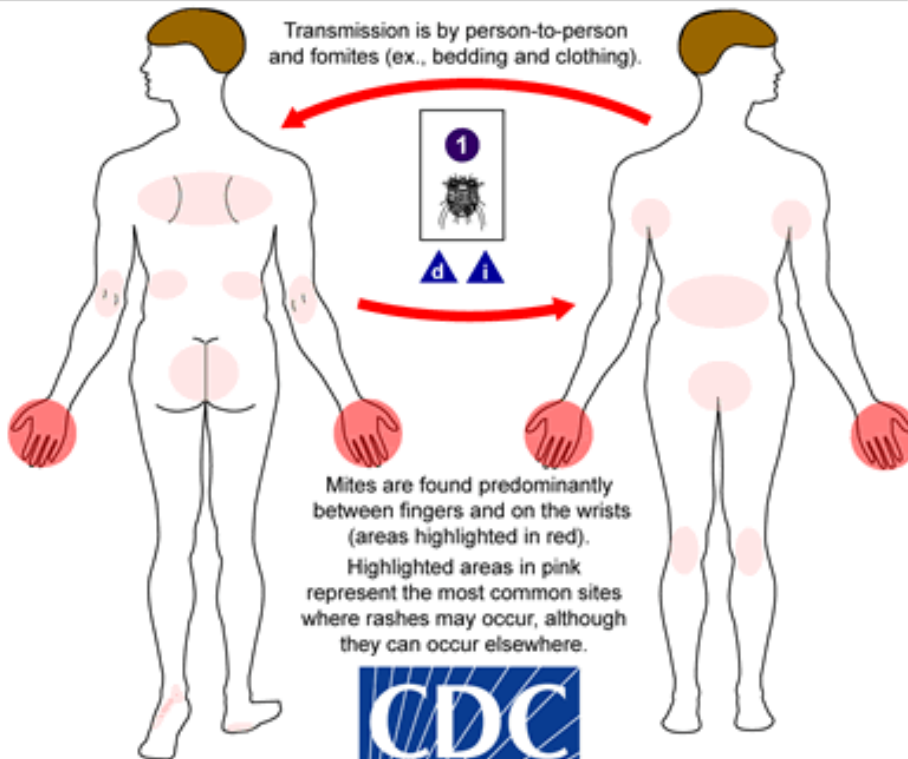
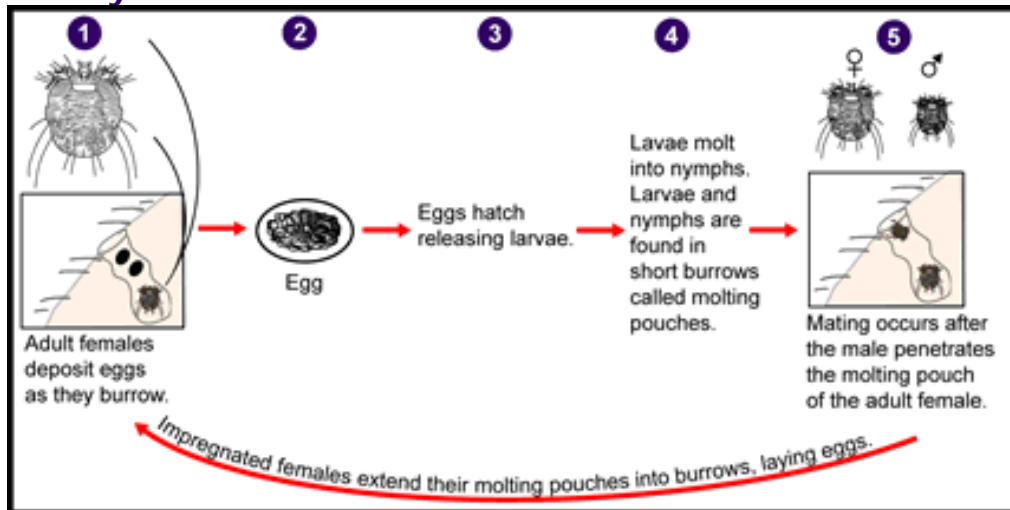


Scabies

Causal Agent:

Sarcoptes scabiei, human itch or mange mites, are in the arthropod class Arachnida, subclass Acari, family Sarcoptidae. The mites burrow into the skin but never below the stratum corneum. The burrows appear as raised serpentine lines up to several centimeters long. Other races of scabies may cause infestations in other mammals such as domestic cats, dogs, pigs, and horses. It should be noted that races of mites found on other animals may establish infestations in humans. They may cause temporary itching due to dermatitis but they do not multiply on the human host.

