

Transformation
sunlight, water or
carbon dioxide. the

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Transformation of Bacteria Singled-cell, animal based organisms are called bacteria.

Bacteria usually live in groups and typically are not often found individually. Bacteria are everywhere in the world and are on or in almost everything. They are located in soil, water, shoes, food, and just about anywhere you think. Bacteria are classified in shape and structure with the three basic shapes being spherical, rod-shaped, and spiral. Spherical bacteria are shaped like a ball and are also referred to as cocci. These bacteria can cause strep throat. Rod-shaped bacteria are referred to as bacilli and they are known as vibrio.

These bacteria cause Bacillus anthracis, or anthrax. Spiral bacteria are called spirilla and they cause Lyme disease, Leptospirosis, and Syphilis. Bacteria can be either heterotrophic bacteria or autotrophic bacteria, based on the way they eat. Heterotrophic bacteria, or heterotrophs, get energy by consuming organic carbon. Meaning they absorb dead organisms and feed off of decomposing flesh.

They can either kill the host, or benefit them. Autotrophic bacteria, or autotrophs make their own food. They use photosynthesis, sunlight, water or carbon dioxide. The bacteria that use photosynthesis are called photoautotrophs.

Cells can also be classified as gram negative or gram positive based on the composition of the cell wall. Also, bacteria that do not need oxygen are anaerobic. If oxygen is required, they are called aerobic bacteria.

There are many ways to classify bacteria and if an individual is not educated on the subject, classifying bacteria can be very challenging. Bacteria reproduce in several ways. One way they reproduce is through binary fission. Which is an asexual form of reproduction, where the cell grows a cell wall in the center and forms two cells so that the two cells have the same genetic material. Bacteria can also transfer genetic material to different cells by processes called conjugation, transformation, and transduction. When bacteria become low on resources, they can form spores, which hold organism DNA and enzymes for germinations.

Spores can remain inactive for a long time, generally because they can avoid stress for extended periods of time. Bacteria are both harmful and helpful. One reason bacteria are helpful is because they help digest and break down nutrients.

An example of this is Lactobacillus and Lactococcus bacteria from sources such as yeast and molds that form foods such as cheese, soy sauce, vinegar, and yogurt. Bacteria are also helpful for plants. They take in nitrogen and release it later. Plants cannot produce nitrogen themselves, so they typically have a container of bacteria that is used when the plant sprouts. However, they can also have a negative affect the health of humans because they can cause diseases, such as tuberculosis, typhoid, cholera, diphtheria, and many more.

Bacteria can be spread in many different ways. Typically, it can be spread by direct contact, indirect contact, or droplets. Direct contact is touching, hugging, or shaking hands. Indirect contact occurs through surfaces that
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have bacteria on them, such as door handles, toys, and computers. Bacteria that are transmitted through droplet transmission occurs through sneezing or coughing.

Bacteria can then enter the host through their mouth, nose, eyes, or an open area on the skin. Environmental sources are additional mode of bacterial transformation. Several bacteria grow in the environment and some places are more infested than others, such as hot tubs. Bacterial transformation can also take place through the air.

When bacteria are spread throughout the air, it can literally spread anywhere. Bacteria can also be transmitted through poor hygiene especially if an individual is not washing hands properly and often or not using disinfectant wipes when needed. Rapid growth of bacteria is a major way it is spread since bacteria is reproduced by asexual reproduction, it can multiply rapidly.

Cross contamination refers to the transfer of bacteria from other sources to food. Cross contamination happens frequently due to large scale cooking equipment not being cleaned thoroughly. It also happens more often due the increased frequency of food coming in contact with bacteria covered objects during the process of food preparation. For example, if not disinfected correctly, a table surface or utensils covered with harmful bacteria can cause human illness if they are transferred to the food and then consumed by humans.

If not cleaned and disinfected appropriately, bacteria can live on a surface for hundreds of years. However, most do not thrive that long. Depending on how quickly bacteria multiply has a lot to do with how long they live on a surface. Another factor that determines the survival of bacteria is the humidity. If the humidity is more than ten percent, the bacteria can live and thrive.

Most bacteria can thrive at room temperatures and are more likely to live longer at room temperature than in extreme hot or cold environments. Bacteria have been found to live longer if they are not inside a human host. Some bacteria survive longer on hard surfaces than soft surfaces. Also, whether or not moisture is present is a big factor of how long bacteria live. Typically these factors have to deal with their exposure to sunlight, weather, and where exactly they are living. In conclusion, bacteria spread everywhere. Everything on or around you, bacteria is present. They come in many different forms, shapes, and sizes.

Bacteria is most likely affect you in a good or bad way.