

## Can hard water cause eczema?



### Fact checker

- Hard water has often been considered to be an affecting factor to eczema
- New research by scientists at the University of Sheffield proved that hard water can damage the skin's barrier
- It raises the risk of infection and potentially contributes to the development of eczema
- Minerals in hard water (the same that cause limescale) were shown to make skin more sensitive to irritation
- When researchers used our twin tank water softeners in their study they found softened water could reduce these negative effects

### How did they study people?

It was conducted in a controlled environment in the Royal Hallamshire Hospital in Sheffield on a total of 80 participants. These 80 people were split into four groups:



**20 people with healthy skin**



**20 people with the FLG protein and no eczema issues**



**20 people with eczema or FLG protein**



**20 people with eczema and the FLG protein**

It was a wide variety of people in gender and age ranging from 18-56 year olds.

They took hard water from Essex homes and then softened water from the same homes with a twin cylinder water softener installed. The participants were then washed on 8 sections of their body with 2 parts left alone to act as a reference point. No one knew the type of water they were being washed with at any point.

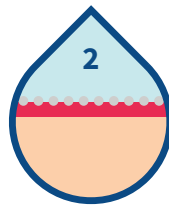
The washing was done with 5 seconds water, 30 seconds washing, then another 5 second rinse, across all of the patients making it completely fair and scientific.

# What did they find?

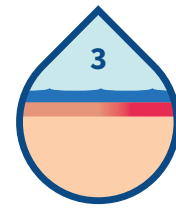
They found that washing with different kinds of water affected the skin in different ways.



**Patients with the FLG protein were more prone to developing eczema**



**Hard water creates an irritable skin barrier that could cause eczema in healthy skin**



**Hard water ultimately made eczema worse**

This was not all that was discovered though, hard water was worse for an infant's skin than previously thought. This is bad news for anyone in a hard water area that suffers from skin conditions, especially those who have developed eczema whilst washing in hard water.

## The final results

- 1** Maintaining a pH balance in washing products was found to be a good way of avoiding eczema.
- 2** Washing with hard water made skin irritation worse for people already suffering from eczema.
- 3** Washing with hard water increased exposure and deposits of irritant SLS which can cause red and irritated eczema on the skin.
- 4** In infants, washing with hard water could contribute to the early development of eczema at a very young age.

**Water softeners can reduce the risk of developing eczema.\***

**Water softeners can reduce the risk of developing eczema by reducing the irritant magnesium and calcium bits left from washing.\***

“By damaging the skin barrier, washing with hard water may contribute to the development of eczema - a chronic skin condition characterised by an intensely itchy red rash. Patients with eczema are much more sensitive to the effects of hard water than people with healthy skin.”

*Dr Simon Danby, Research Fellow, The University of Sheffield*

## What does this mean for me?

A water softener could be a solution to eczema problems, as well as saving you money. Eczema is a complicated condition with signs and symptoms that are different for everyone, and in some cases it unfortunately may not be the answer.