

Scabies

Scabies (from the Latin **scabere**: to scratch oneself) is an **infectious parasitic skin disease** caused by the female itch mite (*Sarcoptes scabiei* var. *hominis*). This disease manifests by itching and the appearance of scrapes, blotches, and spots on the skin. It is most commonly transmitted in groups where people live in close contact. It is transmitted by skin contact, sex with an infected person, or contact with a contaminated item. The infection usually shows within 4 to 6 weeks. In repeated infections, however, the disease can appear within 24 hours.

Infectious agent

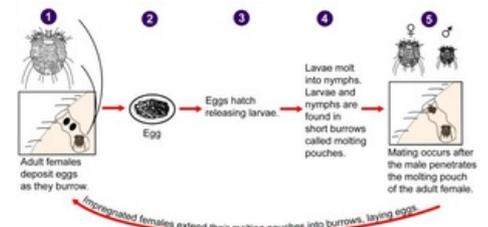
The pathogen is the approximately 0.5mm small **itch mite** from the family *Sarcoptidae*. It is an obligate human parasite (it only affects humans). The female burrows into the keratinised layer of the epidermis and creates tunnels, usually in places where the skin is very thin and soft. In the ends of the tunnels she lays **40 to 50 eggs**, from which larvae later hatch. After 2 to 3 weeks they mature into adult individuals, but only a tenth of the eggs gets to this stage. The lifespan of one itch mite is up to 5 weeks, and in advantageous conditions, several hundred individuals can develop from one mite. The itch mites spend their entire lives on the host; they can survive approximately 3 days outside of the skin. They die in direct sunlight, dry environments, and in temperatures below freezing.



Itch mite

Transmission

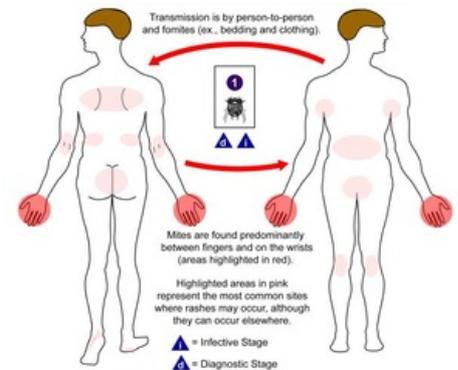
Transmission happens via prolonged **contact with an infected person**. Less commonly the cause is contact with a contaminated item, for example the bedsheets of an infected person. Low level of hygiene (e.g. in hostels, hotels, social care places, between homeless people) aids the spread of this disease, but it can appear anywhere regardless of age, gender, race, or social status. It is not transmitted by short skin-to-skin contact, such as a handshake.



Life cycle

Signs

Scabies is characterised predominantly by itching and a skin rash. The itching is most persistent at night, when the mites are most active. The rash most commonly appears between fingers and toes, in the genital area, the buttocks, or breasts around the areolas, almost never on the face or scalp. It has the look of pinkish to greyish tunnels and hives similar to a mosquito bite. These symptoms appear 4 to 6 weeks after infection. In repeated infections, the disease may appear much faster, within 24 hours. However, there are cases when the manifestation has happened after several months to years. In an area injured by scratching, excoriation and scabs appear. Wounds that have been scratched open can acquire a secondary bacterial infection, which can thus lead to pyoderma.



Rash areas

Specific forms of scabies

- *Scabies norvegica* (norwegian scabies) - In older people or immunocompromised patients, caused for example by HIV or cancer, a specific form of scabies can develop. It is characterised by a thick crust on the skin, which doesn't itch, but can contain several thousand mites. This form is treatable with great difficulty, because the crust prevents the sulphur ointments from reaching the infected lower levels of skin.
- *Clean scabies* - It affects people with a high level of hygiene. Only occasional skin signs are present, and the main symptom is strong nightly itching.
- *Scabies nodularis* - These are intensely itchy red nodules. They appear as a result of an enhanced immune response.

Treatment

A dermatologist directs the treatment. Scabies can be treated by:

- Permethrin 5% - one application per 12 hours
- Sulphur ointments - 20% vaseline in adults, 5% in children. Applied for 3 successive days.

It is necessary to apply the ointment from the chin to the tips of the fingers and toes after washing and drying the skin.

Hygiene measures that stop re-infestation and the spread of infection are important:

- It is necessary to wash and boil the bedsheets, clothes, and towels.

- Beds must be properly vacuumed; mattresses and clothes that cannot be boiled must be sprayed with a suitable insecticide.
- People who are in contact with the patient and sex partners must also be treated alongside the patient.

Prevention

The only prevention is respecting hygiene measures, washing hands thoroughly, not using others' toiletries, towels, or bedsheets, and regularly washing and ironing the bedsheets.

Spread

Mites from the Sarcoptidae family are wide-spread worldwide.

- Scabies is under strict epidemiological rules, and dermatologists are required by law to notify the public health office.
- In Czechia, scabies is the most common parasitic disease.
- It mostly affects people over 75 and children under 15.

Links

Bibliography

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- KUKLOVÁ, Ivana. *Parazitární onemocnění kůže* [lecture for subject Dermatovenerologie, specialization Všeobecné lékařství, 1. LF Univerzita Karlova]. Praha. 7.11.2016. Available from <<http://kozni.lf1.cuni.cz/prednasky-a-seminare>>.



Scabies on a hand