



The Itchies & Scabies

By:

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Scabies

Scabies is an infestation of the skin by the mite *Sarcoptes scabiei*.



- **Classic** scabies typically manifests as an intensely pruritic eruption with a characteristic distribution. The sides and webs of the fingers, wrists, axillae, areolae, and genitalia are among the common sites of involvement.
- **Crusted** scabies, a less common variant that primarily occurs in the setting of reduced cellular immunity and is associated with a heavy mite burden, is characterized by thick scale, crusts, and fissures.

The diagnosis of scabies is confirmed through the detection of scabies mites, eggs, or feces with microscopic examination.

EPIDEMIOLOGY OF SCABIES

- Scabies is a relatively common infestation that can affect individuals of any age and socioeconomic status.
- The worldwide prevalence is estimated to be 200 million people, with wide variation in prevalence among individual geographic regions. A systematic review of population-based studies from various regions of the world (excluding North America) found prevalence estimates ranging from 0.2 to 71 percent, with the highest prevalences in the Pacific region and Latin America. Scabies is particularly common in resource-limited regions.
- Crowded conditions increase risk for scabies infestation.
- Epidemics can occur in institutional settings, such as long-term care facilities and prisons.

Scabies Life Cycle

- Female mites are larger than male mites and measure approximately 0.4 x 0.3 mm. After mating, female mites burrow into the epidermis (skin), a process facilitated by secretion of proteolytic enzymes that cause keratinocyte damage. Female mites continue to extend the burrow and lay two to three eggs per day before dying after four to six weeks. Larvae hatch in three to four days and molt three times within the burrow to reach adulthood.
- The mite burden in patients with **classic** scabies is generally low, limited to an average of 10 to 15 mites during an initial episode and approximately half as many with subsequent infestations. In contrast, patients with crusted scabies can have up to millions of mites on the body.
- In typical conditions (at room temperature and average humidity), mites can survive off a host for 24 to 36 hours.

TRANSMISSION OF SCABIES

- Transmission of scabies usually occurs through direct and prolonged skin-to-skin contact, as may occur among family members or sexual partners. Casual skin contact is unlikely to result in transmission.
- Transmission through fomites (eg, clothing, bedclothes, or other objects) used by a person with classic scabies is uncommon; however, fomite transmission is more likely to occur in the setting of crusted scabies due to a much higher parasite burden.
- True scabies infestation is not transmitted from animals to humans. The scabies mites responsible for animal scabies (ie, sarcoptic mange) belong to distinct subspecies and typically cannot reproduce in humans. Reactions to such mites are usually self-limited and resolve if contact with the affected animal ceases.

Classic Scabies vs Crusted Scabies

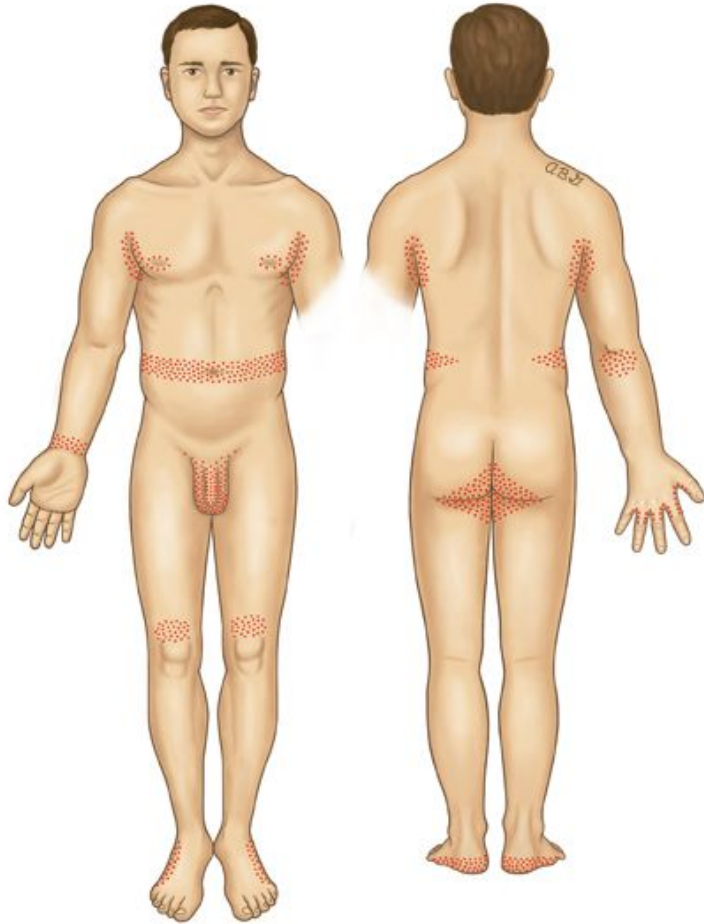
The major clinical variants of scabies are classic scabies and crusted scabies.

