



Overview of Pathology

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Description

Pathology is the study of the causes and effects of illness or injury. Pathology also refers to the whole study of illness, which includes a wide range of biology research issues and medical treatments. When used in the context of modern medical treatment, however, the term is frequently narrowed to refer to processes and tests that fall under the contemporary medical field of “general pathology,” which encompasses a number of distinct but related medical specialties that diagnose disease primarily through the analysis of tissue, cell, and body fluid samples. Pathology is a broad field of study and research that focuses on the causes, mechanisms of disease development, cell structural changes, and the consequences of those changes. General pathology is largely concerned with assessing known clinical abnormalities that are markers or precursors for both infectious and non-infectious disease in everyday medical practice, and is performed by experts in one of two major specializations, anatomical pathology or clinical pathology. There are more specialty classifications based on the sorts of samples, organs, and physiological systems involved, as well as the focus of the investigation.

General pathology

The study of disease is structured into several different domains, each of which studies or diagnoses disease signs using methods and technologies appropriate to certain scales, organs, and tissue types. This section focuses on pathology as it relates to common medical practice in these systems; however each of these specializations’ is also the topic of extensive pathology research into the disease pathways of specific diseases and disorders that impact the tissues of these discrete organs or structures.

Anatomical pathology

Anatomic pathology, often known as anatomic pathol-

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ogy, is a medical specialty that focuses on disease diagnosis using gross, microscopic, chemical, immunologic, and molecular examinations of organs, tissues, and complete bodies. Anatomical pathology is separated into subfields, with surgical pathology, cytopathology, and forensic pathology being the most common. Clinical pathology is the diagnosis of disease by laboratory study of body fluids and tissues. Anatomical pathology is one of two primary areas of the medical practice of pathology. Pathologists sometimes practice both anatomical and clinical pathology, which is referred to as broad pathology.

Cytopathology

The area of pathology known as cytopathology investigates and diagnoses diseases at the cellular level. It is most commonly used to diagnose cancer, but it can also be used to diagnose some viral diseases and other inflammatory ailments, as well as thyroid lesions, diseases involving sterile body cavities, and a variety of other body sites. Cytopathology is commonly utilized on samples of free cells or tissue fragments, and the tests are sometimes referred to as smear tests since the samples are smeared across a glass microscope slide for staining and microscopic analysis. Other methods, such as cyto-centrifugation, can be used to prepare cytology samples.

Neuropathology

Neuropathology is the study of disease in nervous system tissue, usually by surgical biopsies or, in the case of autopsy, complete brains. Anatomic pathology, neurology, and neurosurgery are all subspecialties of neuropathology. Neuropathology is regarded as a branch of anatomical pathology in many English-speaking nations. A neuropathologist is a physician who specializes in neuropathology after completing a fellowship after completing a residency in anatomical or general pathology.