

# Acquired Immunodeficiency

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## Learning Objectives:

- therapy for acquired immunodeficiencies
- conditions that can lead to acquired immunodeficiencies

## Study Questions:

- inherited vs. acquired immunity
- manifestations, symptoms, treatments of immunodeficiencies
- mutations that can block maturation or activation of T-Cells/B-Cells
- common causes of acquired immunodeficiency
- innate immunity & manifestations of innate immunodeficiency

## Causes of Acquired Immunodeficiency










<b>Virus</b>	HIV/AIDS	AIDS kills CD4 <i>*during latency, ↑CD4</i>
<b>Age</b>	young/old	↑age, ↓T-Cells <i>*the older you get, the more you rely on Memory T-Cells</i>
<b>Drugs</b>	- irradiation - chemotherapy - cytotoxic - corticosteroids - T-Cell specific	<u>Corticosteroids</u> : ↓T-Cells/B-Cells during 24 hours after use
<b>Malignancy</b>	- leukemia - lymphoma	dilute T-Cells
<b>Pregnancy</b>		TH2 bias
<b>Malnutrition</b>		↓CD4/CD8

## **(B-Cell Deficiency Only)**

Spleen removal ↓phagocytosis

\*hospital settings (catheters, etc) --> innate immunodeficiencies

Types of adaptive immunity.

	Humoral immunity	Cell-mediated immunity	
Microbe	 Extracellular microbes	 Phagocytosed microbes in macrophage	 Intracellular microbes (e.g., viruses) replicating within infected cell
Responding lymphocytes	 B lymphocyte	 Helper T lymphocyte	 Cytolytic T lymphocyte
Effector mechanism	 Secreted antibody		
Functions	Block infections and eliminate extracellular microbes	Activate macrophages to kill phagocytosed microbes	Kill infected cells and eliminate reservoirs of infection

