately 30% thinner in infants compared to adults.⁶ This thinner barrier results in higher rates of transepidermal water loss (TEWL) and an increased susceptibility to irritants and pathogens.⁶

As a consequence, maintaining skin hydration and barrier integrity becomes paramount in caring for infants, particularly those with sensitive skin or conditions such as eczema, which affects 1 in 4 children globally.²

The prevalence of atopic conditions highlights the urgent need for caregivers to be aware of the unique characteristics of infant skin and the potential long-term implications for skin health.

Moreover, the skin microbiome plays a crucial role in the overall health of infant skin. From the moment of birth, the skin is colonised by microbes, which contribute significantly to the development of the immune system and provide additional protection against harmful pathogens.⁷

This dynamic environment continues to evolve throughout infancy reinforcing the need for practices that promote microbiome diversity, such as skin-to-skin contact and breastfeeding.⁸ These practices not only enhance the protective qualities of the skin but also foster a stronger bond between the caregiver and the infant.

Differences in Skin Composition

Differences in skin composition related to ethnicity and culture can influence skin care practices. Scientific literature has documented notable structural differences between African and Caucasian skin.

For instance, research indicates that African skin typically has an increased number of cell layers, which enhances its resistance to abrasions and injuries, despite having similar overall thickness to Caucasian skin.⁹ Additionally, African skin often exhibits a higher lipid content in the stratum

corneum, which contributes to its barrier function, albeit with a decrease in ceramides.⁹

This unique composition leads to increased desquamation and more rapid barrier recovery.⁹ However, it is essential to note that these differences do not correlate with a greater risk for dry skin conditions. Instead, ensuring proper skin care routines tailored to the individual needs of each infant is vital for long-term skin health.⁹

Infant Skin Care

Given the delicate nature of infant skin, it is vital to approach their care with evidence-based practices.¹

Water alone is often insufficient for cleansing, as it fails to effectively remove fat-soluble impurities that can compromise the skin barrier.^{1,10,11}

Gentle, pH-balanced cleansers specifically formulated for infants should be utilised, with recommendations for bathing frequency tailored to the child's age and skin condition.^{1,5} In between baths, a sponge bath with mild cleanser can help maintain cleanliness without stripping the skin of its natural moisture.⁵

Emollients containing stable ingredients, such as mineral oil, are also crucial for locking in moisture and protecting against TEWL.¹

In conclusion, while the phrase "as soft as a baby's skin" conjures fond imagery, it serves as a reminder of the unique challenges and needs of infant skin. For nurses and caregivers,

our understanding of these differences allows us to provide the best possible care, ensuring that the delicate skin of our youngest patients remains healthy and protected. By implementing appropriate skincare practices and fostering a nurturing environment, we can help support the remarkable resilience of infant skin, ultimately promoting their overall health and well-being as they grow. This commitment to care is not just about preserving softness; it is about laying the foundation for a lifetime of skin health.

References

1. Telofski LS, et al. *Dermatology Research and Practice*, 2012.
2. Qiao W, et al. *Ann Dermatol*. 2019;31(6):611-620.
3. Tollin M, et al. *Cell Mol Life Sci*. 2005;62(19-20):2390-2399.
4. Visscher MO, et al. *Front Mol Biosci*. 2022;9:894496.
5. South Africa Neonatal Skin Care Evidence-based Clinical Practice Guidelines. <https://www.nnasa.org.za/2024/07/01/south-african-neonatal-skin-care-guidelines/>
6. Stamatias GN, et al. *Pediatric Dermatology* 2010;27(2):125 -131.
7. Capone KA, et al. *Journal of Investigative Dermatology* 23 June 2011. Online publication. doi:10.1038/jid.2011.168.
8. Gaitanis G, et al. *Pediatr Dermatol*. 2019;36(4):460-465.
9. Rawlings AV. *International Journal of Cosmetic Science*, 2006;28:79-93.
10. Lavender T, et al. *BMC Pediatrics*. 2011;11:35.

® Trademark © Johnson & Johnson (Pty) Ltd 2025. Consumer Care Contact Centre www.kenvuecontact.com
ZA-AVB-2025-188668

