Online Review of Basic Pharmacology

An Animated and Interactive Approach

Clinical Pharmacology Animations
ONLINE REVIEW

Synaptic Learning

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Clinical Pharmacology Animations: Online Review provides an animated and interactive approach to understanding the fundamental topics of clinical pharmacology. This web-based tutorial will help health professions students gain an understanding of the key concepts of pharmacology and provide the needed foundation for increased mastery, professionalism, and confidence as they begin their career. This online review will clarify complex concepts and provide reinforcement of key terms and processes.

This comprehensive program includes over 130 animations to review 29 different topics. After completing the online review of topics, students may take a Final Exam to test their overall comprehension and retention of basic pharmacology.

Visit: http://go.jblearning.com/PharmacologyAnimations to view sample animations and bundle options.

Each section of the tutorial includes:

- Animationed Graphics with Audio Overview
- Key Points with a brief summary of the topic
- Examples for clinical applications of concepts

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ONLINE REVIEW TOPICS INCLUDE:

- Pharmacokinetics
  - Traversing the Cell Membrane
    - Structure of a Cell Membrane
    - The Role of Lipid Solubility
    - Diffusion vs. Active Transport
    - Passive Diffusion
    - Facilitated Diffusion
    - Active Transport
  - Absorption
    - Paths of Drug Absorption
    - Oral Administration
    - Intravenous Administration
    - Subcutaneous Administration
    - Inhalation
    - Absorption of Orally Administered Drugs
    - Stomach
    - Small Intestine
    - Drug Solubility and the Liver
    - Factors Affecting GI Absorption
    - Gastric Emptying
    - First Pass Effect
    - Drug Solubility and the Digestive System
    - Reverse Transport
  - Distribution
    - How Drugs are Distributed
    - Distribution Equilibrium
    - Capillary Structure
    - Factors Affecting Distribution
    - Volume of Blood Flow
    - Plasma Protein Binding
    - Blood-brain Barrier
    - Tissue Binding
  - Metabolism
    - Sites of Metabolism
    - Metabolite Activity
    - Role of Enzymes
    - Cytochrome P-450 Enzyme System
    - Induction
    - Inhibition
  - Excretion
    - Sites of Excretion
    - Kidneys
    - Liver
    - Lungs
    - Breast
    - Renal Excretion
    - Glomerular Filtration
    - Tubular Reabsorption
    - Tubular Secretion
- Pharmacodynamics
  - Clinical Effects
  - Mechanism of Action
    - Nature of Receptors
    - Agonist
    - Antagonist
  - Drug-receptor Interactions
    - Selectivity
    - Affinity
    - Coupling Efficiency
    - Number of Receptors
  - Types of Agonists
  - Types of Antagonists
- Theraputic Drug Levels
  - Measuring Pharmocokinetcs
    - Plasma-drug-concentration—Time curve
    - Bioavailability
    - Graphing Bioavailibility
    - Calculating Bioavailability
    - Bioequivalence
    - Volume of Distribution
    - Clearance
    - Half Life
  - Measuring Pharmacodynamics
    - Dose-responsibe curve
    - Dose-percent curve
    - Time-response curve
    - Efficacy
    - Potency
    - Minimum and maximum effective dose
    - Medium effective dose
    - Median toxic dose
    - Median lethal dose
    - Theraputic range
  - Achieving the Steady State
    - Continuous vs. intermittent administration
    - Continuous administration
    - Intermittent administration
    - Time to steady state
    - Dose and steady state
    - Dosing frequency and steady state
    - Loading and maintenance doses
- Adverse Effects
  - Cause of Adverse Effects
  - Classifying Adverse Effects
    - Severity
    - Onset
    - Dose dependency
    - Reversibility
    - Local vs. systematic effects
- Drug Interaction
  - Pharmacokinetic Drug Interaction
    - Altering Drug Absorbtion
    - Absorption
    - Chelation
    - Delay of gastric emptying
    - Alteration of pH
    - Inhibition of reverse transport
    - Altered drug distribution
    - Altered drug metabolism
    - Induction
    - Inhibition
    - Altered drug excretion
  - Pharmacodynamic Drug Interaction
    - Additive drug interactions
    - Synergistic drug interactions
    - Antagonistic drug interactions
- Drug Delivery
  - Route of Drug Admininstration
    - Enteral administration
    - Parenteral administration
    - Topical administration
    - Intranasal administration
    - Inhalation
    - Transdermal
  - Drug Form
    - Oral drug forms
    - Parenteral drug forms
    - Topical drug forms
    - Other drug forms
  - Drug Formulations
    - Drug dosing
    - Dosing units
    - Dosing abbreviations
    - Selecting the dose/dosage
- Assessment
  - Final Exam

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