

WOOL IS GOOD FOR THE SKIN

Recently published research has demonstrated that wearing superfine Merino wool next to the skin is beneficial for eczema sufferers. This adds to a growing number of research findings supporting the wellbeing benefits of superfine Merino wool. The research has shown that wearing superfine Merino wool significantly improves the severity and symptoms of this chronic skin condition, challenging misconceptions that all wool is prickly and itchy.



WHAT IS ECZEMA

Eczema, or atopic dermatitis, is an inflammatory condition where the skin becomes dry, leading to cracking, bacterial infection, redness and itching. Eczema affects up to 28% of infants with increasing prevalence in many parts of the world. The most common treatments currently include the regular application of non-cosmetic moisturisers and topical steroids to reduce inflammation, as well as antibiotics to address bacterial infection.

WOOL IS BENEFICIAL FOR ECZEMA SUFFERERS

Whether it's hot, cold, humid or dry, garments made from Merino wool are the most breathable compared with garments made from most common apparel fibre types. Wool can absorb and release twice as much moisture vapour as cotton and 30 times as much as polyester.

When worn next to the skin, wool works to buffer the dynamic micro-climate between the fabric and the skin, helping to stabilise the humidity and temperature. It appears that wool acts like a second skin.

Eczema sufferers have especially sensitive skin and an Australian study at the Murdoch Children's Research Institute has shown that wool garments made from soft superfine Merino wool garments were well tolerated by participants in the study and reduced their eczema symptoms. *(Note: the garments must have a mean fibre diameter of 17.5 micron or finer.)*

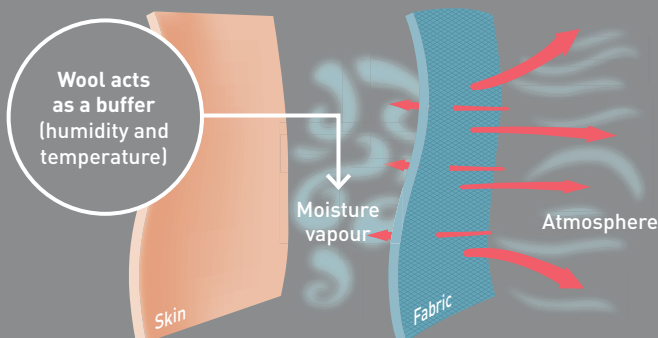


Figure 1: Wool works to buffer the dynamic micro-climate between the fabric and the skin.

MOISTURE VAPOUR UPTAKE

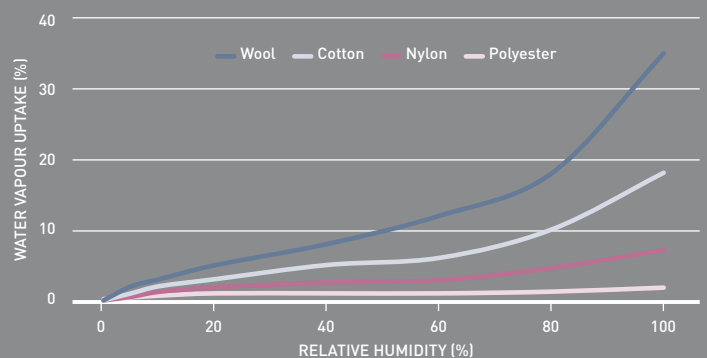


Figure 2: Moisture vapour uptake of wool and other fibres showing how wool is one of the best of the common apparel fibres.

WOOL IS GOOD FOR THE SKIN

DERMATOLOGY TRIALS SHOW REDUCTION IN ECZEMA SYMPTOMS

In positive news for eczema sufferers, three recent dermatology trials have shown that infant, adolescent and adult eczema sufferers have reported reduced symptoms when wearing superfine Merino wool garments next to the skin.

STUDY 1: "WOOL CLOTHING RECOMMENDED FOR INFANTS WITH ECZEMA" (MCRI, MELBOURNE)

The theory that superfine Merino wool worn next to the skin could benefit eczema sufferers was put to the test in this study led by Associate Professor John Su at Murdoch Children's Research Institute.

The study showed that superfine Merino wool clothing reduced the severity of paediatric mild-moderate atopic dermatitis as compared to cotton clothing.

The graph below shows the reduction in eczema symptoms over a six-week period while wearing wool clothing and the subsequent increase in symptoms on resuming cotton clothing.

Published in the [British Journal of Dermatology](#), this study challenges the misconception that all wool is to be avoided by children with eczema. The study concluded that traditional management guidelines classing all wool-based clothing as irritants should be modified to include superfine Merino wool as a recommended clothing choice in childhood atopic dermatitis.

