

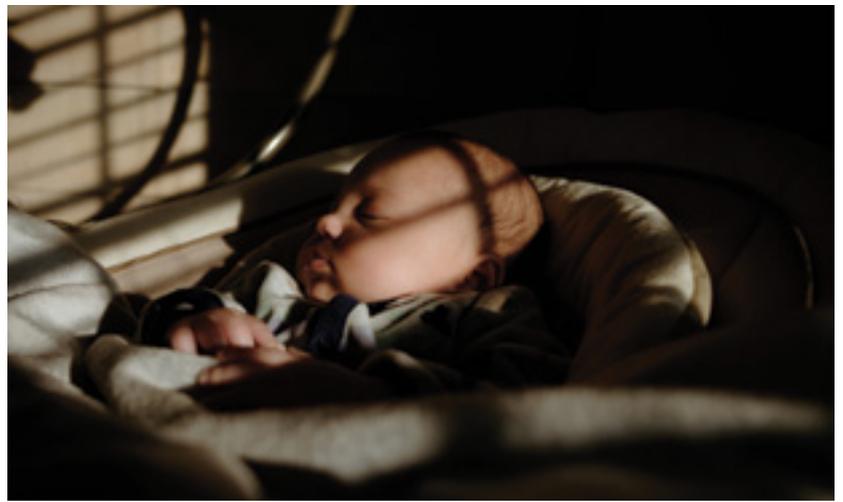
# Wool & Babies

**Author:**  
International Wool  
Textile Organisation

A growing body of scientific evidence is helping to make the clear link between wool and wellbeing. Nowhere does this translate so compellingly as when applied to babies and newborns.

## Wool Keeps Babies Warm

Keeping babies warm helps them stay healthy and comfortable – and happy! Babies use large amounts of energy to stay warm if they are in a cold environment or dressed inadequately. Wool helps babies keep up the energy reserves they need: researchers found that weight gain in underweight newborn babies was 61% higher when they slept on a wool underlay rather than cotton.<sup>1</sup>



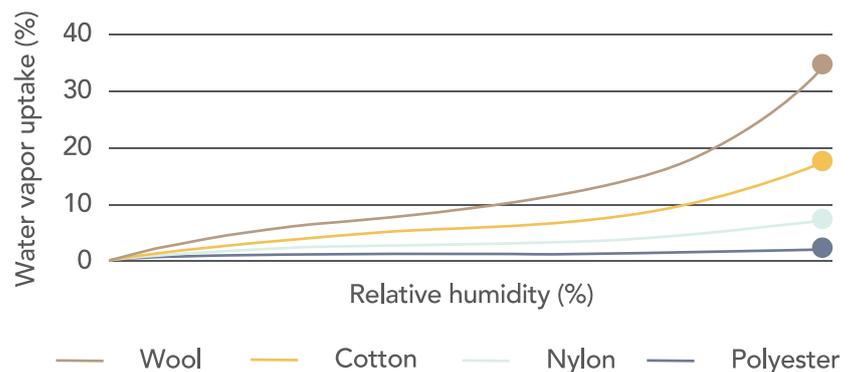
*Babies can't adjust to temperature changes as well as adults, and can lose heat rapidly, nearly 4 times faster than an adult.<sup>2,3</sup>*

## .... But Not TOO Warm

*Natural breathability = naturally more comfortable: wool can absorb up to 35% of its weight in water, and release it into the air. This means humidity does not stay trapped against the skin.<sup>4,5,6,7</sup>*

Wool, a protein-based fibre made of keratin (the same as human hair) helps regulate body temperature, reducing risk of overheating. Petroleum-based fabrics such as polyester, acrylic and nylon do not have this natural ability!

But wool allows the skin to breathe naturally, helps prevent sweating, and lets the body find a natural equilibrium.



Moisture uptake of wool and other common apparel fibres.

## Cradle Comfort

Wool is rarely allergenic: we now know that what used to be called “wool allergy” is not allergy at all, but a reaction to coarser fibres coming into contact with nerve receptors in the skin.<sup>8</sup>

Finer wools like Merino are soft and gentle against the skin. In fact, garments made of “superfine” wool (wool with a mean diameter of  $\leq 17.5$  microns) have shown benefits to people suffering from eczema or atopic dermatitis – adults and children both.<sup>9,10,11,12</sup>

## Sleeping Soundly

Sleep is the primary activity of the brain during early development. Numerous studies have shown that the first three years of life are a particularly sensitive time for sleep and its relationship to brain development.<sup>13,14,15</sup>

Studies have found that babies that slept with merino wool had lower rates of activity and a deeper, more restful sleep. They settled more quickly, cried less, slept longer and gained weight faster.

