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Scabies: Clinical Pearls for Community Dermatologists

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Introduction

Scabies is a common parasitic skin infestation caused by *Sarcoptes scabiei var. hominis*, with an estimated global burden of over 200 million cases annually.[1] Scabies remains underdiagnosed and can often be challenging to manage. Institutional outbreaks, diagnostic delays, and treatment failures contribute to ongoing morbidity. This practical literature review summarizes clinical pearls for community dermatologists, integrating recent diagnostic frameworks, treatment evidence, and evolving considerations related to drug resistance and public health control.

1. Identification - International Alliance for the Control of Scabies Criteria Aid in a Structured Diagnosis

The International Alliance for the Control of Scabies released a consensus diagnostic framework in 2020 that stratifies the diagnosis of scabies into three levels: confirmed, clinical, and suspected.[2]

Confirmed scabies requires direct visualization of mites, eggs, or feces, typically via dermoscopy or microscopy. Dermoscopy—revealing the characteristic "delta-wing jet" sign—is a practical diagnostic tool in outpatient settings and is widely used in clinical trials.

Treatment	Dosage/Regimen	Indications	Precautions	Brand Names (*Canada*)
Permethrin 5% cream/lotion	Apply from the neck down (include the scalp in children and older adults) Repeat after 7–14 days.	First-line treatment for most patients, including children ≥2 months and pregnant individuals.	Irritation; avoid eyes and mucous membranes.	*Nix Dermal Cream, Kwellada-P Lotion*
Oral Ivermectin	Administer 200 mcg/kg on days 1 and 8; adjust for crusted scabies or institutional cases.	Alternative first-line treatment in adults particularly when topical treatment is not feasible or if resistance is a concern.	Avoid in pregnancy; Not ovicidal.	*Stromectol*
Benzyl Benzoate 25%	Apply nightly for 2–3 days, repeat after 7 days if needed.	Resource-limited settings; not available in US/Canada.	May cause skin irritation/stinging.	N/A (not commercially available in Canada)
Sulfur 5–10% Ointment	Apply nightly for 3 consecutive nights. Rinse off each morning.	Infants <2 months, and individuals who are pregnant or breastfeeding.	Odorous, stains clothing, poorly tolerated.	Compounded product only
Crotamiton 10%	Apply daily for 5 days.	Second line if other treatments are contraindicated or unavailable.	Low efficacy; avoid in severe disease.	*Eurax*
Spinosad 0.9% Suspension	Apply once and allow 10 minutes to dry. Wash off after 6 hours. Repeat in 7 days if needed.	Approved for children ≥4 years and adults.	Well-tolerated.	*Natroba* (not yet available in Canada)

Table 1. Classic Scabies Treatment[10]; *courtesy of Patrick Fleming, BSc (Nutrition), MSc (Community Health), MD, FRCPC.*

Clinical scabies is diagnosed based on the presence of classic lesions in characteristic locations with supportive history (e.g., burrows and/or scrotal nodules).

Suspected scabies may lack classic features such as burrows, but this does not exclude a diagnosis of scabies as they can be difficult to identify. Dermatologists should maintain a low threshold for starting treatment for suspected scabies.

2. Permethrin Resistance May Be Increasing

In North America, topical permethrin remains the first-line therapy for scabies. However, a recent double-blind randomized controlled trial conducted in Austria (n = 110) demonstrated significantly lower cure rates with three consecutive applications of permethrin (n = 14/52 participants, 27%) compared to benzyl benzoate 25% (n = 47/54 participants, 87%, p<0.0001).[3] This discrepancy may be due to benzyl benzoate being more ovicidal than permethrin as there was not a repeat application of either treatment on day seven of the trial, which is a common practice with permethrin in clinical settings (refer to **Tables 1 and 2** for a summary of the treatments).

3. Consider Oral Ivermectin Earlier in Select Cases

Oral ivermectin (200 µg/kg/dose, two doses spaced 7–14 days apart) is an effective treatment option for adult and pediatric patients with extensive involvement, crusted scabies, poor adherence to topical therapies, and/or in institutional settings. A 2024 meta-analysis found lower treatment failure rates with two doses (7.1%) versus one dose (15.2%).[4] Additionally, a 2019

Component	Regimen	Notes
Oral Ivermectin	Administer 200 mcg/kg on days 1, 2, 8 (moderate); add days 9, 15 (severe); up to 7 doses total.	Usually used in conjunction with topical treatment.
Topical Permethrin 5% cream or lotion	No consensus on frequency. Typically applied on the same days as oral ivermectin.	Apply to entire body, including scalp, temples, and under nails (avoid the face).
Keratolytics (e.g., 10% urea lotion or 3% salicylic acid cream)	Apply on non-permethrin days then on a regular basis once clear.	Aids penetration of topical therapy by removing thick crusts. *Dispose of once treatment is complete to reduce cross-contamination.*
Environmental Control	Wash bedding/clothes in extra hot water; disinfect surfaces on a regular basis. Patient should be in isolation with strict contact precautions and essential visitors only until clear.	For patients in long-term care, the charge nurse and/or infection control team should be promptly notified—ideally via both urgent written and verbal communication—to coordinate outbreak prevention and contact tracing.
Empiric Treatment of Close Contacts	Permethrin and/or ivermectin, depending on feasibility.	Close contacts, including asymptomatic individuals, should be treated simultaneously. Healthcare workers (and their household contacts) with close, unprotected exposure to patients with crusted scabies should receive empiric treatment, regardless of symptoms.

