



Scientific research



The world's purest baby wipes

WaterWipes, the world's purest baby wipes are specifically designed to be as mild and pure as using cotton wool and water, but as convenient as a wipe and safe for the most delicate skin.



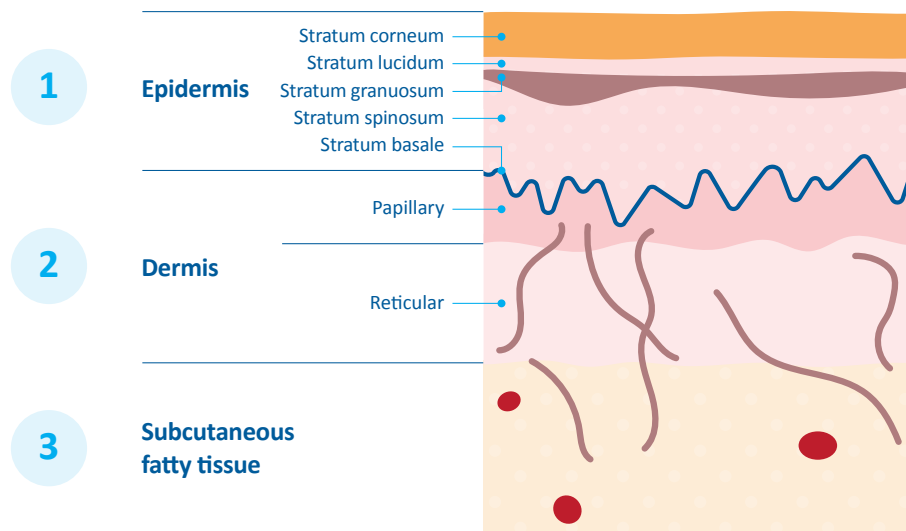
Currently, there is limited, high-level, long-term clinical evidence available on the most effective and safe cleansing of healthy, full-term neonates and infants.¹

However, based on knowledge of the composition of newborn and infant skin and how it is structurally unique compared to that of older children and adults, we can better understand how to best care for delicate baby skin. Outlined below is an overview highlighting some of the unique properties of baby skin, along with considerations for ways to maintain its important barrier function and the benefits of WaterWipes.

Understanding the unique properties of baby and infant skin

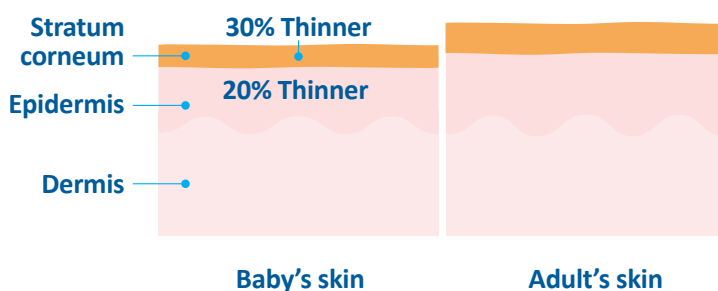
Baby and infant skin works as a less effective barrier^{2,3} – it is far more delicate and vulnerable, requiring special care and protection.

The skin is the body's largest organ and consists of three main layers: the epidermis, the dermis and a layer of subcutaneous fatty tissue. The epidermis is further divided into the stratum corneum, stratum lucidum, stratum granulosum, stratum spinosum, and stratum basale. The stratum corneum is the outermost layer and acts as a protective barrier against dehydration, microorganisms, chemical substances and allergens. Significant clinical evidence stresses the importance of the stratum corneum and its barrier function for babies, especially neonates.⁴



Structural differences between baby and adult skin

The skin of infants and young babies is unique compared to that of older children and adults in terms of structure, composition and function. The epidermis in babies is 20% thinner and the stratum corneum is 30% thinner,⁵ which increases susceptibility to permeability and dryness.⁶ However, in contrast to adults, infant skin has an increased proliferation rate,⁷ which supports the maturation of the skin barrier during the first year of life.