In a study of Australian pre-schoolers and bedding, researchers found that children who slept on synthetic bedding were more likely to have a problem sleeping, than those who slept on cotton or wool.<sup>1</sup>

And a UK-based study of babies with very low birthweight showed significantly larger weight gains when nursed on lambswool, rather than cotton sheets.<sup>16</sup>

## Best for Baby, Best for Mother Earth

It is natural for parents to want the best for their baby, and wool makes it easy to provide a solution that sustains the planet as well.

Wool is the essence of renewable – every year, sheep produce a new fleece, the result of grass, water, air and sunshine.

Wool is known for its biodegradability on land and in water. At the end of its useful life, wool can be returned to the soil or the marine environment where it decomposes, releasing nourishing, nitrogen-based nutrients.

Half the weight of clean wool is pure organic carbon, derived from the carbon in the atmosphere. By contrast the carbon in synthetic fibres such as polyester and acrylic is extracted from fossil fuels stored underground millions of years ago, where nature put them for safekeeping.

Choose wool for your baby and help safeguard the planet for future generations.

Kindly sponsored by



<sup>1</sup> R. Laing and P. Swan, Wool in Human Health and Well-Being, Natural Fibres: Advances in Science and Technology Towards Industrial Applications (Springer, The Netherlands, 2016) pp 19-34.

<sup>2</sup> Livestrong <https://www.livestrong.com/article/531290-why-babies-must-be-kept-warm/>

<sup>3</sup> Stanford Children's Health <https://www.stanfordchildrens.org/en/topic/default?id=warmth-and-temperature-regulation-90-P02425>

<sup>4</sup> Shin, M., Halaki, M., Swan, P., Ireland, A., and M.C. Chin. The effects of fabric for sleepwear and bedding on sleep at ambient temperatures of 17°C and 22°C, Nature and Science of Sleep 2016; 8: 121–131. Published online 2016 Apr 22. doi: 10.2147/NSS.S100271

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4853167/>

<sup>5</sup> Rae and R. Bruce, The Wira Textile Data book, Leeds: The Wool Industries Research Association, 1973, A64

<sup>6</sup> Speakman J. B & Cooper C. A. The Adsorption of Water by Wool, Part 1 – Adsorption Hysteresis, Journal of the Textile Institute Transactions, 1936 27:7, T183-T185 (<http://dx.doi.org/10.1080/19447023608661680>).

<sup>7</sup> Urquhart, Alexander Robert B.Sc., A.L.C. and Williams, Alexander Mitchell M.A., D.Sc. The effect of temperature on the absorption of water by soda boiled cotton, Journal of the Textile Institute Transactions, 1924, 15:12. (<http://dx.doi.org/10.1080/19447022408661326>)

<sup>8</sup> Debunking the myth of wool allergy: reviewing the evidence for immune and non-immune cutaneous reactions. Acta Derm Venereol 2017;97:906–15

<sup>9</sup> Su JC, Dailey R, Zallmann M, et al. Determining Effects of Superfine Sheep wool in Infantile Eczema (DESSINE): a randomized paediatric crossover study. Br J Dermatol 2017;177:125–33

<sup>10</sup> Spelman LJ, et al. An investigator blinded, clinical trial assessing the efficacy of superfine merino wool base layer garments (SMWBG) in children with atopic dermatitis (AD) measuring SCORAD, EASI, POEM and DSA scores. Biomed J Sci Tech Res 2018;7:5687–92

<sup>11</sup> Fowler JF, et al. The effects of merino wool on atopic dermatitis using clinical, quality of life, and physiological outcome measures. Dermatitis 2019;30:198–206

<sup>12</sup> Spelman LJ, et al. A pilot study to determine the safety, tolerability and efficacy of merino base layers in the treatment of mild, moderate or severe dermatitis in a garment occluded area: AWI001. 23rd World Congress of Dermatology, Vancouver, Canada, 2015.

<sup>13</sup> US National Sleep Foundation <https://www.sleepfoundation.org/articles/children-and-sleep>

<sup>14</sup> Graven, S., Browne, J., Sleep and Brain Development: The Critical Role of Sleep in Fetal and Early Neonatal Brain Development. Newborn and Infant Nursing Reviews, Volume 8, Issue 4, December 2008, Pages 173-179. <https://www.sciencedirect.com/science/article/pii/S1527336908001323>

<sup>15</sup> Kelly, Y., Kelly, J., Sacker, A. Time for bed: associations with cognitive performance in 7-year-old children: a longitudinal population-based study. J Epidemiol Community Health 2013;67:926-931.

<sup>16</sup> Dahl, Ronald MD. Sleep and the Developing Brain. Sleep. 2007 Sep 1; 30(9): 1079–1080. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1978403/>

<sup>17</sup> Scott, S., Cole, T., Lucas, P. and Richards, M. Weight Gain and Movement Patterns of Very Low Birthweight Babies Nursed on Lambswool. The Lancet. October 29, 1983 [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(83\)90990-X/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(83)90990-X/fulltext)