

Pharmacology 1 and Prescription Knowledge

Introduction to Pharmacology

Refer lecturer for course updated notes.

Students are obliged to follow the courses for evaluation process and presented notes are preliminary drafts for the whole evaluation process.

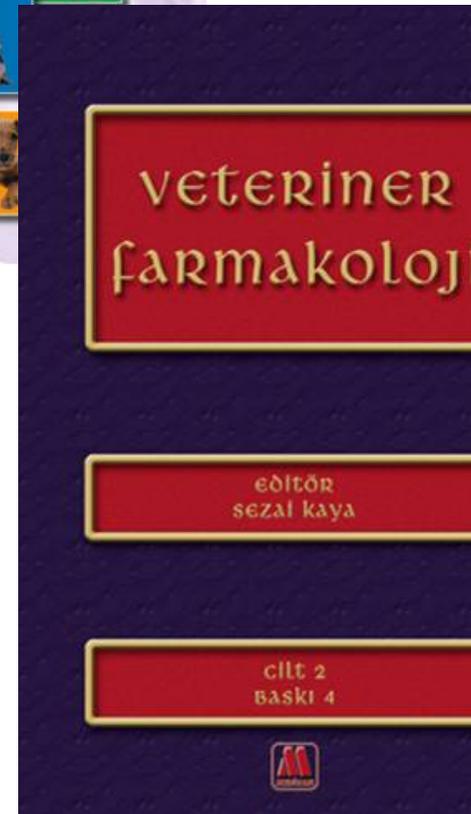
