

# Scabies

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## Abstract

Scabies is a contagious skin infestation by the mite *Sarcoptes scabiei*. The most common symptoms are severe itchiness and a pimple-like rash. Occasionally tiny burrows may be seen in the skin. When first infected, usually two to six weeks are required before symptoms occur. If a person develops a second infection later in life, symptoms may begin within a day. These symptoms can be present across most of the body or just certain areas such as the wrists, between fingers, or along the waistline. The itch is often worse at night. Scratching may cause skin breakdown and an additional bacterial infection of the skin.

## Introduction

Scabies is caused by infection with the female mite *Sarcoptes scabiei*. Crowded living conditions such as those found in child care facilities, group homes, and prisons increase the risk of spread. Areas with a lack of access to water also have higher rates of disease. Crusted scabies is a more severe form of the disease. The mite is very small and usually not directly visible. Diagnosis is based on the signs and symptoms [1-3].

Scabies is contagious and can be contracted through prolonged (as opposed to momentary) physical contact with an infected person. This includes sexual intercourse, although a majority of cases are acquired through other forms of skin-to-skin contact. Less commonly, scabies infestation can happen through the sharing of clothes, towels, and bedding, but this is not a major mode of transmission; individual mites can only survive for two to three days, at most, away from human skin. As with lice, a latex condom is ineffective against scabies transmission during intercourse, because mites typically migrate from one individual to the next at sites other than the sex organs. Healthcare workers are at risk of contracting scabies from patients, because they may be in extended contact with them [4,5].

Scabies is one of the three most common skin disorders in children, along with tinea and pyoderma. As of 2010 it affects approximately 100 million people (1.5% of the population) and is equally common in both genders. The mites are distributed around the world and equally infect all ages, races, and socioeconomic classes in different climates. Scabies is more often seen in crowded areas with unhygienic living conditions. Globally as of 2009, an estimated 300 million cases of scabies occur each year, although various parties claim the figure is either over- or underestimated. About 1-10% of the global population is estimated to be infected with scabies, but in certain populations, the infection rate may be as high as 50-80% [1,6].

The symptoms are caused by an allergic reaction of the host's body to mite proteins, though exactly which proteins remains a topic of study. The mite proteins are also present from the gut, in mite feces, which are deposited under the skin. The allergic reaction is both of the delayed (cell-mediated) and immediate (antibody-mediated) type, and involves IgE (antibodies, it is presumed, mediate the very rapid symptoms on reinfection). The allergy-type symptoms (itching) continue for some days, and even several weeks, after all mites are killed. New lesions may appear for a few days after mites are eradicated. Nodular lesions from

scabies may continue to be symptomatic for weeks after the mites have been killed [7-9].

Scabies may be diagnosed clinically in geographical areas where it is common when diffuse itching presents along with either lesions in two typical spots or there is itchiness of another household member [9,10].

A definitive diagnosis is made by finding either the scabies mites or their eggs and fecal pellets. Searches for these signs involve either scraping a suspected area, mounting the sample in potassium hydroxide and examining it under a microscope, or using dermoscopy to examine the skin directly [11].

A number of medications are effective in treating scabies. Treatment should involve the entire household, and any others who have had recent, prolonged contact with the infested individual. Options to control itchiness include antihistamines and prescription anti-inflammatory agents. Bedding, clothing and towels used during the previous three days should be washed in hot water and dried in a hot dryer [10].

In conclusion: the simultaneous treatment of all close contacts is recommended, even if they show no symptoms of infection (asymptomatic), to reduce rates of recurrence. Since mites can survive for only two to three days without a host, other objects in the environment pose little risk of transmission except in the case of crusted scabies, thus cleaning is of little importance. Rooms used by those with crusted scabies require thorough cleaning [4,12].

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