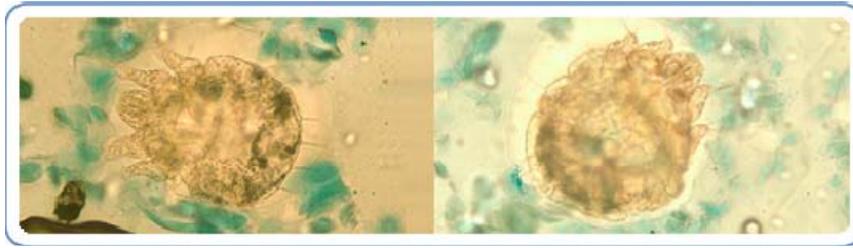


Scabies (*Sarcoptes scabiei* var. *hominis*)

The human itch mite.



Scabies mites burrow into the outermost layer of the skin. These burrows appear as tiny raised lines that are grayish or skin-colored and can be a centimeter or more in length.

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Infestation and Transmission

Scabies are **transmitted** almost always by direct, prolonged, skin-to-skin contact with an infested person. An infested person can spread scabies even if he/she has no symptoms. Humans are the source of scabies infestations. Animals do not spread human scabies.

The first time a person is infested with scabies mites, it can take up to two months for symptoms to appear. If a person has had scabies before, symptoms appear much sooner (1-4 days) after becoming infested. An infested person can transmit scabies to others until being successfully treated and mites and eggs are all destroyed.

Those **most at risk** for scabies are household members or sexual partners of a person infested with scabies. Institutions such as nursing homes, extended-care facilities, prisons, and other locations with close or crowded living conditions are often sites of scabies outbreaks. Child care facilities can also be a common place of scabies infestations.

Some immunocompromised, elderly, disabled, or debilitated persons are at risk for a severe form of scabies called crusted, or Norwegian, scabies. Persons with crusted scabies have thick crusts of skin that contain large numbers of scabies mites and eggs (up to 2 million per patient). The mites in crusted scabies are not more virulent than in non-crusted scabies, just much more numerous. Because of the large numbers of mites, persons with crusted scabies are very contagious to others. In addition to spreading scabies through brief direct skin-to-skin contact, persons with crusted scabies can transmit scabies indirectly by shedding mites that infest items such as their clothing, bedding, and furniture.

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More scabies information available at: http://www.cdc.gov/parasites/scabies/gen_info/index.html

Symptoms

Common Symptoms include itching and skin rash. The itching can become severe, especially at night. The rash can appear as a pimple-like rash. Itching and rash may affect much of the body or be limited to common sites such as:

- Between the fingers
- Wrists
- Elbow
- Armpit
- Penis
- Nipple
- Waist
- Buttocks
- Shoulder blades

Treatment

In addition to the infested person, treatment is also recommended for household contacts, sexual contacts, and other contacts that might have had prolonged skin-to-skin contact such as care givers.

Products used to treat scabies are called scabicides. Scabicides are only available with a doctor's prescription. Scabicides include lotions or creams that should be applied to all areas of the body from the neck down to the feet and toes (for infants and young children, scabicide lotions and creams should be applied to the head and neck). Follow all product instructions closely, including directions given for applying the cream or lotion. For example, if the directions say to apply the treatment everywhere on your body, that means everywhere, including: between fingers and toes (including beneath fingernails and toenails), in skin folds, in the cleft of the buttocks, on the genitals, and in the belly button.

Because the symptoms of scabies are due to a hypersensitivity reaction to mites and their feces, itching still may continue for several weeks after treatment even if all the mites and eggs are killed. If itching still is present more than 2 to 4 weeks after treatment or if new burrows or pimple-like rash lesions continue to appear, retreatment may be necessary.

Skin sores that become infected should be treated with an appropriate antibiotic prescribed by a doctor.

Scabies Medications

The following medications for the treatment of scabies are available only by prescription.

