

Scabies (Sarcoptic Mange) — Symptoms and Treatment

[See online here](#)

Many people have heard of the seven-year itch, but what is it actually? You know the parasitic disease under the medical term scabies. CAVE: In 25%, scabies are initially misdiagnosed! The cause of the severe itching is *Sarcoptes scabiei* - the itch mite. In the following article, you can read what every physician should know about the pathophysiology, diagnosis and treatment.



Definition

It is a contagious superficial skin infection by the mite *sarcoptes scabiei*.

It is a transmittable ectoparasite infection characterized by superficial burrows intense pruritus and secondary infection.

Epidemiology

Has a prevalence of 4-10% in epidemic areas.

Over 300 million cases have been reported worldwide with nodular scabies being more

common among children.

Risk factors

There are more common in institutions that are more than 30 years old, have a population of more than 120 beds and a beds: workers ratio of more than 10:1.

Pathophysiology of Scabies

The parasite is transmitted via three main mechanisms:

1. **Direct transmission of human to human via direct body contact:** playing children, bed warmth and intercourse are considered the main exposition risks.
2. **Environmental transmission of mites from dust and fomites as the parasite survive for 2-5 days** outside the human body at room temperature and pressure.
3. **Zoophilic transmission is rare.**

After mating, the 0.3 - 0.4 mm large female mites dig into the horny layer of the epidermis, where they form tunnel-like ducts for the deposition of their eggs. A few days later, they die there. 3 weeks after egg deposition, the mite grubs emerge from the eggs and then drill back to the skin surface. The life-cycle repeats.

The infection takes the form of:

- Initial infection: sensitization occurs in several weeks.
- Reinfestation: patient is already sensitized, and pruritus occurs within 24 hours. In immunocompromised patients, there is an imminent risk of developing hyperkeratotic/ crusted scabies

Symptoms and Diagnosis of Scabies



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A **severe nocturnal itching** is typical for scabies. This itching is caused by the mite

antigens, which are released during the decay of the mite bodies. As a clinical correlation of the mite ducts, convoluted and partially palpable skin efflorescences can be found. Later, papules and vesicles develop. Mainly, warm body regions with little horny skin are affected. This includes the **mammilla region, the interdigital folds, the male genital, the axillary folds** and the **wrists**. Via scratching, **secondary efflorescences** like excoriations, crusts, and eczema formation develop. **Bacterial superinfections** of the [skin](#) can occur as a complication.

Note: Predilection sites of the scabies should be remembered for exams!

Characteristic primary and secondary efflorescences at scabies

Primary efflorescences have a comma or dot shape. Straight efflorescences are mostly scratching marks!

Primary Efflorescences	Secondary Efflorescences
Comma-like or irregularly convoluted mite ducts	Crusts
Papules	Scratching defects
Vesicles	Impetigo
	Rash

Source: [Robert Koch Institute](#)

Latency between infection and the onset of the symptoms amounts to roughly **3 weeks** (see above: grub hatching); thus, one should ask for possibly previous expositions within this period of time in medical history (e.g. vacation). **The attack of several persons within a family or a social facility (e.g. kindergarten, hospital wards) is especially suspicious.**

For detection of scabies, dermatoscopy (detection of the mite ducts) and microscopy are appropriate measures. Skin samples for microscopic examination are gained via tape pull-off or abrasion.

Scabies norvegica

The massive mite infestation at immune suppressed patients ([AIDS](#), long-term glucocorticoid/cytostatic therapy, leukemia, DM) is referred to as Scabies norvegica. Due to the decreased immune reaction, there is no or only a slight itching. With **dirty-brown papules, bark formation and desquamation**, the skin is ichthyosiform.

Psychiatric differential diagnosis delusional parasitosis

Especially in older patients with nocturnal pruritus, delusional parasitosis should be excluded. Also in the context of organic psychoses (e.g. at alcohol deprivation delirium or exsiccosis), this **chronic tactile hallucinosis** often occurs, whereas the patient is convinced that animals or insects live under his skin.

Therapy of Scabies: The Best Medication Has No Effect Without Compliance!

The three main pillars of successful therapy of scabies are hygienic measures, medicamentous therapy, and, most of all, the compliance of the affected person. The

first-resort agent is the antiscabietic agent **permethrin**. As a crème, it is applied to the whole integument including fingernails and the tip of the toes. Further options are e.g. benzylbenzoate, ivermectin and allethrin. In order to avoid an auto-re-infection, clothes, bedding and towels have to be changed and washed daily during therapy.

Important Final Fact about Scabies

Outside of the human body, the mites survive no more than 2 – 4 days at room temperature.

References

Communicable Disease Center (U.S.). (1967). *Scabies*. Atlanta, Ga.

Kramer, W. L., & Mock, D. E. (1996). *Scabies*. Manhattan, Kan: Cooperative Extension Service, Kansas State University.

New Zealand. (2011). *Scabies*. Wellington, N.Z.: Ministry of Health.

Oklahoma. Acute Disease Service. (2013). *Scabies*. Oklahoma State Department of Health.

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