Life Cycle:



i = Infective Stage
d = Diagnostic Stage

Sarcoptes scabiei undergoes four stages in its life cycle; egg, larva, nymph and adult. Females deposit eggs at 2 to 3 day intervals as they burrow through the skin ❶. Eggs are oval and 0.1 to 0.15 mm in length ❷ and incubation time is 3 to 8 days. After the eggs hatch, the larvae migrate to the skin surface and burrow into the intact stratum corneum to construct almost invisible, short burrows called molting pouches. The larval stage, which emerges from the eggs, has only 3 pairs of legs ❸, and this form lasts 2 to 3 days. After larvae molt, the resulting nymphs have 4 pairs of legs ❹. This form molts into slightly larger nymphs before molting into adults. Larvae and nymphs may often be found in molting pouches or in hair follicles and look similar to adults, only smaller. Adults are round, sac-like eyeless mites. Females are 0.3 to 0.4 mm long and 0.25 to 0.35 mm wide, and males are slightly more than half that size. Mating occurs after the nomadic male penetrates the molting pouch of the adult female ❺. Impregnated females extend their molting pouches into the characteristic serpentine burrows, laying eggs in the process. The impregnated females burrow into the skin and spend the remaining 2 months of their lives in tunnels under the surface of the skin. Males are rarely seen. They make a temporary gallery in the skin before mating.

Transmission occurs by the transfer of ovigerous females during personal contact. Mode of transmission is primarily person to person contact, but transmission may also occur via fomites (e.g., bedding or clothing). Mites are found predominantly between the fingers and on the wrists. The mites hold onto the skin using suckers attached to the two most anterior pairs of legs.

Geographic Distribution:

Scabies mites are distributed worldwide, affecting all races and socioeconomic classes in all climates.

Clinical Features:

When a person is infested with scabies mites for the first time, there is usually little evidence of infestation for the first month (range 2 to 6 weeks). After this time and in subsequent infestations, people usually become sensitized to mites and symptoms generally occur within 1 to 4 days. Mites burrowing under the skin cause a rash, which is most frequently found on the hands, particularly the webbing between the fingers; the folds of the wrist, elbow or knee; the penis; the breast; or the shoulder blades. Burrows and mites may be few in number and difficult to find in some cases. A papular "scabies rash" may be seen in skin areas where female mites are absent, usually on the buttocks, scapular region and abdomen; this may be a result of sensitization from a previous infection. Most commonly there is severe itching, especially at night and frequently over much of the body, including areas where mites are undetectable. A more severe form of scabies that is more common among immunocompromised persons is called Norwegian scabies, characterized by vesicles and formation of thick crusts over the skin, accompanied by abundant mites but only slight itching. Complications due to infestation are usually caused by secondary bacterial infections from scratching.

Laboratory Diagnosis:

Most diagnoses of scabies infestation are made based upon the appearance and distribution of the rash and the presence of burrows. Whenever possible scabies should be confirmed by isolating the mites, ova, or feces in a skin scraping. Scrapings should be made at the burrows, especially on the hands between the fingers and the folds of the wrist. Alternatively, mites can be extracted from a burrow by gently pricking open the burrow with a needle and working it toward the end where the mite is living.

Diagnostic findings

- Microscopy

Treatment:

Several lotions are available to treat scabies. The treatment of choice is the topical use of

permethrin (5%). Crotamiton and ivermectin* are alternative drugs. Ivermectin* is taken orally and is effective for treating crusted scabies in immunocompromised persons. If a topical preparation is used, a second treatment with the same product may be necessary 7-10 days later. All clothes, bedding, and towels used by the infested person during the 2 days before treatment should be washed in hot water, and dried in a hot dryer.

* This drug is approved by the FDA, but considered investigational for this purpose.