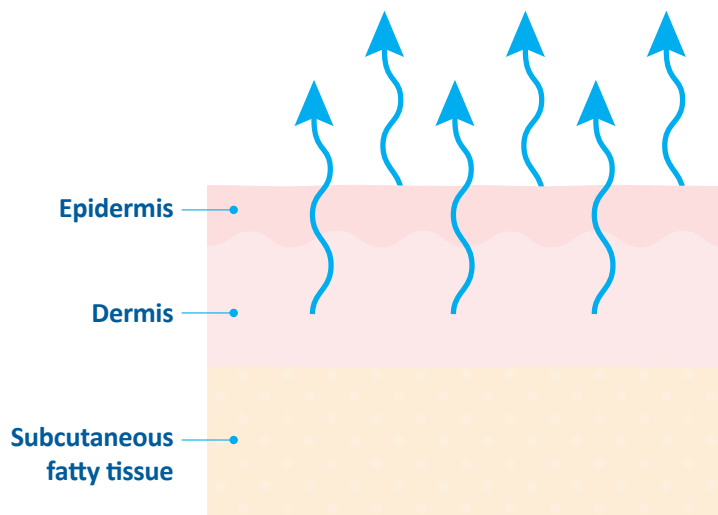


Comparison of baby skin to adult skin, showing thinner epidermis and stratum corneum.

Increased trans-epidermal water loss (TEWL)

Baby skin is less firmly attached than mature skin and has a higher propensity to increased trans-epidermal water loss [TEWL] and reduced stratum corneum hydration, reflecting a less effective skin barrier function.^{2,3} While the stratum corneum may appear intact shortly after birth, it takes time to mature and the way it stores and transports water only functions similarly to adults after the first year of life.⁴ From birth, barrier function and the water handling properties of the stratum corneum are continually optimising and the properties that make infant skin unique are thought to persist at least through the first 12 months of life.⁴

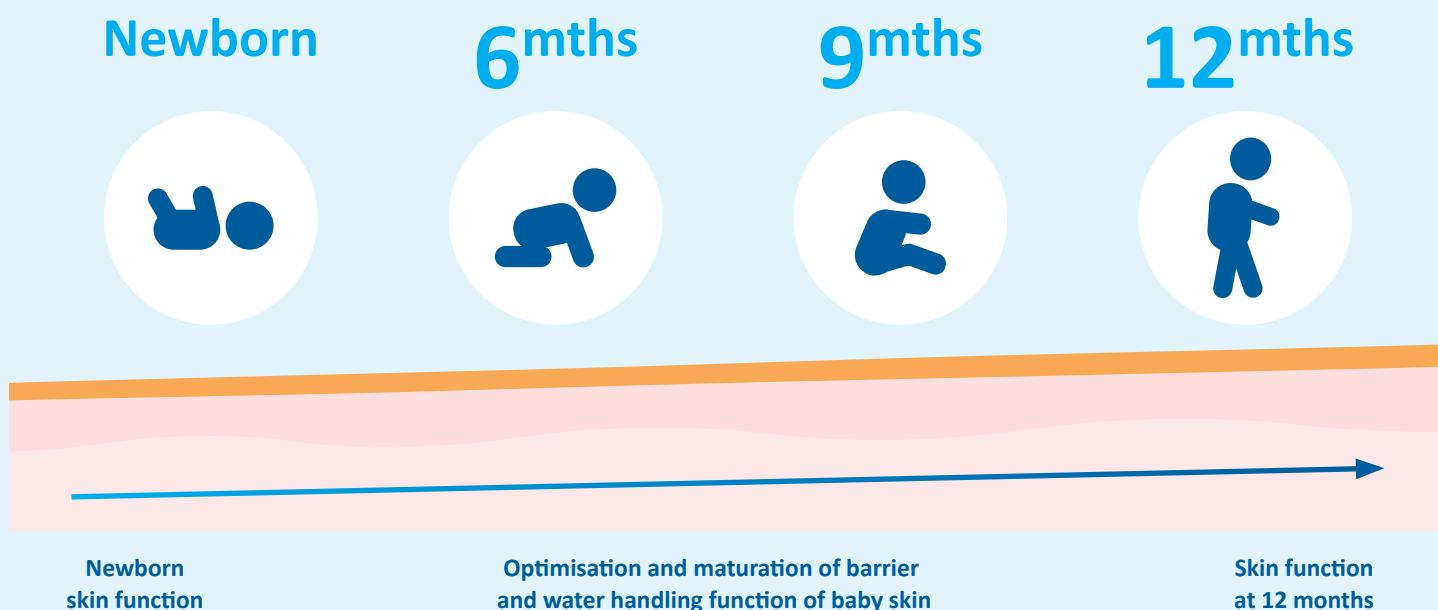
Premature infants of less than 32 weeks gestation have lower impedance and high TEWL at birth which leads to increased insensible water loss. In these premature infants, TEWL can exceed 30% of their total body weight within a 24 hour period.⁷



Trans-epidermal water loss (TEWL) is a normal process of the skin

Development of baby skin during the first year¹

The properties that make baby skin unique persist through the first 12 months.