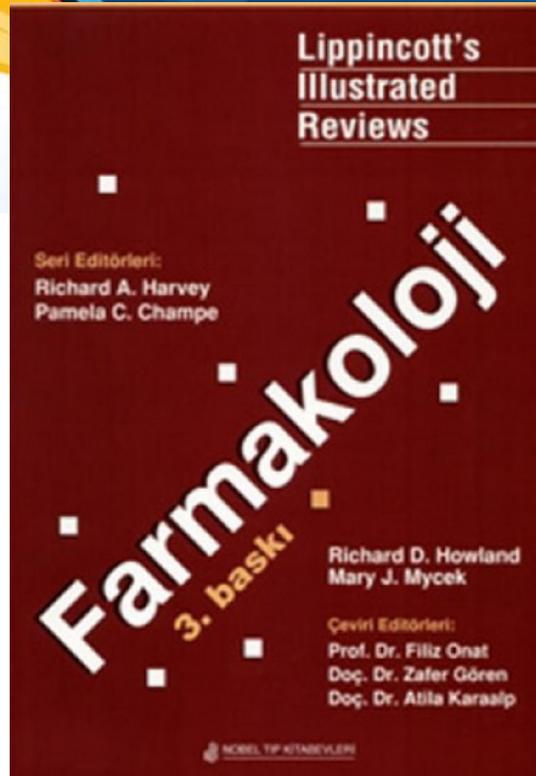
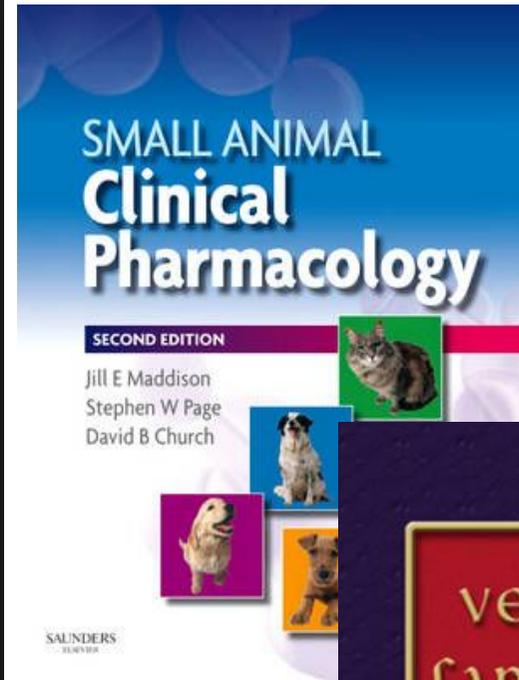
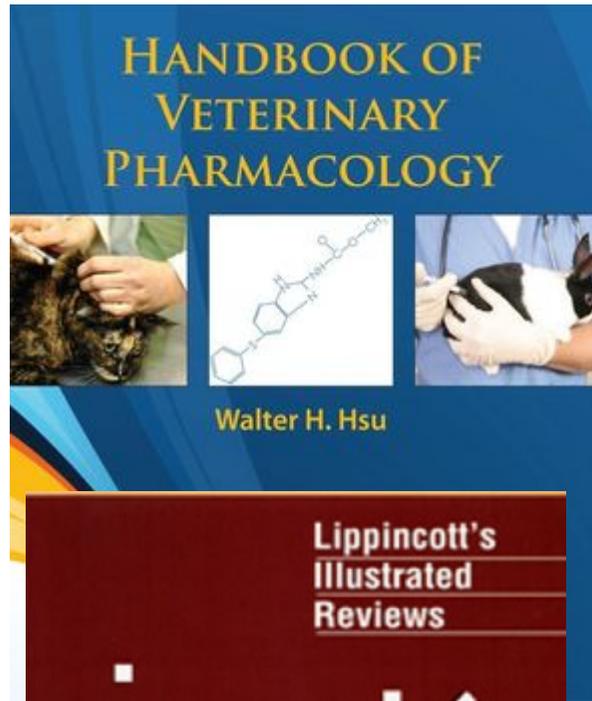
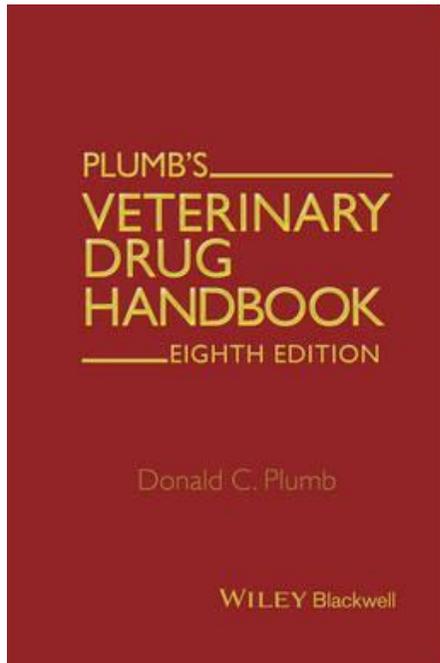
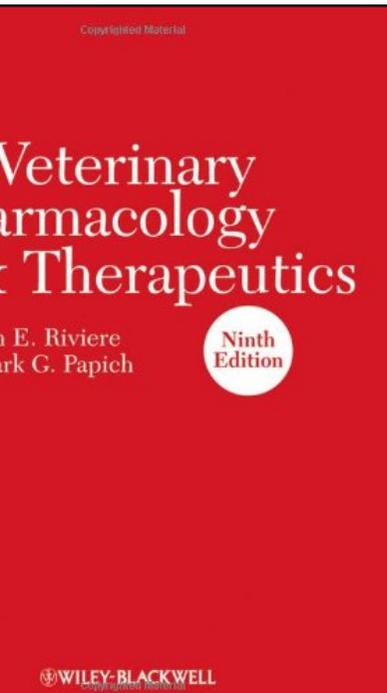
Topics included in Pharmacology 1 and Prescription Knowledge

