

## Scabies Infestation

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Scabies is an infestation of the skin by the human itch mite (*Sarcoptes scabiei* var. *hominis*) and can be present in patients receiving care in the home. The microscopic scabies mite burrows into the upper layer of the skin where it lives and lays its eggs. On a person, scabies mites can live for as long as 1 to 2 months. Away from human skin, scabies mites usually do not survive more than 48 to 72 hours and will die if exposed to a temperature of 50 °C (122 °F) for 10 minutes. Scabies mites are a common condition worldwide affecting people of all races and socioeconomic levels in all climates (Centers for Disease Control and Prevention [CDC], 2010a).

The severity of the scabies infestation is directly related to the number of mites residing on the skin and the length of time between the initial infestation and subsequent diagnosis and treatment. There are two forms of scabies infestations; noncrusted (also referred to as typical or classic scabies) and crusted (Norwegian). A patient with crusted scabies is considered highly contagious and has thick crusts of skin that contain up to 2 million scabies mites and eggs. A patient with noncrusted scabies may only be infested with 10 to 15 mites. Crusted scabies is more common in the immunocompromised, such as the debilitated elderly or a person receiving steroids or immunosuppressive therapy. If diagnosis and treat-

ment are delayed, the number of live mites multiply resulting in heavier infestations.

The microscopic scabies mite is almost always transferred by the impregnated female through direct, prolonged, skin-to-skin contact with a person who already is infested. Animals do not spread human scabies. The longer a person has skin-to-skin exposure with a person with scabies, the greater is the risk for transmission. Generally, a quick hug or handshake with



When a person is infested with scabies mites for the first time, symptoms may not appear for up to 4 to 6 weeks after becoming infested. If a person has had scabies before, they

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a person with noncrusted scabies would be considered low-risk for transmission; whereas, holding a patient's hand for an extended period of time, such as when providing spiritual support for a hospice patient, or performing bathing and personal care services would be considered activities at higher risk for transmission. In a person with crusted scabies, even a brief skin-to-skin contact, such as a handshake, could result in transmission. Transmission may also occur through indirect contact with shedding mites on contaminated shared items, such as furniture, clothing, towels, or bedding used by a person with scabies. This can occur much more readily when the infested person has crusted scabies, due to the large numbers of mites.

become sensitized to the mite and symptoms generally occur much sooner after the exposure (i.e., within 1–4 days). It is important to remember that an infested person can spread scabies even if he or she does not have any symptoms. The most common symptoms of noncrusted scabies are severe itching (pruritus), especially at night, and a pimple-like (papular) itchy skin rash. Tiny burrows can sometimes be seen on the skin that are caused by the female scabies mite tunneling just beneath the surface of the skin. These burrows appear as tiny raised and zigzag or "S" pattern of grayish-white or skin-colored lines on the skin surface. The mite burrows under the skin causing a rash, which is most frequently found on the hands, particularly the

webbing between the fingers; the folds of the wrist, elbow, or knee; waist; beltline; armpit; the penis; the breast; and/or the shoulder blades. The head, face, neck, palms, and soles often are involved in infants and very young children, but usually not adults and older children. Because mites are often few in number in a person with noncrusted scabies, these burrows may be hard to see without a magnifying glass. The rash also can include tiny blisters (vesicles) and scales resulting in skin sores. A person with crusted scabies may not show the usual signs and symptoms of noncrusted scabies, such as the characteristic rash or itching, and may develop vesicles and formation of thick crusts over the skin, accompanied by abundant mites. Complications of scabies are usually caused by secondary bacterial skin infections resulting from scratching (CDC, 2013).

A high index of suspicion should be maintained in patients with undiagnosed skin rashes and conditions that may be scabies, even if the characteristic signs or symptoms of scabies are absent (e.g., no itching). New patients and employees should be screened carefully and evaluated for any skin conditions that could be compatible with scabies. The onset of scabies in a staff person who has had scabies before can be an early warning sign of undetected scabies in a patient. A diagnosis of a scabies infestation usually is made based on the customary appearance and distribution of the rash and the presence of burrows. Skin scrapings



should be obtained and examined carefully by a person who is trained and experienced in identifying scabies mites. It is important to remember that a person can still be infested even if mites, eggs, or mite fecal matter (scybala) cannot be found.

Prescription scabicide medication is the only treatment for human scabies (or prophylaxis of a person who has had skin-to-skin contact with a person with scabies) and includes: Permethrin cream 5% (Elimite), Crota-miton lotion 10% and Crota-miton cream 10% (Eurax; Crotan), Lindane lotion 1%, and Ivermectin (Stromectol), although not FDA-approved for this use. When prescribed by a physician, all household members and other potentially exposed persons should be treated at the same time as the infested person to prevent possible reexposure and reinfestation (CDC, 2013).

The occurrence of even a single, verified case of scabies should prompt investigation and notification of key clinical leaders and administration, and the local health department when an outbreak may have community implications, including possible spread by patients or staff to other institutions (CDC, 2010b). Contact precautions should be followed by staff until 24 hours after the

first application of scabicide (Siegel et al., 2007). Appropriate infection control measures (e.g., using a barrier under the nursing bag and equipment and supplies brought into the home, hand hygiene using soap and water before leaving the home, safe handling of used bed linen) should be followed when providing care in the home to a patient who may have scabies. Contact tracing to determine others potentially exposed should be performed in a timely fashion to detect other cases of scabies. Early detection, treatment or prophylaxis, and implementation of appropriate isolation and infection prevention and control practices are essential in preventing the transmission of scabies. ▲

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The author declares no conflicts of interest.

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