

# The effect of an emollient bath additive on skin hydration

*Milan D. Antonijević and Ovidiu Novac*

University of Greenwich, Faculty of Engineering and Science, Chatham Maritime, ME4 4TB, Kent, England, UK

## Introduction

Atopic dermatitis is a common inflammatory skin condition affecting around 20% of UK children that has a substantial impact on their quality of life. NICE recommends regular use of “emollient wash products” and this is one of the reasons why emollient bath additives are commonly prescribed by healthcare professionals in the UK. The aim of this study was to compare hydration levels of human skin after simulated bathing with/without added bath emollient (Doublebase).

## Materials and Methods

Six full-thickness *ex vivo* human skin samples, from a single donor, were mounted in Franz cells with the stratum corneum facing upwards. After equilibration for 120 mins, time zero (baseline) skin hydration levels were measured three times for each cell using a Corneometer® CM825. For three cells selected at random, the skin surfaces were then bathed with 5 ml of warm water (38 °C) containing the bath additive (1 ml bath additive to 2.5 L water). For the three other cells, the skin surfaces were instead bathed in 5 ml of plain warm water alone (also at 38 °C). Bathing water was left in place for 20 minutes to simulate a typical bathing routine and then removed by pouring off and drying the skin surface by gently patting with low-lint cloths (to simulate drying after bathing). Triplicate skin hydration measurements were then repeated immediately after patting dry, and 30 min, 1 h and 2 h later.

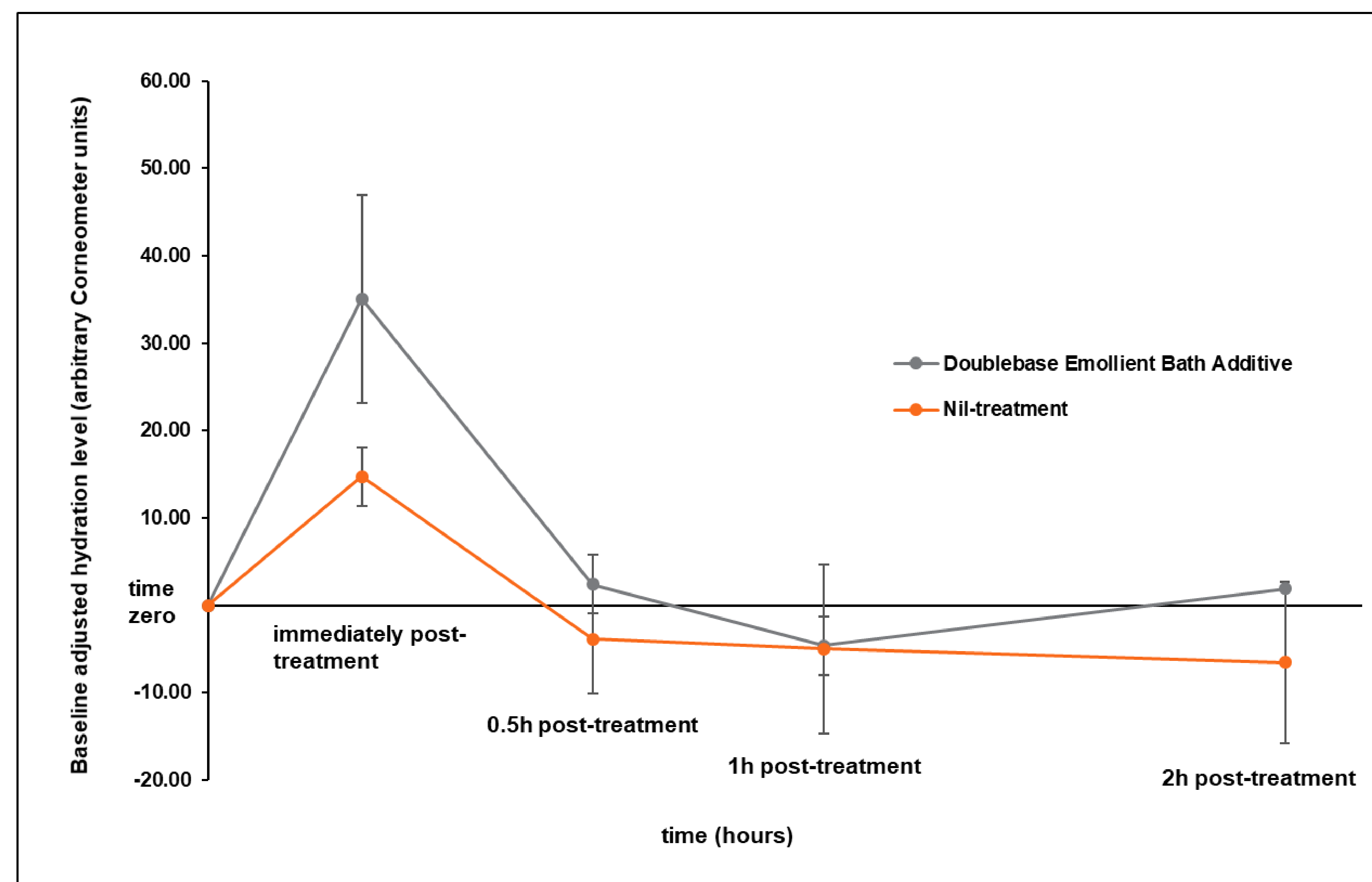


Figure 1. Mean hydration change from baseline for skin bathed with Doublebase Bath Emollient Additive and for skin bathed in plain water (Mean ± SD, n=3 replicates).

## Results

Immediately after patting dry, higher skin hydration values compared to baseline were recorded for skin bathed with Doublebase emollient bath additive ( $65.88 \pm 6.11$ ) than for skin bathed in plain water ( $52.19 \pm 3.20$ ).

## Conclusion

The study shows that this emollient bath additive increased skin hydration compared to bathing in plain bath water when measured immediately after patting the skin dry. Bath additives may therefore be a useful part of eczema care for children to avoid the use of ordinary, perfumed and detergent-based bath products that are known to aggravate atopic dermatitis.