1. **Permethrin cream 5%** -- Brand name product: Elimite*
 - Permethrin is approved by the US Food and Drug Administration (FDA) for the treatment of scabies in persons who are at least 2 months of age. Permethrin is a synthetic pyrethroid similar to naturally occurring pyrethrins which are extracts from the chrysanthemum flower. Permethrin is safe and effective when used as directed. Permethrin kills the scabies mite and eggs. Permethrin is the drug of

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choice for the treatment of scabies. Two (or more) applications, each about a week apart, may be necessary to eliminate all mites, particularly when treating crusted (Norwegian) scabies.

2. **Crotamiton lotion 10% and Crotamiton cream 10%** -- Brand name products: Eurax*; Crotan*
 - Crotamiton is approved by the US Food and Drug Administration (FDA) for the treatment of scabies in adults; it is considered safe when used as directed. Crotamiton is not FDA-approved for use in children. Frequent treatment failure has been reported with crotamiton.

3. **Lindane lotion 1%** -- Brand name products: None available
 - Lindane is an organochloride. Although FDA-approved for the treatment of scabies, lindane is not recommended as a first-line therapy. Overuse, misuse, or accidentally swallowing lindane can be toxic to the brain and other parts of the nervous system; its use should be restricted to patients who have failed treatment with or cannot tolerate other medications that pose less risk. Lindane should not be used to treat premature infants, persons with a seizure disorder, women who are pregnant or breast-feeding, persons who have very irritated skin or sores where the lindane will be applied, infants, children, the elderly, and persons who weigh less than 110 pounds.

4. **Ivermectin** -- Brand name product: Stromectol*
 - Ivermectin is an oral antiparasitic agent approved for the treatment of worm infestations. Evidence suggests that oral ivermectin may be a safe and effective treatment for scabies; however, ivermectin is not FDA-approved for this use. Oral ivermectin has been reported effective in the treatment of crusted scabies; its use should be considered for patients who have failed treatment with or who cannot tolerate FDA-approved topical medications for the treatment of scabies. The dosage of ivermectin is 200 mcg/kg orally. It should be taken on an empty stomach with water. A total of two or more doses at least 7 days apart may be necessary to eliminate a scabies infestation. The safety of ivermectin in children weighing less than 15 kg and in pregnant women has not been established.

Prevention and Control

Scabies is prevented by avoiding direct skin-to-skin contact with an infested person or with items such as clothing or bedding used by an infested person. Scabies treatment usually is recommended for members of the same household, particularly for those who have had prolonged skin-to-skin contact. All household members and other potentially exposed persons should be treated at the same time as the infested person to prevent possible re-exposure and re-infestation.

Bedding and clothing worn or used next to the skin anytime during the 3 days before treatment should be machine washed and dried using the hot water and hot dryer cycles or be dry-cleaned. Items that cannot be dry-cleaned or laundered can be disinfested by storing in a closed plastic bag for several days to a week. Scabies mites generally do not survive more than 2 to 3 days away from human skin. Children and adults usually can return to child care, school, or work the day after treatment.

Persons with crusted scabies and their close contacts, including household members, should be treated rapidly and aggressively to avoid outbreaks. Institutional outbreaks can be difficult to control and require a rapid, aggressive, and sustained response.

Rooms used by a patient with crusted scabies should be thoroughly cleaned and vacuumed after use. The use of pesticide sprays or fogs generally is unnecessary and is discouraged.

Institutional Settings

Scabies outbreaks have occurred among patients, visitors, and staff in institutions such as nursing homes, long-term care facilities, and hospitals. Such outbreaks frequently are the result of delayed diagnosis and treatment of crusted (Norwegian) scabies in debilitated, immunocompromised, institutionalized, or elderly persons. The characteristic itching and rash of scabies can be absent in such persons, leading to frequent misdiagnosis and delayed or inadequate treatment and continued transmission. Scabies often is not recognized until it begins to appear among staff and other patients at the institution.

To prevent the spread of scabies in institutional settings early detection, treatment, and implementation of appropriate isolation and infection control practices are essential. New patients and employees should be screened carefully and evaluated for any skin conditions that could be compatible with scabies. Appropriate isolation and infection control practices (e.g. gloves, gowns, avoidance of direct skin-to-skin contact, etc.) should be used when providing hands-on care to patients who might have scabies.

More information regarding scabies and institutional settings is available at:
http://www.cdc.gov/parasites/scabies/health_professionals/institutions.html



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