



## Transmission of Hansen's Disease from One Individual to Another

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### DESCRIPTION

*Mycobacterium leprae* is the bacterium that causes leprosy, a persistent bacterial infection of the skin and superficial nerves. The nose, eyes, throat, and testicles may also be affected. Other names for leprosy include HD, Hansen's disease, and Hanseniasis. In several regions of tropical and subtropical Asia, Africa, Central and South America, some Pacific nations, and the United States, leprosy is a widespread disease. Leprosy is no longer common in Australia. The condition is now treatable thanks to the development of multi-drug therapy in the early 1980s.

The majority of cutaneous lesions associated with multibacillary leprosy typically include both surface damage and lumps under the skin (nodules). The mucous membranes, which line the interior of the nose and mouth as well as the eyelids, can also be harmed. This can result in speech impediment, nasal tissue deterioration, and loss of vision. Internal organs and tissues have been damaged in some affected people. In multibacillary leprosy, nerve degeneration frequently causes loss of sensation in the hands and feet. The body may reabsorb injured fingers or toes, shrinking or losing these digits as a result of repeated injuries that go unreported and untreated as a result of this lack of sensation.

The body's early, generalized response to an invader (Innate Immune Response) is its first line of defense against *Mycobacterium leprae*. An individual is likely to experience the milder paucibacillary form of leprosy or not suffer leprosy at all if this is preceded by an immune response specific to *Mycobacterium leprae* infection (Adaptive Immune Response) that limits the growth of the bacteria. If there is little to no adaptive immune response, the bacteria can spread widely

throughout the body, entering deeper tissues periodically in addition to peripheral nerves, resulting in the more acute multibacillary leprosy signs and symptoms.

### LEPROSY IS SPREAD BY COMING INTO CONTACT WITH AN INFECTED PERSON

Leprosy is a moderately contagious illness. This indicates that it is uncommon to contract the illness following a brief contact with an infected person. The greatest chance of contracting leprosy exists when a person is in close proximity to an infected individual for an extended length of time in a small area. Both via pregnancy and through sexual contact, leprosy cannot infect an unborn kid. Most (95%) individuals exposed to *M. leprae* do not develop leprosy; innocuous contact, such as handshake or sitting next to a person who suffers from the disease, does not result in transmission. After beginning the proper multi-drug therapy, a person is no longer deemed contagious 72 hours later.

Leprosy's mode of transmission is still up for dispute. For many years, the dominant view was that the disease was spread through extended skin-to-skin contact. The respiratory transmission hypothesis, which was later made popular, postulated that the bacillus entered the human body through the lining of the nose. Even the idea of transmission through bug bites was formerly considered by scientists. Experiments with a mouse model of the illness in the late 20th century demonstrated that transmission is viable through the intact lining of the nose and through skin fractures but not through unbroken skin or through the throat, lungs, or digestive tract.

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