

# UC Davis

## Dermatology Online Journal

### Title

Scalp-to-toes application of permethrin for patients with scabies

### Permalink

<https://escholarship.org/uc/item/1zz05980>

### Journal

Dermatology Online Journal, 24(5)

### Authors

Modi, Krishna  
Patel, Devika  
Shwayder, Tor

### Publication Date

2018

### DOI

10.5070/D3245040156

### Copyright Information

Copyright 2018 by the author(s). This work is made available under the terms of a Creative Commons Attribution-NonCommercial-NoDerivatives License, available at <https://creativecommons.org/licenses/by-nc-nd/4.0/>

# Scalp-to-toes application of permethrin for patients with scabies

Krishna Modi<sup>1</sup> MD, Devika Patel<sup>2</sup> MD, Tor Shwayder<sup>2</sup> MD

Affiliations:<sup>1</sup>Wayne State University School of Medicine, Detroit, Michigan, USA; <sup>2</sup>Department of Dermatology, Henry Ford Hospital, Detroit, Michigan, USA

Corresponding Author: Tor Shwayder, Department of Dermatology, Henry Ford Hospital, 3031 West Grand Boulevard, Suite 800, Detroit, MI 48202, Email: [TSHWAYD1@hfhs.org](mailto:TSHWAYD1@hfhs.org)

## Abstract

Scabies is an infestation of *Sarcoptes scabiei* resulting in intensely pruritic erythematous papules tipped with hemorrhagic crusts. Current guidelines and medication labels instruct application of topical permethrin 5% cream from neck down for treatment of adult patients with scabies. Although scalp and head involvement are observed in infants, it is rare in older children and adults. Herein, we present a case of an 11-month-old patient who had scalp involvement, and required a scalp-to-toes application of permethrin. We also present a 77-year-old patient with scabies involving the head, who failed initial treatment when permethrin was applied neck down, but had subsequent resolution when it was applied scalp-to-toes. These cases provide impetus for review of current guidelines to reflect application of topical permethrin 5% cream to all external surfaces of the body including the scalp and head.

Keywords: scabies, permethrin, *Sarcoptes scabiei*

## Introduction

Scabies is an infestation of *Sarcoptes scabiei* resulting in pruritic erythematous papules. The typical distribution includes the webs of fingers, flexor aspect of the wrists, and extensor aspects of the elbows. Scalp and head involvement are rare in older children and adults and are more commonly observed in infants. One of the effective treatments of scabies is application of topical permethrin 5%

cream; but current guidelines recommend application of the permethrin cream from the neck down. Crusted scabies is a more severe variant and treatment generally consists of concomitant oral ivermectin along with topical permethrin, again applied from neck down. Herein, we present two cases of patients with scabies involving the head and scalp that required scalp-to-toes treatment of the topical permethrin.

## Case Synopsis

An 11-month-old boy presented with erythematous papules and nodules with overlying excoriations in the bilateral axillae, wrists, scalp, and umbilicus. A mineral preparation from the axilla showed mites, eggs, and feces. In addition, a separate preparation from the scalp showed eggs and feces. These tests were diagnostic for scabies. Topical permethrin 5% cream was prescribed to the patient and was to be applied from scalp-to-toes on two separate applications one week apart, and to close contacts. The patient was seen 23 days later with no signs of scabies and a negative mineral preparation.

A 77-year-old woman presented with diffuse excoriated, erythematous papules with subtle scaling over the ears, scalp, arms, and legs. A mineral preparation from the left ear showed eggs and feces. A preparation from the axillae showed live mites, eggs, and feces. A diagnosis of scabies was made and the recommended treatment was topical permethrin 5% cream to be applied from scalp-to-toes, with two

separate applications one week apart. The permethrin cream was applied only neck down and the patient continued to have scabies and symptoms for 2 weeks after treatment. Following treatment with permethrin 5% cream scalp-to-toes, the patient showed improvement. On follow-up visit, the skin was clear and the mineral prep was negative; the patient was believed to be clinically cleared of scabies.

## Case Discussion

Permethrin is an effective treatment for scabies. A single whole-body application has a clinical cure rate of 91%. A second application usually ensures that the infection has completely cleared [1]. Ivermectin is another scabicide agent used for concomitant treatment in crusted scabies. It is not the first line treatment for uncomplicated scabies as it has not been studied in pregnant and lactating women or children weighing less than 15kg. In some studies permethrin has a higher cure rate [2, 3].

The current Centers for Disease Control and Prevention guidelines recommend for treatment of scabies with application of permethrin 5% cream to all skin surfaces from the neck down. This approach is also endorsed by the American Association of Family Physicians and Society of Pediatrics. Although scalp involvement in scabies is rare in older children and adults, there have been many cases, including

the cases described above, of both children and adults with scalp involvement. Taplin et al. reported scalp involvement in 41% of their patients aged 2 to 5 years and it has also been reported in elderly patients, suggesting a physician may find evidence of scabies on the scalp if the scalp is examined [4, 5]. It may be introduced to the scalp by a patient scratching their scalp after they have scratched an infested area of the body, such as the arms or wrists.

Failure to clear scabies is uncomfortable for the patient, exposes contacts to risk of infestation, and results in additional expenses related to additional physician visits and costs of additional medication. Topical permethrin 5% cream is safe to use on the scalp of infants less than 1-month-old and in pregnant and breast-feeding women [1]. Adverse reactions for permethrin include increased temporary skin irritation and local discomfort. The patients in this report did not report any side effects from application of permethrin on the scalp.

## Conclusion

We call for reevaluation of current guidelines that recommend only neck down treatment of scabies. The current guidelines may result in treatment failure for a portion of the population. Permethrin is a safe medication and there is insufficient evidence to exclude treatment of the scalp.

## References

1. Quarterman MJ, Leshner JL Jr. Neonatal scabies treated with permethrin 5% cream. *Pediatr Dermatol.* 1994;11(3):264-6. [PMID: 7971563].
2. Goldust M, Rezaee E, Hemayat S. Treatment of scabies: Comparison of permethrin 5% versus ivermectin. *J Dermatol.* 20012;39(6):545-7. [PMID: 22385121].
3. Patel VM, Lambert WC, Schwartz RA. Safety of topical medications for scabies and lice in pregnancy. *Indian J Dermatol.* 2016;61(6):583-587. [PMID: 27904173].
4. Taplin D, Meinking TL, Chen JA, Sanchez R. Comparison of crotamiton 10% cream (Eurax) and permethrin 5% cream (Elimite) for the treatment of scabies in children. *Pediatr Dermatol.* 1990;7(1):67-73. [PMID: 2188239].
5. Huang YC, Chen MJ, Shih PY. Crusted scabies on the scalp mimicking seborrheic dermatitis. *Clin Infect Dis.* 2012; 54(6):882. [PMID: 21235380].