

Scabies: Overview, Transmission, Symptoms and Prevention

Shameeran Salman Ismael^{1*} and Farhad Buzo Mikaeel²

1. Department of Medical Laboratory Sciences, College of Health Sciences/ University of Duhok, Duhok, Iraq
2. Department of Pathology and Microbiology, College of Veterinary Medicine/ University of Duhok, Duhok, Iraq

*Corresponding Author: shameeran.ismael@uod.ac

ABSTRACT

Sarcoptes scabiei is the common cause of scabies, a skin infestation. Localized cutaneous lesions are its defining feature. In 2017, the World Health Assembly included scabies to its list of neglected tropical illnesses. The purpose of this article was to educate the public about scabies, a common skin infestation, including its symptoms, diagnosis, prevention, and mode of transmission. We must raise awareness, obtain correct diagnoses, and begin treatment as soon as possible in order to control scabies and avoid its repercussions.

Keywords: Scabies, Skin Infestation, Mite, Ectoparasite

To cite this article: Ismael SS & FB Mikaeel. Scabies: Overview, Transmission, Symptoms and Prevention. Biological Times. 2026, January 5(1): 9.

Introduction

The *Sarcoptes scabiei* (*S. scabiei*) mite is the source of scabies, an infectious ectoparasitic infestation that affects humans [1,2]. Back in 2017, the World Health Assembly (WHO) included scabies on its list of neglected tropical illnesses [2]. As illustrated in Fig. 1, a mite is a small ectoparasite that is required. In [1]. This mite belongs to the phylum Arthropoda, class Arachnida, kingdom Animalia, and is host-specific [1, 2]. It is further divided into the order Astigmata, the superfamily Sarcoptoidae, the superorder Acariformes, and the family Sarcoptidae [3]. *S. scabiei* really burrows into the epidermis, the outer layer of human and animal skin [4]. Scabies is a widespread skin infestation that is particularly prevalent in communities experiencing economic hardship and in humid tropical climates [5, 6]. More than 300 million individuals worldwide are thought to experience this skin invasion each year [1, 7]. As a result, scabies remains a major global public health issue [8, 9].

Transmission

Sexual contact or close, prolonged skin-to-skin contact with an infected person are the two main ways that scabies is transmitted [11, 12]. Scabies can spread due to a number of factors, including migratory patterns, healthcare accessibility, lifestyle choices, hygiene standards, and population size [13, 14]. Scabies is more common in those with weakened immune systems and is characterized by irritation of the skin all over the body, shown in Fig. 2; severe itching, which is usually worse at night than throughout the day; and sores, particularly on the arms, legs, and torso. These may worsen and develop into crusted scabies [15, 16]. A topical permethrin cream applied to the skin and an oral medication called ivermectin are typically the most effective treatments for scabies [17]. When applied properly, a 5% permethrin lotion is an excellent treatment for scabies [18]. Before going to bed, apply the cream all over your body, let it sit for eight to fourteen hours, and then wash it off. Repeating this treatment one to two weeks later is crucial [19, 20]. Secondary bacterial infections should be treated with antibiotics. Local antibiotics include retapamulin, mupirocin, and fusidic acid. This article's goal was to inform readers on scabies, a prevalent skin infection, covering its signs and symptoms, screening, treatment, and mechanism of transmission. To manage scabies and prevent its consequences, we need to increase awareness, get accurate diagnosis, and start treatment right away.

Conclusion

The most common ectoparasitic skin infection worldwide is scabies, which is especially common in humid areas. We must raise awareness, obtain precise diagnoses, and begin treatment as soon as possible to control scabies and avoid repercussions.

