

# Effectiveness of Mineralizing Water in Skin Barrier Recovery after Skin Irritation

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# Disclosure of Conflicts of Interest

- Support for these studies was provided by Laboratoires Vichy.
- Delphine Kerob and Marion Nielsen are full-time employees of Laboratoires Vichy.
- Enzo Berardesca and Adriana Bonfigli have no relationships to disclose.

## Rationale and Objectives

- Vichy mineralizing water, which originates in the Auvergne region in France, is recognized to be a volcanic water highly enriched in minerals that strengthen the skin's natural defences.
- It has been renowned since the 18th century for its soothing dermatological properties and has been used as a cosmetic ingredient since 1931.
- In order to investigate skin barrier recovery, sodium lauryl sulfate (SLS) can be used to chemically induce skin barrier disruption [1].

The objective of this study was to evaluate the effect of Vichy volcanic mineralizing water (VVMW [Vichy]) compared to thermal water from another region (ATW [Avène]) on restoring an altered skin barrier.

# Methods

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Study	Open study to evaluate the efficacy of the Vichy volcanic mineralizing water (VVMW) in restoring irritated skin
Subjects	20 men or women aged 20-60 years old No moisturizing products allowed on forearms for previous 10 days
Chemically-induced skin barrier disruption	Three 3x3cm areas were delineated on the forearms of each subject 3% SLS patches were applied for 16 hours to induce chemical irritation
Test products	The 3 chemically-irritated sites were randomly assigned to <ul style="list-style-type: none"><li>• VVMW, 10 days twice daily application</li><li>• Avene thermal water (ATW), 10 days twice-daily application</li><li>• No treatment</li></ul>
Assessments	Transepidermal water loss (TEWL) by tewameter Redness by chromameter Erythema by clinical assessment (on a 4-point scale from absent to severe)

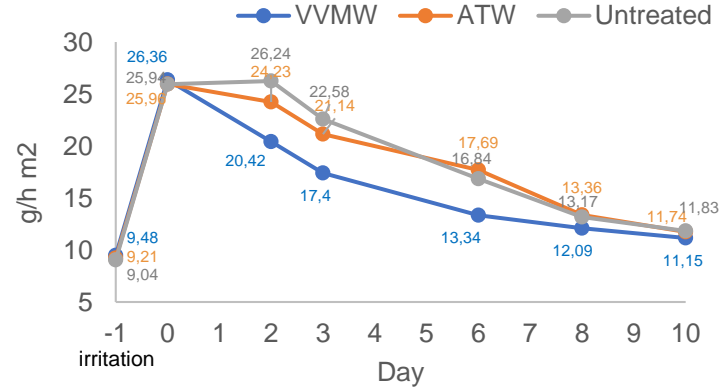
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# Results of Instrumental Evaluations

## Transepidermal Water Loss

An accelerated statistically significant decrease in TEWL with VVMW as soon as D2 with a 22% decrease compared to D0 ( $p < 0.05$ ).

TEWL decrease was not significant compared to baseline for ATW and untreated skin until D6.

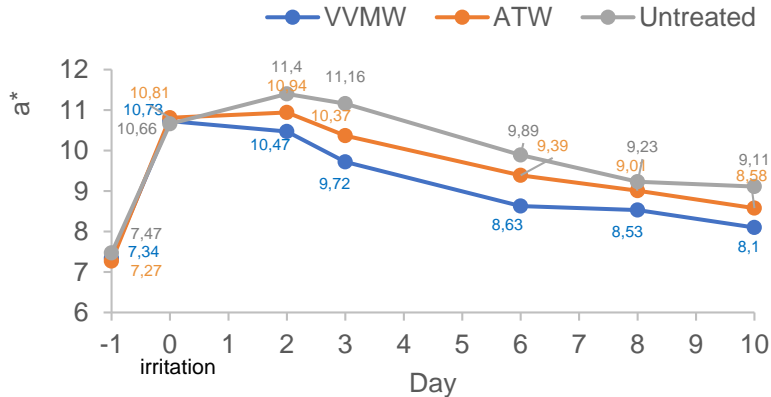


## Redness

Redness decreased 20% with VVMW by D6 after irritation compared to D0 ( $p < 0.05$ ).

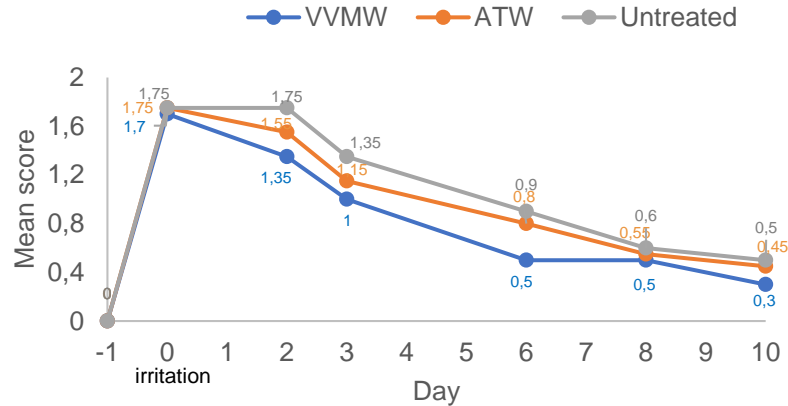
Redness was improved by D6 with ATW.

There was no statistically significant improvement in redness for the untreated skin until D8.



# Results of Clinical Evaluation

## Erythema



Accelerated recovery of erythema at D2 (-20% vs. D0) for VVMW.

Decrease in erythema score was not statistically significant compared to baseline for ATW and untreated skin until D3 and D6, respectively.

### Conclusions

Vichy volcanic mineralizing water leads to faster recovery of TEWL and erythema following chemically-induced skin barrier disruption than thermal water from Avène or untreated skin.