Table 2. Crusted Scabies Treatment (Centers for Disease Control Protocol)[8,10]; *courtesy of Patrick Fleming, BSc (Nutrition), MSc (Community Health), MD, FRCPC.*

French study did not identify any new safety signals in children <15 kg, with mild adverse events in 4% of cases and an 85% cure rate.[5]

4. All Close Contacts Must Be Treated Simultaneously

Treatment failure is frequently due to reinfestation from untreated close contacts. All household members, sexual partners, and other close contacts must be treated concurrently to prevent recurrence.[6] Asymptomatic close contacts are common sources of reinfestation and must also be treated.[2] Because disclosure can be socially stigmatizing, it is important to provide clear education on the rationale for empiric treatment of asymptomatic close contacts—emphasizing its role in preventing reinfestation and protecting household members.

5. Environmental Decontamination is Often Inadequate

Even with optimal pharmacologic therapy, failure to implement environmental decontamination can result in reinfestation. *Sarcoptes scabiei* can survive off-host for up to 2–3 days.[7] Bedding, clothing, towels, and upholstered surfaces can act as reservoirs, especially in cases of crusted scabies. Patients should be advised to wash exposed items in hot water and dry them using high heat. Non-washable items should be sealed in plastic bags for at least 72 hours.[8] Unfortunately, many practitioners underemphasize these steps during routine care, contributing to persistent household infestation.

6. Crusted Scabies Requires Aggressive Treatment

Crusted scabies, a highly contagious and often underrecognized variant, is associated with a heavy mite burden. It occurs most often in patients who are immunocompromised, elderly, or living with advanced dementia.[9,10] Standard care involves oral ivermectin (200 µg/kg) given on multiple days (e.g., days 1, 2, 8, with optional doses on days 9, 15), combined with topical permethrin 5% (left on for 8–14 hours), which is often applied concurrently and on days when oral therapy is not given.[7,8] The use of keratolytic agents, such as 10% urea lotion, is critical to facilitate topical drug penetration through hyperkeratotic crusts.[6]

In institutional settings, patients with scabies should be placed on strict contact precautions. Given the high attack rate of crusted scabies, prophylactic treatment is recommended for asymptomatic healthcare workers—and their household contacts—if they were not fully protected. Crusted scabies constitutes a local public health emergency. Timely diagnosis and aggressive management are critical to preventing outbreaks and minimizing morbidity.

7. Persistent Pruritus and Nodules Are Not Always Treatment Failures

Post-scabetic pruritus can persist for many weeks or months after mite eradication and is not necessarily indicative of active infestation.

Treatment of post-scabetic pruritus may include fragrance-free emollients, topical 1% pramoxine hydrochloride, topical corticosteroids, and/or oral antihistamines. Nodular scabies, often affecting the axillae or scrotum, may persist and require intralesional corticosteroids or, in select cases, systemic agents such as a short course of prednisone.[9] When in doubt, there should be a very low threshold for re-treatment of suspected scabies cases and their close contacts.

8. Beware of Misdiagnosis—Especially in Eczematous Skin

Scabies is often misdiagnosed as eczema, especially in adults and children with atopic dermatitis. A high index of suspicion is warranted when the following features are present:

- Severe nocturnal pruritus.
- Eczema unresponsive to typical therapy.
- Multiple household members are affected.
- Pruritic nodules on the genitals, breasts, and/or axillae.
- Risk factors (e.g., long-term care resident or in crowded environments).

9. Spinosad: A Promising New Topical Agent

Topical spinosad 0.9% is a neurotoxin that has shown promise in the treatment of scabies. In two randomized, double-blind, vehicle-controlled trials involving over 500 participants, a single 10-minute application of spinosad resulted in a complete cure rate of 78.1% by Day 28, compared to 36.1% in the vehicle group.[11] Complete cure was defined as the resolution of all symptoms and skin lesions, absence of new lesions, negative dermoscopic findings, and no requirement for reapplication. The treatment was well-tolerated with low rates of irritation. No cases of resistance were reported.

Spinosad does not require overnight application. It is applied to dry skin, allowed to dry for 10 minutes, and rinsed off after 6 hours, an approach that may improve adherence. Although not yet available in Canada, spinosad may offer a well-tolerated, effective, and potentially more patient-centred treatment for scabies.

Conclusion

Scabies remains a significant global public health concern. Community dermatologists should be familiar with standardized diagnostic criteria, recognize atypical and high-burden presentations, and stay informed about evolving resistance patterns. Treatment should extend beyond the index patient to include all close contacts and the environment. As treatment failures and resistance become more common, agents such as oral ivermectin and topical spinosad may play a greater role in routine practice.

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