

Difference Between Fomite and Vector

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Key Difference - Fomite vs Vector

It is important to study the ways of [infectious disease](#) transmission in order to prevent them spreading among the human population. [Pathogenic](#) microorganisms are the main causative agents of many diseases. Transmission of infectious agents from person to person facilitates by different factors such as contact, vectors, vehicles (such as water, food, and air) and fomites. A vector is an organism that carries and transmits an infectious agent into another organism. Mosquito is one of the most famous vectors that spread several diseases such as [malaria](#), [dengue](#), chikungunya, [yellow fever](#) etc. Fomite is a non-living object that is able to transmit disease from one member to another member. The **key difference** between fomite and vector is that a **fomite is a non-living object that can spread infectious agents while vector is a living organism that spreads the disease.**

What is a Fomite?

Fomite is an inanimate object that is capable of transmitting an infectious agent from one person to the other person. These fomites are contaminated by the pathogenic agents. Examples of fomites include tablecloths, carpets, doorknobs, towels, needles, syringes, catheters, surgical equipment, furniture, utensils etc. The mode of the disease transmission through fomites referred as indirect contact transmission. The reason for referring it as the indirect transmission is that, without the prior knowledge, new susceptible host contacts with the fomite and transfers the infectious particles to his portal of entry. Fomites are a major problem in healthcare-associated infections.

Disease transmission through fomites can be prevented or minimized using proper [disinfection](#) methods or [antiseptic](#) methods. Different physical methods are also available to destroy the infectious particles in the different objects which work as vehicles for diseases. The vegetative stages of infectious agents are more susceptible to the destruction by these methods. However, it is necessary to use stronger methods to get rid of spores of [bacteria and fungi](#) or [protozoan cysts](#) since they are resistant to most of the disinfectants.

Giardiasis

(*Giardia intestinalis*)

