

“One of the features which is thought to distinguish man from other animals is his desire to take medicines”

(Sir William Osler, 1849-1919)



Questions whose answers are based on pharmacology as a discipline

Why is low dose aspirin better than high dose aspirin in preventing heart attacks?

Aspirin and tylenol both reduce inflammation (NSAID) and both lower fever (antipyretic) but tylenol does not prevent heart attacks, why?

Why is racial profiling acceptable in deciding what drug to use for the treatment of high blood pressure – beta blockers versus angiotensin receptor blockers or ACE inhibitors?

Why is it so difficult to find a drug which can be used in treating different metastatic tumors (cancer)?

Definitions

- **Pharmacology** is the science of the interaction of chemicals with living systems at all levels
- **Pharmacokinetics** investigates the effects of the biological system on drugs (absorption, distribution, elimination...)
- **Pharmacodynamics** describes the fundamental action of a drug on a physiological, biochemical or molecular level
- **Pharmacogenetics** examines the effects of genetic factors to variations in the drug response ("Asian Flush", Codeine "resistance")
- **Toxicology** studies the undesirable effects of chemicals on living systems (includes poisons, antidotes and unwanted side effects of drugs)
- **Pharmacy** classically is the art of preparing, compounding and dispensing chemicals for medicinal use, new functions are advising on specific therapies to prevent drug-drug interactions, monitoring drug usage, clinical informatics