

📖 Topic Page: [Pathophysiology](#)

Definition: **pathophysiology** from *Merriam-Webster's Collegiate(R) Dictionary*

 [pronunciation](#)

(1947) : the physiology of abnormal states; *specif* : the functional changes that accompany a particular syndrome or disease

path·o·phys·i·o·log·i·cal \-zē-ə- lä-ji-kəl\ or **path·o·phys·i·o·log·ic** \-jik\ *adj*



Image from:

[Intracranial volume and ICP correlation,... in Encyclopedia of the Human Brain](#)

Summary Article: **Pathophysiology**

From *Encyclopedia of Global Health*

Pathophysiology is the study of the detailed malfunctioning that comes from or causes disease. Physiology is the study of the mechanical, physical, and biochemical functions of living organisms. *Pathology* means the study of “suffering”—*pathos*. In order to study medicine and understand and treat disease, an appreciation for pathophysiology must be extensive. In studying pathophysiology, some topics often looked at are the fundamentals of the cell mechanism and abnormalities, cell division, cell death, tumor growth, and aging. Pathophysiology is essential for all medical staff in varying degrees and can be deficient in the developing world due to lack of funds and access to

technology.

Pathology is the study of essential nature of disease. It is the study of disease processes and structural and functional changes in organs and tissues that cause or are caused by disease. Pathology is the branch of medicine that analyzes the causes, mechanisms of development, and morphologic manifestations of disease. Most diseases are associated with organ, cell, or organelle dysfunction and this allows the study of pathology to identify the damage that the disease affects.

A pathologist must detect and classify the disorder in the tissue or cells of a living patient, as well as determine the disease complex that has led to a patient’s death. This is accomplished by examining tissue specimens obtained from living patients, or a biopsy, or from dead patients, autopsy. Pathology is a mandatory course of study in medicine and offers a detailed look at the many disease processes that attack the human organism.

Physiology is the study of how the human body and its systems work. Physiology is broken down into *physis* or nature and *logos* or study. The study of physiology includes the complete interaction of organ systems, cells, and organelles that work in synchronization to maintain homeostasis. Physiology is a mandatory course of study in medicine and offers the foundations of how the body works and what can potentially go wrong with its systems.

Mechanisms and function of the human body and its systems are inextricably linked with biochemical processes. Biochemistry is the study of the chemical constituents of living matter and of their functions and transformations during life processes. The field of pathobiochemistry deals with the disease states of biochemical processes.

Biochemistry is seen as the backbone of most of what the study of medicine comprises. The study of

biochemistry is the sum of all chemical pathways and actions in the body, both in the presence and absence of disease. The study of pathophysiology is closely tied with all of these scientific fields.

Every physician must have a sound understanding of these disciplines in order to study and apply pathophysiology to disease. Pathophysiology describes the mechanisms that lead from the primary cause via individual malfunctions to a clinical picture and its possible complications. Knowledge of these mechanisms serves patients to develop a suitable therapy, alleviate symptoms, and avert imminent damage caused by the disease. The reason physicians and healthcare workers study pathophysiology is to be able to better understand how disease negatively affects the human body and then to be able to treat disease.

SEE ALSO:

American Society of Clinical Pathologists (ASCP); Biochemistry; Electrophysiology; Pathology; Physiology.

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