

A vector is defined as **an agent (either a human, animal or microorganism) that carries and transmits a pathogen or any other infectious agent from an infected organism to another**, either directly via the blood flow or indirectly via the food, water or any other element a susceptible organism may be in contact with.

Transmission of infectious diseases may also involve a vector. Vectors may be mechanical or biological.

A mechanical vector picks up an infectious agent on the outside of its body and transmits it in a passive manner. An example of a mechanical vector is a housefly, which lands on cow dung, contaminating its appendages with bacteria from the feces, and then lands on food prior to consumption. The pathogen never enters the body of the fly. *Culex* mosquitoes (*Culex quinquefasciatus* shown) are biological vectors that transmit West Nile Virus.

Biological vectors harbor pathogens within their bodies and deliver pathogens to new hosts in an active manner, usually a bite. Biological vectors are often responsible for serious blood-borne diseases, such as malaria, viral encephalitis, Chagas disease, Lyme disease and African sleeping sickness. Biological vectors are usually, though not exclusively, arthropods, such as mosquitoes, ticks, fleas and lice. Vectors are often required in the life cycle of a pathogen. A common strategy used to control vector borne infectious diseases is to interrupt the life cycle of a pathogen by killing the vector.