Classic scabies — The prominent clinical feature of classic scabies is pruritus (itching). It is often severe and usually worse at night. Pruritus results from a delayed-type hypersensitivity reaction to the mite, mite feces, and mite eggs. Symptoms typically begin three to six weeks after primary infestation. However, in previously infested patients, symptoms usually begin within one to three days after infestation, presumably because of prior sensitization.

Typical cutaneous findings are multiple small, erythematous papules, often excoriated. Burrows may be visible as 2 to 15 mm, thin, gray, red, or brown, serpiginous lines. Burrows are a characteristic finding but often are not visible due to excoriation or secondary infection. Miniature wheals, vesicles, pustules, and, rarely, bullae also may be present.

The distribution of cutaneous findings usually involves more than one of the following areas; rarely, scabies is localized to a single area.

Scabies distribution



Where to look for scabies...

- Sides and webs of the fingers
- Flexor aspects of the wrists
- Extensor aspects of the elbows
- Anterior and posterior axillary folds
- Periareolar skin (especially in women)
- Periumbilical skin
- Waist
- Male genitalia (scrotum, penile shaft, and glans)
- Extensor surface of the knees
- Lower buttocks and adjacent thighs
- Lateral and posterior aspects of the feet

Nodular Classic Scabies

- Nodular scabies is a less common manifestation of classic scabies.
- Nodular scabies is characterized by persistent, firm, erythematous, extremely pruritic, dome-shaped papules 5 or 6 mm in diameter.
- The groin, genitalia, buttocks, and axillary folds are the usual sites of involvement.

The nodules may represent a hypersensitivity reaction to prior or currently active scabies infestation.



Crusted Scabies

- Crusted scabies (also known as scabies crustosa, Norwegian scabies, Boeck scabies, or keratotic scabies) can occur in the presence of conditions that compromise cellular immunity, such as AIDS, human T cell lymphotropic virus type 1 (HTLV-1) infection, leprosy, and lymphoma. This variant may also occur in older adults and patients with Down syndrome. Crusted scabies may also accompany long-term use of topical corticosteroids. High numbers of scabies mites are present.
- Crusted scabies begins with poorly defined, erythematous patches that quickly develop prominent scale. Any skin area may be affected, but the scalp, hands, and feet are particularly susceptible. If untreated, the disease usually spreads inexorably and may eventually involve the entire integument. Scales become warty, especially over bony prominences. Crusts and fissures appear. The lesions are malodorous. Nails are often thickened, discolored, and dystrophic.
- Pruritus may be minimal or absent.

Crusted scabies

Itching may be absent!

They are past the itchy.



Complications

The fissures associated with crusted scabies provide a portal of entry for bacteria. This may lead to sepsis in older adults and immunocompromised patients. Streptococcal infections may lead to poststreptococcal glomerulonephritis or other complications.

You can have a superimposed infections since the cracked scabies skin allows entry of bacteria

Diagnosis of Scabies

The diagnosis of scabies is confirmed through the detection of the scabies mite, eggs, or fecal pellets (also known as "scybala") through microscopic examination.

However, since these findings are not always readily detected given the low number of mites in patients with classic scabies and microscopic examination is not always feasible, a presumptive diagnosis is sometimes made based upon a consistent history and physical examination.

Skin biopsies are not usually necessary and are reserved for difficult cases in which other disorders need to be excluded.

History and physical examination

The diagnosis of **classic** scabies should be suspected in patients with one or more of the following:

- Widespread itching that is worse at night, spares the head, and seems to be out of proportion to visible changes in the skin
- A pruritic eruption with characteristic lesions and distribution
- Other household members with similar symptoms

A diagnosis of **crusted** scabies should be suspected when the following features are present:

- Thick, crusted, fissured plaques
- Older adult or immunosuppressed patient

Crusted scabies



Crusted scabies in a patient with AIDS. Note the crusted papules and the white, linear burrows.

