

Review Pathology*

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Disclaimer

- **The purpose of this website is to provide a review for the student of pathology. It makes no claims to inform treatment of disease or clinical practice. It should be used only as a review.**

Personal Statement

Stephan Grundy

"I have been an historical researcher and author of historical fiction throughout most of my career. At the same time, I have observed an increasing need for better medical care throughout the world . Healthcare has become one of the foremost topics of concern within the general public. I know from personal experience within the network of my family, my friends, and city how preventable diseases still limit life expectancy and quality of life. Therefore, I would like to do something to enhance the quality of healthcare. I believe that the best contribution I can make is through contributing to the education of physicians, medical student and other health professionals. As the Internet has become a major source of information for medical professionals, medical students, and the general public, I have chosen to work in this venue, taking full advantage of the greatly increased availability of information and references that it offers.

This website is designed to simplify an important area of medicine and to present it in a question-and-answer format, which has been shown to enhance learning and retention of information. I've chosen pathology as the focus, because pathology is the foundation of modern medicine. It touches on every aspect of basic science and clinical practice. It is my hope that the website will be widely used to enhance knowledge of pathological processes by condensing the range of information in a manner conducive to learning and review."

Introduction

- **Pathology is a study of the causes of disease. It is the foundation of clinical medicine and surgery. Without an understanding of the causes of disease, clinical decisions are imperfect. Before beginning the study of pathology, a student needs foundational learning in anatomy, histology, biochemistry, pharmacology, and physiology. Pathology seeks to understand disease cause, pathogenesis (mechanisms of disease), and clinical manifestations. The pathologist in clinical practice focuses attention to abnormalities in tissues and cells (anatomical pathology) and in body fluids (clinical pathology). Pathology had its origins in human dissection by the ancient Greeks and in study of microscopic abnormalities by Rudolph Virchow (1821-1902). The greater understanding of the causes of disease since Virchow is nothing short of astonishing.**

Rudolf Virchow (1821-1902): “Father of modern pathology”



Part 1. Principles of Pathogenesis

- **It is the intention of this website is first to review disease processes in general and only then as applied to organ pathology. In Part 1, only disease processes in general are presented. Sections on organ pathology will be added as they become available.**
- **This review is structured in a question-and-answer format. This format is meant to assist the student in reviewing materials that have already been studied.**

Part 1. Section Content

- **Tissue injury**
- **Inflammation**
- **Tissue repair**
- **Immune system**
 - **Example diseases of the immune system**
- **Neoplasia**
- **Haemodynamic disorders**
- **Principles of genetic disease**
 - **Examples of genetic diseases**
- **Cellular pathology**

Reader Feedback

- **This website is a work in progress. Mistakes in information is inevitable. Therefore, feedback is appreciated. An effort will be made to improve the website when constructive criticisms are provided.**

Source Material: Pathology Textbooks

- The core outline for this website draws heavily from Robbins Basic Pathology, edited by Vinay Kumar MBBS MD FRCPath , Abul K. Abbas MBBS , and Jon C. Aster MD PhD, published by: Elsevier, 10th edition (2017). This is a thorough and up-to-date presentation of the general topic of pathology. Other textbooks have been consulted in specific areas.**
- Pathology textbooks are consulted primary for usual pathology topics and topic outlines.**

Source Material: Review without Hyperlinks

- This review is presented in outline format. It contains a large number of hyperlinks to other sources of information. But without use of these hyperlinks, it still provides abundant information for review. A considerable portion of these hyperlinks connect to expanded definitions of words or terms. Others link to images for visual learning. And some provide information in detail in various publications. Even without use of hyperlinks, however, the website can be used to summarize key information in different areas of pathology.**

Source Material: PubMed/Entrez Abstracts

- **PubMed is a free search engine making use mainly of the MEDLINE and Entrez database of references and abstracts on biomedical topics. The United States National Library of Medicine at the National Institutes of Health maintains the database as part of the Entrez system of information retrieval.**
- **Entrez is a search engine for biomedical databases such as PubMed[®] and GenBank, built by the National Center for Biotechnology Information (NCBI) at National Library of Medicine (NLM).**
- **Abstracts to most of the articles provide a rich source of information . As such they are mini-reviews. Linking the text to PubMed/Entrez ensures a reliable and safe website. They serve as a gateway to more detailed scientific information.**

Source Material: PubMed/Entrez Free Full-text Review Articles

- **This website favors free full-text reviews that connect to referenced abstracts. These review articles are especially useful for the student of pathology. Besides being available without cost, they usually cover topics of current interest to the medical community.**
- **Unfortunately, many full-text articles are not free. But if the student has access to an institutional library, this library may have subscriptions that offer free access to many journals and their online articles.**

Source Material: Wikipedia and other Encyclopedic Websites

- The internet offers access several encyclopedic websites. Some of these such as Wikipedia and Encyclopaedia Britannica are broad-based and provide useful information. Others are more targeted to specific areas. Unfortunately, some of the targeted articles may be removed from time to time from a website.**
- The quality of medical articles on Wikipedia is continually improving. Many articles are written by experts and most contain reliable information. ReviewPathology.com has not attempted to verify the quality of Wikipedia articles in the pathology area . But since most of the medical articles are written by professionals, Wikipedia can serve as a useful jumping off point for further review of the medical literature. Most Wikipedia articles are referenced to peer-reviewed medical literature or to up-to-date medical textbooks.**

Source Material: Government, Professional Society and Academic Websites

- A large amount of reliable information can be retrieved from a variety of websites sponsored by governments, pathological societies, and academic institutions.**
- This website puts priority on Wikipedia and PubMed/Entrez. To review expanded materials, the reader is encouraged to search out information on the variety of websites that focus on pathology.**

Source Material: Internet Images

- A rich source of information is made available through images sponsored by search engines such as Google, Bing, and Yahoo. Individuals images have not been downloaded and copied into the text because of uncertainty about copyright. However, many of these images are connected to the text as hyperlinks.
- In this website, a few links go to specific images. Single images may focus specifically on the topic of interest. Others connect to a full page of different images. Exploration of a batch of images may allow for enhanced understanding of the topic referenced. Of special note, on a full page of images, many images are gateways to valuable information—particularly review articles and other worthy websites.
- However, images should be used judiciously. Many images do not relate specifically to the topic being discussed. Usually images alone are most useful to those who have a more advanced understanding of the topic. Moreover, images alone are not always easy to understand. They are best used when linked to the article underneath them,. In other words, the image is a gateway to more detailed information in the connected article.

Use of Hyperlinks

- **This website makes generous use of hyperlinks to connect text to other sources of information listed before. In some cases, whole words or phrases are hyperlinked. In others, hyperlinks are connected to words or phrases as “references” at the end of a sentence. Occasionally, hyperlinks fail to connect to the intended source. This is less likely to occur when the link is to PubMed or Wikipedia.**
- **When hyperlinks are connected through “references”, lettered suffixes may be added to indicate the general source of the connection. The examples are pm = PubMed, w = Wikipedia, i = images (e.g., Google images), rg = ResearchGate, sd = Science Direct, and ow = other website.**