

INNOVATIONS IN CARE

Diagnosis of scabies with dermoscopy

A 72-year-old woman was referred to our dermatology clinic with a 6-month history of severe diffuse pruritus. Examination with a hand-held epiluminescent

stereomicroscope (dermoscope) (Figure 1) revealed scabies mites (Figure 2) within minutes, and we began a topical treatment with 5.0% permethrin cream.



Figure 1: A hand-held epiluminescent stereomicroscope in use.



Figure 2: Traditional microscopic image of a female scabies mite suspended in oil (original magnification $\times 200$).



Figure 3: Photograph of patient's palm, showing a straight burrow that is about 5 mm long and visible to the naked eye.

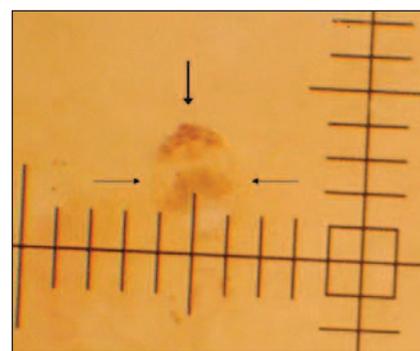


Figure 4: Photographic image of a female scabies mite taken through a hand-held epiluminescent stereomicroscope (original magnification $\times 40$). Note the hang-glider-like triangle of the mite's head (vertical arrow) and round body (horizontal arrows). The hash marks on the axes are at 0.1-mm intervals.

The female *Sarcoptes scabiei* mite is 0.2–0.4 mm long and burrows into the host's corneal skin layer to lay its eggs. Burrows are often shaped like an “s” or “z.” They are characteristically found in areas such as the finger webs, axillae, buttocks, scrotum and under the breasts. However, other locations, such as the palm, as in our patient's case, are possible (Figure 3). Local hypersensitivity reactions often also develop in patients, leading to highly pruritic groups of red papules 2–5 mm wide. Symptoms develop within 2 to 6 weeks of being infested; however, in patients with previous infestations, symptoms develop within a few days.

Scabies is traditionally diagnosed clinically and confirmed by microscopic examination of burrow skin scrapings, suspended in mineral oil or saline. Visualization of the mites (Figure 4), eggs or feces confirms the diagnosis. However, handling and processing scrapings rapidly and effectively in the office is not always straightforward.

Dermoscopy is an alternative technique for diagnosing scabies. An illuminated magnifier, also known as an epiluminescent stereomicroscope (magnification $\times 20$ – 60) is required. The hand-held device, designed in 1996 by the dermatologist JF Kreuzsch, is held perpendicular to the skin (Figure 1). At magnification $\times 20$ – 40 , the

typical appearance of the mite's head and 2 pairs of forelegs resemble the triangular shape of a hang-glider. Sometimes the contour of the round body of the mite can also be identified (Figure 4).

Dermoscopy for scabies is 91% sensitive (95% confidence interval [CI] 80%–92%) and 86% specific (95% CI 80%–92%) (magnification $\times 10$).¹ For busy clinicians, dermoscopy represents a simple, accurate and rapid technique that is worth considering for the diagnosis of scabies.

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REFERENCE

1. Dupuy A, Dehen L, Bourrat E, et al. Accuracy of standard dermoscopy for diagnosing scabies. *J Am Acad Dermatol* 2007;56:53-62. Published online 2006 Nov 13.

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