- General Pharmacology
- Central Nervous System Drugs
- Autonomic Nervous System Drugs
- Cardiovascular System Drugs
- Hematopoietic System Drugs

Topics included in General Pharmacology

- Introduction to Pharmacology
- Drugs: Definition, Sources, Classification, Nomenclature, Dose, Structure-Effect Relationship, Medical Chemistry
- Pharmacokinetics
- Pharmacodynamics
- Effects of drugs
- Drug Forms and Preparation
- Prescription and Legislation of Drugs

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Etymology

"pharmacology" is derived from Greek φάρμακον, pharmakon, "drug, poison, spell" and

-λογία, -logia "study of", "knowledge of"

- The science of drugs including their origin, composition, pharmacokinetics, therapeutic use, and toxicology.
- (medicine) The properties and reactions of drugs especially with relation to their therapeutic value.

Pharmacology

Interaction of exogeneously administered molecules (drugs) with living systems for

- Disease prevention,
- Treatment
- Diagnosis

Science of drugs

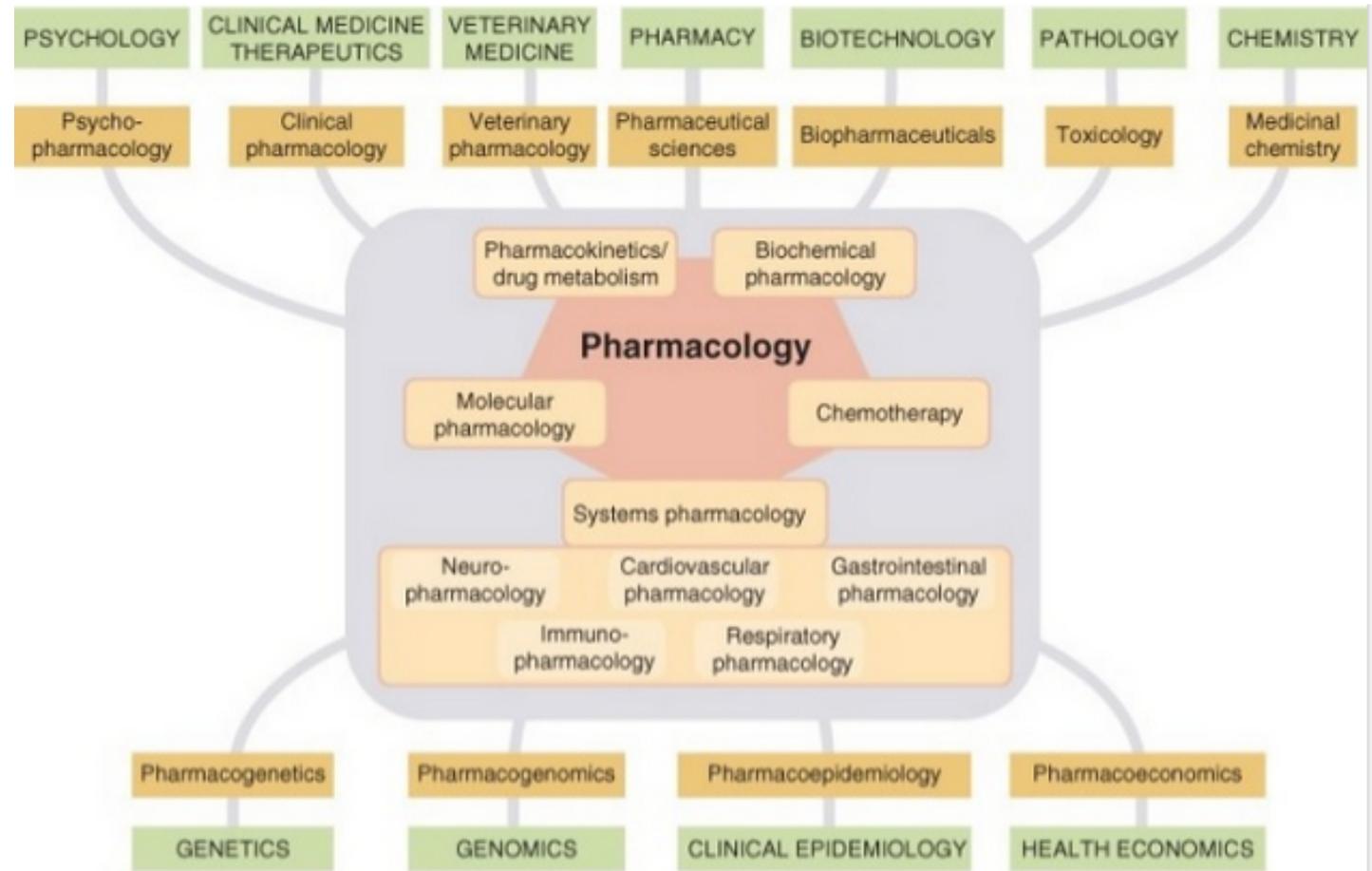
- Broadly speaking, drugs and chemical substances; - Sources - Physical - chemical properties - Preparation and composition - Amount and shape to be used in treatment - Entrance into the body, pharmacokinetics - New drug development

Drug

- Any substance when absorbed changes (alters) the normal body function

Pharmacology-multidisciplinary area

- Materia medika
- Pharmacognosia
- Pharmacodynamics
- Pharmcotherapy
- Clinical Pharmacology
- Galenic Pharmacy
- Pharmaceutical technology
- Pharmacography
- Posology
- Biopharmaceutics
- Neuropharmacology
- Psychopharmacology
- Physiological pharmacology
- Biochemical pharmacology
- Molecular pharmacology
- Radiopharmacology



Pharmacopoeia

- an official publication containing a list of drugs, chemicals, and medicinal preparations with their effects and directions for their use.