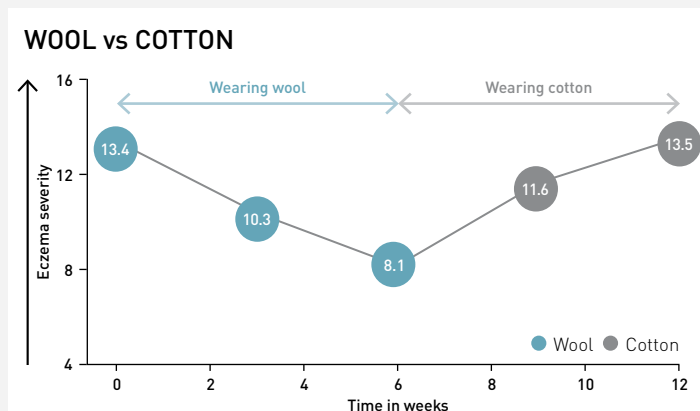


Figure 3: Determining effects of superfine sheep wool in infantile eczema.

STUDY 2: SUBSTANTIAL REDUCTIONS IN SYMPTOMS FOR ADOLESCENTS AND ADULTS WITH ECZEMA (QIDERM, BRISBANE)

A study of adolescent and adult sufferers of eczema in Brisbane, led by Dr Lynda Spelman at the Queensland Institute of Dermatology (QIDerm), has also demonstrated the beneficial effects of wearing superfine Merino wool next to the skin.

Published in the [Journal of Scientific & Technical Research](#), the study concluded superfine Merino wool base-layer garments could provide a valuable adjunct therapy in the management of atopic dermatitis.

"We have seen substantial reductions in skin dryness, redness and itchiness, and in the measured area of inflammation," said Dr Spelman.

STUDY 3: SIGNIFICANT IMPROVEMENTS SEEN IN MEAN ECZEMA AREA AND SEVERITY INDEX SCORES (DIVISION OF DERMATOLOGY, UNIVERSITY OF LOUISVILLE, KENTUCKY, USA)

A study of child and adult sufferers of eczema by the Division of Dermatology, University of Louisville, Kentucky has also demonstrated the beneficial effects of wearing superfine Merino wool next to the skin.

The study, published in the medical journal [Dermatitis](#) and led by Professor Joe Fowler, confirmed that wearing Merino wool clothing compared to standard clothing provided improvements in severity of atopic dermatitis as well as quality of life in atopic dermatitis patients.

"This study and those of Professor John Su and Dr Lynda Spelman show that fine-diameter Merino wool clothing should be considered acceptable for people with eczema and seems to be therapeutic to patients with mild to moderate atopic dermatitis," Professor Fowler said.

WOOL IS NOT AN ALLERGEN

A highly esteemed group of medical professionals from across the world has reviewed research papers published during the past 100 years to critically assess scientific studies claiming wool causes allergy. The group has now published a paper [Debunking the Myth of Wool Allergy](#) with the primary conclusion there is no credible evidence wool is an allergen. It found that if a fabric does cause sensations of itch and prickle on the skin then it is because of the large diameter of the fibres and not due to the fibre type being wool.

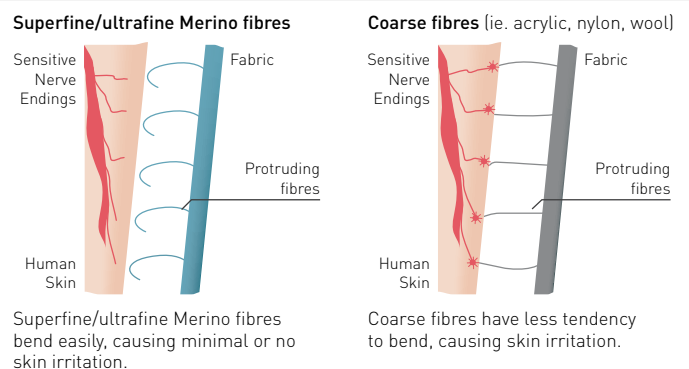


Figure 4: Superfine versus coarse fibres.

