

# IMMUNOLOGY, PHARMACOLOGY, AND THERAPEUTICS (IPT)

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## **IPT 0100 - Principles of Immunology, Pharmacology, and Therapeutics**

2-20 Credits (Repeatable for credit)

The immune system is essential to human health; without it we quickly develop overwhelming microbial infections and even partial immune compromise leads to telltale types of infection. Even with a properly functioning immune system, it is difficult to consistently maintain health without the physician's arsenal of anti-microbial therapies. You will learn about the ontogeny and normal functions of the immune system and, as with any bodily system, its dysfunctions. Drug therapies cannot be discussed without the underpinning principles of pharmacology. You will learn how drugs act on their target receptors, how drugs are absorbed and metabolized once administered to a patient, and how factors such as diet, age or disease can affect drug action. The autonomic nervous system is vital to the control of all internal organs and the vasculature and is affected, directly and indirectly, by a wide range of therapeutics. You will learn how drugs interact with the autonomic nervous system and the therapeutic uses of these drugs, as well as predict their adverse effects. Returning to the immune system and its role in antimicrobial defenses, we will introduce you to classes of microbes and their surprising contributions to human health. We will discuss microbial characteristics that facilitate disease causation and that also offer therapeutic opportunities. Then, of course, those therapies will be covered (bugs and drugs). Lastly, after a brief introduction to cancer pathology, we will discuss cancer immunology, immunotherapy and chemotherapy. You will find small group computerized cases, a Sim lab experience, problem-solving opportunities and numerous clinical correlations to stimulate and deepen learning, allowing you to explore how information conveyed in class applies to the practice of medicine. We hope you enjoy the course.