Pharmacopoeia- Turkey

- Drug formularies - Akrabadin
- First modern pharmacopoeia of the Ottoman Empire - 1818.
- Published in Istanbul...

1818 – *Pharmacopoeia Geniki* by Brugnatelli,

1844 – *Pharmacopoea Castrensis Ottomana* by Dr. Charles Bernard,

1859 – *Vade Mecum del Medico Pratico e del Farmacista* by Dr. Gio. Spagnolo,

1874 – *Dustur-ul Edviye* by Dr. Huseyin Sabri Bey,

1892 – *Annuaire Oriental de Médecine et de Pharmacie* by Pierre Apéry,

1912 – *Guide Complet pour les Pharmaciens civils et militaires* by Mehmet Suleyman.

Turkish Codex/Pharmacopoeia

- 1. Turk Kodeksi 1930 (Turkish Codex): This was the first official pharmacopoeia of the Republic of Turkey. Has 659 monographs; and names are given in Turkish, Latin and French.
- 2. Turk Kodeksi 1940: Updated edition of the Turk Kodeksi 1930. 730 monographs.
- 3. Turk Kodeksi 1948: Updated version of the Turk Kodeksi 1940. It also includes a supplement at the end. It has 955 pages
- 4. Turk Kodeksi 1954
- 5. Turk Farmakopesi 1974: In contrast to the aforementioned ones the name of this book is pharmacopoeia instead of codex. Includes 617 monographs and 57 supplements. Unlike the previous publications, it includes only a Turkish index
- 6. Turk Farmakopesi I (Adoption of the European Pharmacopoeia)

TÜRK FARMAKOPESİ
Avrupa Farmakopesi Adaptasyonu

II
A - H
2016

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TÜRK FARMAKOPESİ
II
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Avrupa Farmakopesi
Adaptasyonu

2016

2000 BC- Here, eat this root

1000 AD- That root is heathen, say this prayer

1850 AD- That prayer is superstition, drink this potion

1940 AD- That potion is snake oil, swallow this pill

1985 AD- That pill is ineffective, take this antibiotic

2000 AD- That antibiotic is artificial , here eat this root

Is this a *bona fide* client?

Is there a therapeutic need for this drug or medication?

Is this animal/herd under my care?

Has the legislation regarding storage and handling been followed?

Do I have documentation/records for the above?

Do I have a system of follow-up to determine whether the expected outcomes from use of this drug or medication are achieved?

Am I in a position to provide after-care for this animal if needed?

Am I confident that my client understands all instructions (for use and for withholding periods as appears on the label) and will use the drugs or medications properly?

Is the quantity I intend to dispense reasonable?

Is the supply in the best interests of the animal/herd?

History of pharmacology

- Primitive Period
- Ancient Period
- Medieval period
- 16th century
- 17th century
- 18th century
- 19th century
- 20th century

- Prudent selection of drugs
- Rationalization of prescription practices

- Responsibilities of veterinarians in using drugs
- Extralabel drug use
- Over-the-counter (OTC) drugs
- Waste disposal of drugs

Sources of drugs

- Plant derived
- Microorganism derived
- Animal derived
- Synthetic compounds
- Semi synthetic compounds

- Classification of drugs
- Active compounds in plants
- Pharmaceptherapeutics
- Pharmacogenetics

- Absorption
- Factors effecting absorption
- Solubility factors
- Lipid soluble substances
- Water soluble substances
- Distribution
- Factors effecting distribution

- Bioavailability
- Bioequivalence
- Depot Binding (accumulation in fatty tissue)
- Degradation and excretion
- Metabolism and elimination
- Half lives and kinetics

- First order kinetics
- Zero order kinetics
- Comparison
- Drug effectiveness
- Dose-response curves
- Therapeutic index
- Effective/Lethal/Toxic Dose
- Margin of safety
- Potency
- Efficacy

- Tolerance (desensitization)
- Sensitization
- Mechanism of tolerance and sensitization (pharmacokinetic, pharmacodynamic, physiological, metabolic)

- Drug-drug interactions
- Pharmacokinetic-pharmacodynamic interactions
- Cumulative effects
- Additive effects
- Synergistic effects
- Antagonistic effects

- Pharmacodynamics
- Receptor
- Lock-key, induced fit models
- Affinity
- Selectivity
- Definition of agonist, antagonist, partial agonist; examples
- Modes of action
- Important implications of drug-receptor interaction
- Ligand-receptor binding models