Scabies Preparation Test

- Performance of a skin scraping involves the sampling and microscopic examination of the epidermis from sites that may harbor scabies mites. In adults, the areas most likely to yield mites are between the fingers, sides of hands, flexural wrists, elbows, axillae, groin, breasts, and feet. The sensitivity of scabies preparation ranges from 46 to 90 percent; the specificity is 100 percent.
- Scrapings should be performed on skin lesions in multiple sites; burrows or erythematous papules are ideal. A blade (typically a number 15 blade) is used to vigorously scrape across the surface of the lesion sufficiently to remove a portion of the epidermis without inducing significant bleeding. A 3 mm disposable curette is an alternative tool that may be helpful for performing a scraping. Prior to scraping, a small amount of mineral oil is usually applied to the site or the blade to aid in removal of mites, scale, and debris.
- The specimen should be applied to a glass slide. Additional mineral oil can be added prior to placement of the coverslip. Application of potassium hydroxide (KOH) to the slide may be helpful for examination of specimens from suspected crusted scabies; the KOH will dissolve excess keratotic debris. The clinician then examines the specimen for scabies mites, eggs, or feces. In crusted scabies, large numbers of mites and eggs may be seen.

Scabies Tape Test

- Alternatively, a scabies preparation can be performed using a piece of transparent tape with a strong adhesive (eg, clear packing tape) rather than a blade. This procedure is called "the adhesive tape test." The tape is firmly applied to a skin lesion and then is rapidly pulled off. After applying the tape to a glass slide, the clinician utilizes a microscope to examine the tape for mites and eggs. An advantage of the adhesive tape test is the lack of need for specialized equipment other than a microscope. The procedure may also be useful in patients who cannot tolerate skin scrapings.

- Are blood tests helpful?

Blood tests are generally not indicated for the diagnosis of scabies. However, eosinophilia has been reported, particularly in crusted scabies, and investigation of the cause of persistent eosinophilia has led to the diagnosis of scabies in challenging cases

Treatment of Classic Scabies

Overview of anti-scabietic therapies – Scabies may be treated with topical or oral therapies. The major options for topical therapy include [permethrin](#) (preferred), benzyl benzoate, precipitated sulfur, [spinosad](#), and [ivermectin](#). Use of [lindane](#) has fallen out of favor due to risk for systemic toxicity. Oral ivermectin is available for systemic treatment.

Treatment of classic scabies – Classic scabies, the most common presentation of scabies, can be treated with either topical or oral therapy.

For patients with classic scabies, we suggest topical [permethrin](#) for initial treatment. Permethrin has a high efficacy and safety support the preferred use of permethrin therapy.

Oral [ivermectin](#) is an alternative initial treatment for nonpregnant adults who prefer oral treatment, cannot tolerate [permethrin](#), or are unable to apply topical therapy. Topical ivermectin is an additional option for topical therapy that has not been proven superior to permethrin therapy.

Treatment of Crusted Scabies

Treatment of crusted scabies – For patients with crusted scabies, we suggest combination therapy with [permethrin](#) and [ivermectin](#) rather than either therapy alone. The duration of treatment is dependent upon the severity of infestation.

I personally prefer oral Ivermectin, 1 MG for every 10 pounds of body weight.

Patient weighs 210 lbs, dose would be 21 mg, once a week for 4 weeks.

Hydrocortisone or other steroid creams for managing the itching symptoms. Benadryl also helps with the itches.

Recognition of cure and treatment failure – Signs of successful treatment include resolution of active skin lesions and nocturnal pruritus one week after the completion of treatment. However, some pruritus often persists for up to four weeks after successful treatment. Examples of causes of pruritus beyond this period include treatment failure, treatment-related skin irritation or contact dermatitis, reinfestation, and misdiagnosis.

Close contacts – The onset of symptoms may be delayed for several weeks after infestation. Thus, asymptomatic individuals who have been in close personal contact with a patient with classic scabies may have active scabies. Patients with confirmed scabies and close contacts should be treated simultaneously.

Environmental measures – Scabies mites typically cannot survive for more than two to three days when separated from human skin. Clothing or bedding items used within the preceding three days by the individual who is infested should be machine washed with hot water and machine dried with a heat cycle. Dry cleaning items or removing items from body contact for at least 72 hours is an alternative. Rooms used by individuals with crusted scabies should be cleaned and vacuumed.

Scabies in the institutional setting – Occurrences of scabies in institutional settings require prompt attention to minimize risk for transmission to other individuals. A rapid response is particularly important in the setting of crusted scabies.