



## Infection Causing Agents in and Around Us

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### Description

As humans, we sometimes forget about all the life around us, those organisms that we cannot readily see with our eyes. Microorganisms like bacteria are everywhere in the human environment. They are in the air we breathe, the water we drink, the soil we tread upon. Many even live inside us and can only survive inside of us. They also perform functions essential to human survival, such as reconditioning nutrients in the soil or purifying water. But there are a certain percentage of these microbes that should they gain entrance into the body, can be quite dangerous. Infectious agents certain bacteria, viruses and protozoans interact with the human body in all the same ways that more helpful microbes do. Once they enter a human host or rather invade they can do a great deal of harm, and even cause death. This insightful volume provides an overview of diseases caused by infectious agents and how they affect human lives.

Infectious agents are spread in numerous and varying ways and their survival ultimately depends on a given environment. Humans are often the primary factor in spreading infectious disease with living conditions and travel historically playing crucial roles in the facilitation of epidemics and pandemics. Crowded home environments brought on by overpopulation can create optimum conditions for disease transmission because of proximity and the potential compromise to hygiene caused by too many people using too few resources. The quality of sanitary and hygiene practices generally devolve with the onslaught of overcrowding. With global travel come more opportunities more potential hosts to carry diseases from one place to another, perhaps exposing an infectious agent to a population that may not have immunity to it.

With any animal organism, there is some degree of natural immunity or resistance to disease. But immunity can be acquired as well, generally when humans are exposed to a disease at a young age. This trains antibodies to quickly and effectively respond to a disease.

Leprosy and tuberculosis have particularly long, ignominious histories. They spawn from microbes of the same genus. The captain of death was a leading cause of mortality to adults in their prime in the 19th and 20th centuries. Though it has stabilized in the western world, it is still a prevalent disease elsewhere and is increasingly associated with the spread of HIV, which compromises the body immune function.

Cholera and plague are other bacterial diseases with long histories of devastating humankind. Although these diseases vary in their means of transmission, both are tied to poor living conditions and regarded as highly contagious.

Fleas and other arthropods such as ticks and lice also transmit some rickettsia diseases. Viruses cause diseases familiar too many including chicken pox. Vaccination has proved to be the most successful method of battling viruses, having all but eliminated debilitating and deadly diseases like polio and small pox.

Influenza has significantly outbreaks of disease throughout human history. Flu viruses are incredibly resistant to immunization, rapidly mutating to create new subtypes through a process known as antigenic shift.