

Difference between the Medical Microbiology and Pathogenic Bacteria

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Description

Medical microbiology deals with the prevention and treatment of diseases caused by microorganisms. Pathogenic bacteria are bacteria, upon entering the body they can cause diseases that can spread through water, air, soil, and also through physical contact. Medical microbiology, the large subset of microbiology that applies to medicine, is a branch of medical science that deals with the prevention, diagnosis, and treatment of infectious diseases. In addition, this field of science studies various clinical uses of microbes to improve health. There are four types of microorganisms that cause infectious diseases: bacteria, fungi, parasites, and viruses, and a type of infectious protein called a prion. A medical microbiologist studies the properties of pathogens, their routes of transmission, and the mechanisms of infection and growth. Medical microbiologists often advise physicians, identify pathogens and suggest treatment options. This can be used to develop a treatment.

Other tasks may include identifying potential community health risks or monitoring the development of potentially virulent or resistant strains of microbes, educating the community, and assisting with the development of health practices. They can also help prevent or control epidemics and disease outbreaks. Not all medical microbiologists study microbial pathology; some study common non-pathogenic species to see if their properties can be used to develop antibiotics or other treatments. Epidemiology, the study of the patterns, causes, and effects of health and disease states in populations, is an important part of medical microbiology, although the clinical aspect of the field focuses primarily on the presence and growth of microbial infections. In individuals, its effects on the human body and the methods used to treat these infections. In this sense, the entire subject area as applied science can be conceptually divided into academic and clinical subareas, where in reality there is a continuum between public health microbiology and clinical microbiology, just as the state of the art in clinical laboratories depends on continuous improvements in academic medicine and research laboratories.

Pathogenic bacteria can cause illness. Most types of bacteria are harmless and often beneficial, but others can cause infectious diseases. The number of these pathogenic species in humans is estimated to be less than one hundred. On the contrary, several thousand species are part of the intestinal flora present in the digestive tract. The body is constantly exposed to many types of bacteria, including beneficial commensals that grow on the skin and mucous membranes and saprophytes that grow primarily in soil and on decaying material. Blood and tissue fluids contain enough nutrients to support the growth of many bacteria. The body has defense mechanisms that allow it to resist microbial invasion of its tissues and give it a natural immunity or innate resistance to many microorganisms. Pathogenic bacteria are specially adapted and equipped with mechanisms to overcome the body's normal defenses and can invade parts of the body, such as blood, where bacteria are not normally found.

Some pathogens only penetrate the surface of the epithelium, skin, or mucous membranes, but many migrate deeper, spread through tissues, and spread through the bloodstream and lymph. In some rare cases, a pathogenic microbe can infect a perfectly healthy person, but infection usually only occurs when the body's defense mechanisms are damaged by local trauma or an underlying debilitating disease such as wounds, poisoning, chills, fatigue, and malnutrition. In many cases, it is important to distinguish between infection and colonization when the bacteria do little or no harm. Pathogenic bacteria contribute to other diseases of global importance, such as pneumonia, which can be caused by bacteria such as Streptococcus, Pneumococcus, and Pseudomonas, and foodborne illnesses, which can be caused by bacteria. These bacteria also cause infections such as tetanus, typhoid, diphtheria, syphilis, and leprosy, and are also the cause of high infant mortality rates in developing countries. Most pathogenic bacteria can be cultured and identified by Gram stain and other methods. Bacteria grown this way are often tested to find out which antibiotics are effective treatments for the infection.