References

- [1] Arora P, Rudnicka L, Sar-Pomian M, Wollina U, Jafferany M, Lotti T, Sadoughifar R, Sitkowska Z, Goldust M. Scabies: A comprehensive review and current perspectives. *Dermatol Ther.* 2020 Jul;33(4): e13746. doi: 10.1111/dth.13746. *Epub* 2020 Jul 6. PMID: 32484302.
- [2] Engelman D, Fuller LC, Steer AC. Consensus criteria for the diag nosis of scabies: A Delphi study of international experts. *PLoS Negl Trop Dis* 2018; 12(5): e0006549.
- [3] Zhang ZQ. Animal biodiversity: An outline of higher-level classification and survey of taxonomic richness (Addenda 2013). *Zootaxa.* 2013;3703:1–82. <https://doi.org/10.11646/zootaxa.3703.1.1>
- [4] Zahler M, Essig A, Gothe R, Rinder H. Molecular analyses suggest monospecificity of the genus *Sarcoptes* (Acar: Sarcoptidae). *International Journal for Parasitology.* 1999; 29(5): 759–766. [https://doi.org/10.1016/s0020-7519\(99\)00034-x](https://doi.org/10.1016/s0020-7519(99)00034-x)
- [5] Hengge UR, Currie BJ, Jäger G, Lupi O, Schwartz RA. Scabies: a ubiquitous neglected skin disease. *The Lancet. Infectious diseases.* 2006; 6(12), 769–779. [https://doi.org/10.1016/S1473-3099\(06\)70654-5](https://doi.org/10.1016/S1473-3099(06)70654-5)
- [6] Fischer K, Holt DC, Harumal P, Currie B. J, Walton SF, Kemp DJ. Generation and characterization of cDNA clones from *Sarcoptes scabiei* var. *hominis* for an expressed sequence tag library: identification of homologues of house dust mite allergens. *The American journal of tropical medicine and hygiene.* 2003; 68(1): 61–64.
- [7] Kouotou EA, Nansseu JR, Sieleunou I, Defo D, Bissek AC, Ndam EC. Features of human scabies in resource-limited settings: The Cameroon case. *BMC dermatology.* 2015; 15: 12. <https://doi.org/10.1186/s12895-015-0031-0>
- [8] Heukelbach J, Mazigo HD, Ugbomoiko US. Impact of scabies in resource-poor communities. *Current opinion in infectious diseases.* 2013; 26(2): 127–132. <https://doi.org/10.1097/QCO.0b013e32835e847b>
- [9] Ismael SS, Barwary NJ, Ahmad BD, Marof KM, Khwasti SH, Lavu KO, Elyas K. Prevalence of Scabies and its Related Risk Factors in Duhok City, Iraq. *Ain Shams Medical Journal.* 2025 Mar; 1;76(1):230-6.
- [10] Leung AKC, Lam JM, Leong KF. Scabies: A Neglected Global Disease. *Curr Pediatr Rev.* 2020;16(1):33-42. doi: 10.2174/1573396315666190717114131. PMID: 31544694.
- [11] Heukelbach J, Feldmeier H. Ectoparasites—the underestimated realm. *Lancet (London, England).* 2004; 363(9412): 889–891. [https://doi.org/10.1016/S0140-6736\(04\)15738-3](https://doi.org/10.1016/S0140-6736(04)15738-3)
- [12] Andrews RM, McCarthy J, Carapetis JR, Currie BJ. Skin disorders, including pyoderma, scabies, and tinea infections. *Pediatric clinics of North America.* 2009; 56(6): 1421–1440. <https://doi.org/10.1016/j.ped.2009.09.002>
- [13] Nakagawa TL, Takai Y, Kubo M, Sakai, H, Masegi T, Yanai T. A pathological study of sepsis associated with sarcoptic mange in raccoon dogs (*Nyctereutes procyonoides*) in Japan. *Journal of comparative pathology.* 2009;141(2-3): 177–181. <https://doi.org/10.1016/j.jcpa.2009.05.003>
- [14] Abasiubong, F., Akpan, N.A., Di, U., Umanah, I.N., & Udoh, S. (2011). Quality of life in patients with skin diseases in Uyo, a community in South-south Nigeria. *Adv Trop Med Pub Health Int.* 1(2):55–65.
- [15] Sharma RS, Mishra RS, Pal D, Gupta JP, Dutta M, Datta KK. An epidemiological study of scabies in a rural community in India. *Ann. Trop. Med. Parasitol.*, 1984; 1: 157–64
- [16] WHO. Report of the Tenth Meeting of the WHO Strategic and Technical Advisory Group for Neglected Tropical Diseases. Geneva. 2017; 29–30 March. Report No.
- [17] Abdel-Raheem TA, Meabed EM, Nasef GA, Abdel Wahed WY, Rohaim RM. Efficacy, acceptability and cost effectiveness of four therapeutic agents for treatment of scabies. *J Dermatolog Treat* 2016; 27(5): 473-9.
- [18] Salavastria CM, Chosidow O, Boffa MJ, Janier M, Tiplica GS. European guideline for the management of scabies. *J Eur Acad Dermatol Venereol* 2017; 31(8): 1248-53.
- [19] Ismael SS, Ahmad BD, Barwary NJ, Sulivany BS, Khodher HA, Nori MF, Obaidullah NH, Agha SA. Epidemiological Assessment of Head Lice Among Primary School Children in East Duhok, Iraq. *Egyptian Academic Journal of Biological Sciences, E. Medical Entomology & Parasitology.* 2025 Sep 3;17(2):23-32.