

# Pharmacology - terminology

„pharmacon“ + „logos“ / „logia“

= scientific discipline dealing with  
INTERACTIONS BETWEEN SUBSTANCES..

introduced into the organism from the environment

..AND THE LIVING ORGANISM on all levels of complexity:

molecular, cellular, organ, or on the level of the organism as a whole

## Subfields of pharmacology:

- Pharmacodynamics

– systematic study of the effects of drugs on living systems

- Pharmacokinetics

– systematic study of the effects of living systems on drugs

## Drug Names:

- Chemical Name
- Generic Name
- Trade Name

## Chemical Name

- describes its molecular structure and distinguishes it from other drugs

- Chemical Name: 2-(diethylamino)-2',6'-acetooxylid monohydrochloride monohydrate

## Generic name

- often determined by the pharmaceutical company (investigator)

- Generic Name: lidocaine hydrochloride
- Official Name: Lidocaini Hydrochloridum (Czech Pharmacopoea 2009)
- Brand (Trade) Name: Xylocaine®

## Trade Name

- or brand name - the manufacturer selects alone; the brand name can become a registered trademark (this pharmaceutical company is the only one who can advertise and market the drug under that name)

## International Nonproprietary Name (INN)

- official non-proprietary or generic name given to a pharmaceutical substance, as designated by the World Health Organization (WHO)
- provides a standard name for each substance  
~ IUPAC names in chemistry
- WHO issues INN names in English, Latin, French, Russian, and Spanish • Arabic and Chinese versions, although not included in the original scheme, are now also being issued

Example:

IUPAC name: N-(4-hydroxyphenyl)-acetamide

INN: Paracetamol

British Approved Name (BAN): Paracetamol

United States Adopted Name (USAN): Acetaminophen

Other generic names: N-acetyl-p-aminophenol, APAP, p-Acetamidophenol, Acetamol

Proprietary names: Tylenol®, Panadol®, Panamax®, Perdolan®, Calpol®, Doliprane®, Tachipirina®, Benuron®, Atasol®

## Reasons for drug administration:

- therapeutic
- diagnostic
- preventive

### Therapeutic use:

- suppression or mitigation of the cause or unpleasant symptom(s) of the disease
- substitution of endogenous substance (hormones, vitamins, bile salts, HCl, etc.)
- modulation of the organ function

Therapeutic use of drugs can be: „empiric“ or „aimed“ performed on the base of knowledge of the mechanism of the therapeutic effect and/or adverse effects, comparison with the effect of other drugs  
**„Evidence – based therapy“**

### Diagnostic use:

- functional tests (dexamethazone, histamin)
  - substrates (markers, probe drugs)
- for biochemical examinations or phenotype determination (CYPs)

### Prevention / Prophylaxis:

- vaccination
- immunoprophylaxis
- prophylaxis of myocardial infarction with ASA
- prophylaxis of Str. endocarditis, meningitis with penicillin

# Drug Dosage Forms

- drug substances are seldom administered alone, but rather as a part of a formulation in combination with one or more nonmedical agents that serve varied and specialized pharmaceutical functions

## Doses

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DTS – dosis therapeutica singula

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DTD – dosis therapeutica pro die

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DMS – dosis maxima singula

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DMD – dosis maxima pro die

ED 50, LD50, TD50

## Factors Determining Drug Dose

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Body Weight, Surface Area, Sex, Tolerance

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Concomitant Drug Therapy

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Time of Administration

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Dosage Form and Route of Administration