WOOL IS GOOD FOR THE SKIN



Watch now to discover the therapeutic benefits of superfine Merino wool.
[youtube.com/thewoolmarkcompany](https://www.youtube.com/thewoolmarkcompany)

REFERENCES

Eczema effects up to 28% of infants with increasing prevalence in many parts of the world:

- Draaisma E. et al. *A multinational study to compare prevalence of atopic dermatitis in the first year of life*, *Paediatric Allergy and Immunology*, 2015, pp 359 – 366
- Williams H. *Atopic Dermatitis*. *N Eng J Med* 2005;352: pp 2314–2324.
- Asher M, et al. *Worldwide time trends in the prevalence of symptoms of asthma, allergic rhinoconjunctivitis, and eczema in childhood: ISAAC Phases One and Three repeat multicountry cross-sectional surveys*. *Lancet* 2006;368: pp733–743.
- Weidinger S, Novak N. *Atopic dermatitis*. *Lancet* 2016;387: pp 1109–1122.

Figure 2: Moisture vapour uptake of wool and other fibres showing how wool is one of the best of the common apparel fibres:

- Rae and R. Bruce, *The Wira Textile Data book*, Leeds: The Wool Industries Research Association, 1973, A64
- Speakman J. B & Cooper C. A. *The Adsorption of Water by Wool, Part I – Adsorption Hysteresis*, *Journal of the Textile Institute Transactions*, 1936 27:7, T183-T185.
- Urquhart, Alexander Robert B.Sc., A.I.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.

Wool garments are the most breathable of the common apparel types: A. Rae and R. Bruce, *The Wira Textile Data book*, Leeds: The Wool Industries Research Association, 1973, A64.

Wool can absorb and release twice as much moisture vapour as cotton and thirty times as much as polyester: A. Rae and R. Bruce: *The Wira Textile Data book*, Leeds. The Wool Industries Research Association, 1973, pp 64 – 72.

Superfine Merino wool clothing reduced the severity of paediatric mild-moderate Atopic Dermatitis as compared to cotton clothing: J.C. Su et al. *Determining Effects of Superfine Sheep wool in Infantile Eczema (DESSINE): a randomized paediatric cross over study*, *British Journal of Dermatology*, 2017, p 132.

The study concluded that traditional management guidelines should be modified to include superfine merino wool as a recommended clothing choice in childhood Atopic Dermatitis: J.C. Su et al. *Determining Effects of Superfine Sheep wool in Infantile*

Eczema (DESSINE): a randomized paediatric cross over study, *British Journal of Dermatology*, 2017, 177, p132.

Figure 3: Determining Effects of Superfine Sheep wool in infantile Eczema: J.C. Su et al. *Determining Effects of Superfine Sheep wool in Infantile Eczema (DESSINE): a randomized paediatric cross over study*, *British Journal of Dermatology*, 2017, 177, p131.

The study, led by Dr Lynda Spelman of QIDerm, concluded that that superfine merino wool baselayer garments provide a valuable adjunct therapy in the management of Atopic Dermatitis: L.J. Spelman 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*, *Biomedical Journal of Scientific and Technical Research*, 2018.

We have seen substantial reductions in skin dryness, redness and itchiness, and in the measured area of inflammation: Personal communication, 2015, Dr. L. Spelman, Queensland Institute of Dermatology/Australian Wool Innovation.

A study of children and adult sufferers of eczema by the Division of Dermatology, University of Louisville, Kentucky has also demonstrated the beneficial effects of wearing superfine Merino wool next to the skin: Fowler J. et al. *The Effects of Merino Wool on Atopic Dermatitis Using Clinical, Quality of Life, and Physiological Outcome Measures*, *Dermatitis*, 2019.

The study, led by Professor Joe Fowler of the Division of Dermatology, confirmed that wearing Merino wool clothing compared to standard clothing provided improvements in severity of atopic dermatitis as well as quality of life in atopic patients: Fowler J. et al. *The Effects of Merino Wool on Atopic Dermatitis Using Clinical, Quality of Life, and Physiological Outcome Measures*, *Dermatitis*, 2019, 3, p204.

Professor Fowler said: "This study and those of Professor John Su and Dr Lynda Spelman show that fine-diameter Merino wool clothing should be considered acceptable for people with eczema and seems to be therapeutic to patients with mild to moderate atopic dermatitis.": Fowler J. et al. *The Effects of Merino Wool on Atopic Dermatitis Using Clinical, Quality of Life, and Physiological Outcome Measures*, *Dermatitis*, 2019, 3, p204

The group has now published a paper "Debunking the Myth of Wool Allergy" with the primary conclusion that there is no credible evidence wool is an allergen: Michaela Zallmann et al. *Debunking the Myth of Wool Allergy: Reviewing the Evidence for Immune and Non-immune Cutaneous Reactions*, *Acta Dermato Verereologica*, 2017.