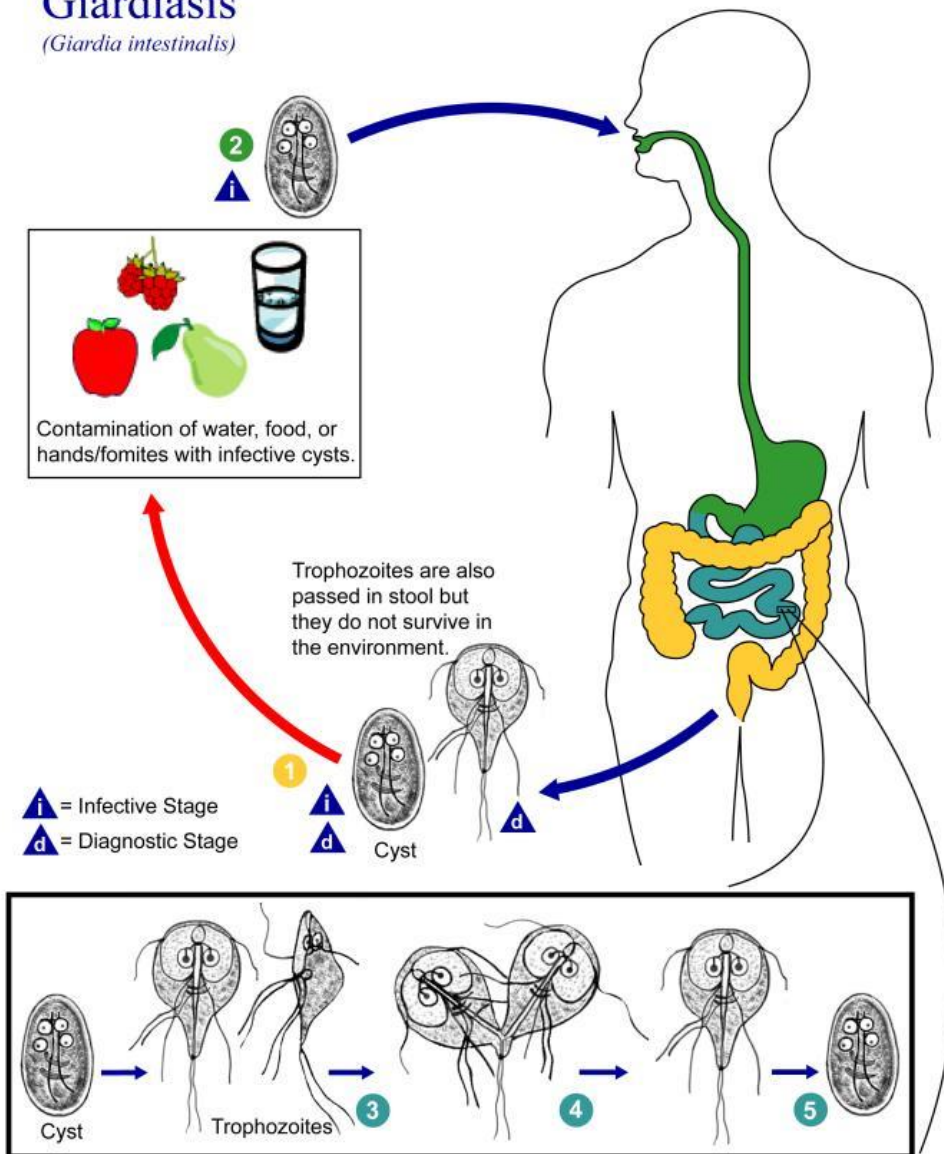


Figure 01: Disease Transmission through Fomites

[Chickenpox](#), [measles](#), mumps are several diseases that can happen due to fomites transmission.

What is a Vector?

Vector is a living organism that carries and transmits the infectious agents from one host to another. A vector picks up the disease agents from an infected host or from

the environment. Then the infectious agents are transferred to a new host during the bite when feeding. [Arthropods](#) are recognized as one of the main group of organisms that work as vectors for many diseases. The most popular vectors are insects that are bloodsucking. Examples of insect vectors are mosquitoes, flies, sand flies, lice, fleas, ticks, and mites.

According to the WHO, vector-borne diseases are accounting for 17 % of the infectious diseases. It is considerable value, and it implies the requirement of the vector control methods to prevent disease transmission since vector-borne diseases affect hundreds of millions of people around the world. Some of the vector-borne diseases are malaria, chikungunya, dengue, schistosomiasis, African human trypanosomiasis, leishmaniasis, Chagas disease, yellow fever, [Japanese encephalitis](#) and onchocerciasis etc.



Figure 02: Dengue Mosquito

There are several factors that cause the spread of vector-borne diseases rapidly among the humans. Global travel and trade, unplanned urbanization and environmental challenges, changes in agricultural practices, the growth of urban slums, lacking reliable piped water or adequate solid waste management are some of the factors for increasing vector-borne diseases. Vector control is the prime solution for preventing vector-borne diseases.

What is the Similarity Between Fomite and Vector?

- Both fomite and vector can spread infectious diseases.

What is the Difference Between Fomite and Vector?

Fomite vs Vector	
Fomite is an object or material that is likely to carry infection, such as clothes, utensils, furniture, doorknobs, surgical equipment etc.	Vector is a living organism that carries and transmits infectious agents from one host to new host.
Living or Non Living	
Fomite is non-living.	Vector is living organism
Type	
Fomite can be porous or nonporous.	The vector can be mechanical or biological.
Examples	
Fomite is skin cells, hair, clothing, and bedding, furniture, utensils, etc.	Vectors are mosquitoes, flies, ticks, mites etc.

Summary - Fomite vs Vector

Different factors affect the infectious disease transmission. Fomites and vectors are two such modes of disease transmission. Fomite is an inanimate object or material that carries infectious agents. Different objects tend to be contaminated with pathogenic agents and provide them for a temporary stay. When a susceptible new host contacts with the contaminated fomite, the disease agents indirectly enter into the host and host becomes sick. Vector is an organism that carries or transmits pathogens from one host to another host. Mosquitoes are very common vectors for several diseases. There are different types of organisms that work as vectors for diseases. This is the difference between fomite and vector.

Reference:

1. "Vector-Borne diseases." World Health Organization, World Health Organization. [Available here](#)
2. Study.com, Study.com. [Available here](#)
3. "Fomite." Fomite - an overview | ScienceDirect Topics. [Available here](#)

Image Courtesy:

1. 'Giardia lamblia life cycle' By PHIL - Public Health Image Library (Public Domain) via [Commons Wikimedia](#)
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