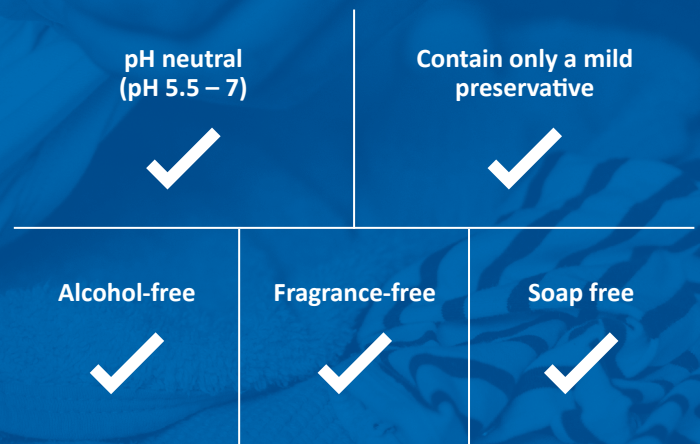


Throughout the first 12 months of a baby's life skin continues to develop. The barrier function of the epidermis and stratum corneum gradually increases.

It is recommended that any topical agents used for bathing and cleansing newborns and infants, should not adversely alter or affect the protective skin barrier.⁶

- The ratio between baby body surface to baby body weight is higher than in adults,⁵ meaning topical agents are more readily absorbed and can therefore have a more pronounced effect on baby skin.⁶
- Breakdown in the function of the stratum corneum characterises atopic dermatitis,⁸ therefore the aim of newborn skin-care regimens is to help maximise and stabilise the function of the stratum corneum.
- The need to optimise baby skin's barrier function is necessary, in part to help prevent the development of childhood atopic eczema.⁴ While genetic predisposition plays a part, environmental factors such as the use of topically applied natural or commercial skin care products are also linked to development of the condition.^{9,10,11}

- When considering products for use on neonate or infant skin, the aim should be to use those which help preserve the skin barrier function of the stratum corneum.⁶ Ideally they should be pH neutral (pH 5.5 – 7), fragrance-free, alcohol-free and contain only a mild preservative.¹²



- WaterWipes have been specifically developed to be as mild and pure as cotton wool and water, to help maintain the important skin barrier function of the stratum corneum, yet offer the convenience of a wipe. They are so gentle they can also be used on premature babies.
- Made using 99.9% purified water and a drop of Grapefruit Seed Extract (GSE), Waterwipes are the purest baby wipes in the world. GSE contains naturally occurring polyphenols which act as antimicrobials and antioxidants with the ability to protect the body from bacteria. WaterWipes are alcohol and fragrance free to help reduce the risk of drying out delicate baby skin and the potential development of contact or allergic dermatitis.

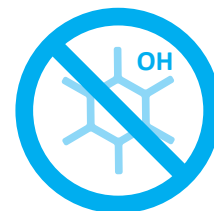
- WaterWipes are developed through unique and patented technology that alters the molecular structure of normal water, causing energy to be released within the pack, which results in sterilized wipe material. This process also slightly alters the surface tension of the water, allowing for a unique “soft feel” on the skin and making WaterWipes even more effective at cleaning than cotton and regular water.¹³
- Unlike conventional wipes, WaterWipes rely on hygiene, care and conditioning during manufacture and packaging using ‘cleanroom’ conditions, which are comparable to those used in the pharmaceutical industry for the production of medicines.

They are the only baby wipe to have secured numerous accreditations and endorsements from global skin and allergy associations such as:

- ♦ Allergy UK
- ♦ The National Eczema Association of America (NEA)
- ♦ The French Association for the Prevention of Allergies (Association Française pour la Prévention des Allergies – AFPRAL)
- ♦ The Eczema Association of Australasia (EAA)



WaterWipes are suitable for use on even the most sensitive skin and can be used on babies from birth.



WaterWipes are alcohol and fragrance free to help reduce the risk of drying out the skin and the potential development of contact or allergic dermatitis.

WaterWipes are the purest baby wipes in the world. They are made using 99.9% purified water and a drop of fruit extract. The liquid Grapefruit Seed Extract (GSE) used in WaterWipes is derived from the seeds, pulp and white membranes of the grapefruit. GSE has naturally occurring antimicrobial properties which help to keep the wipes fresh once opened, as well as acting as a gentle skin cleanser and conditioner.



**If you'd like more information on WaterWipes,
please email us at info@waterwipes.com**

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