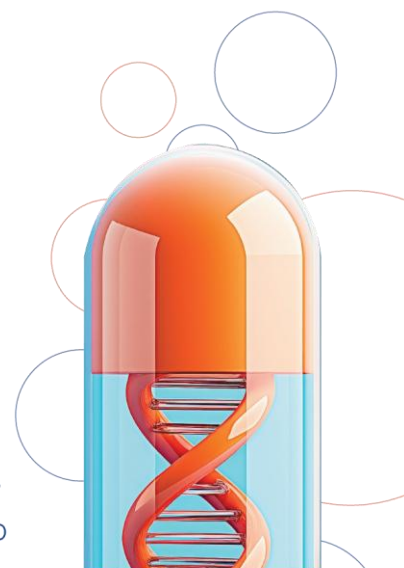
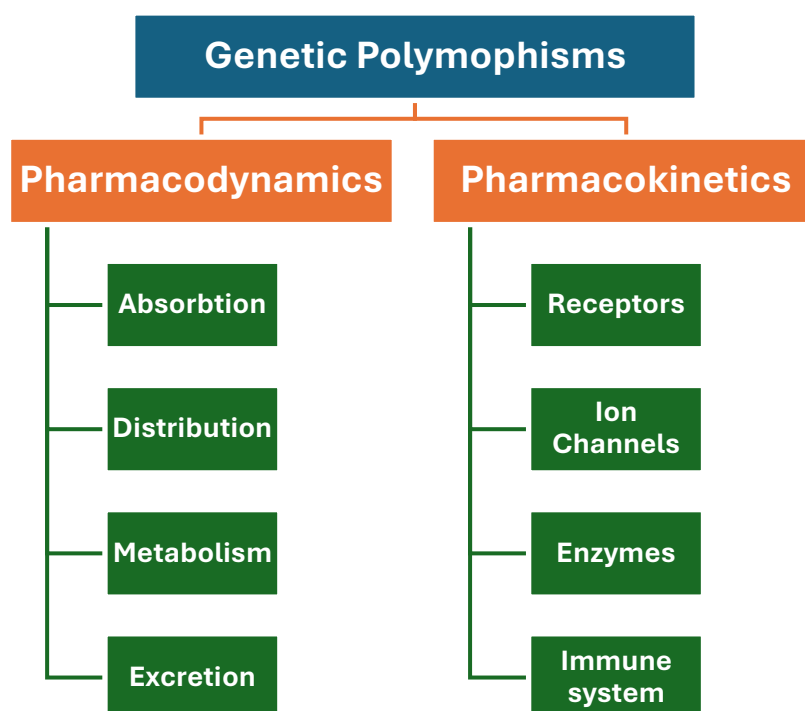


Key Terminology Explained

Pharmacokinetics and Pharmacodynamics

- **Pharmacodynamics** refers to *what the drug does to the body* - its mechanisms of action, therapeutic effects, and the intensity and duration of its response at the target site.
- **Pharmacokinetics** refers to *what the body does to the drug* - how a medicine is absorbed, distributed, metabolised, and excreted. Pharmacokinetics determines how often a dose is needed, how much is required, and how long the drug stays active in the body. The term *half-life* describes the time taken for the concentration of a medicine in the body to reduce by half.

Both pharmacokinetics and pharmacodynamics can be influenced by genetic variation, alongside other clinical factors.



Substrates, Inhibitors, and Inducers

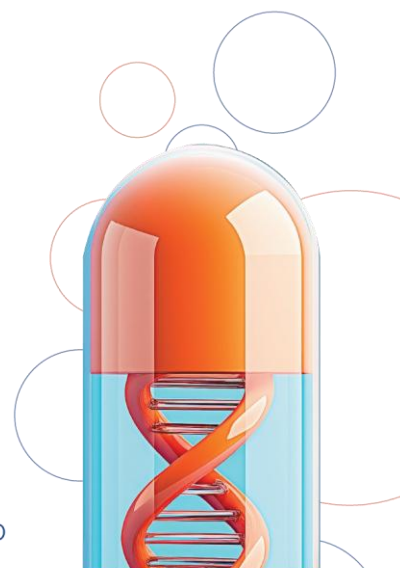
- **Substrates** are medicines that are processed by a specific enzyme.
- **Inhibitors** slow down enzyme activity, which may increase the concentration of a substrate in the body and raise the risk of side-effects.
- **Inducers** increase enzyme activity, which may lower drug concentrations and reduce effectiveness.

Understanding whether your genetic profile makes you more sensitive to inhibitors or inducers helps predict your risk for unwanted reactions or treatment failure.

For a list of substrates, inhibitors and inducers by CYP enzyme, please visit <https://drug-interactions.medicine.iu.edu/main-table>

Active ingredients and prodrugs

- An **active ingredient** is the component of a medicine responsible for treating your condition or symptom. It is the substance that produces the desired therapeutic effect. For example, in cholesterol-lowering medications, simvastatin is the active ingredient that helps reduce cholesterol levels in the blood and is sold under various trade names, such as Zocor[®]. The recommendations in this report are based on the active ingredient.
- A **pro-drug** is a medication that must be activated by the body before it works. When you take a pro-drug, your body converts it into its active form, which then produces the desired effect. For example, codeine is a pro-drug that your body converts into morphine to provide pain relief. How effectively this conversion occurs can vary based on your genetics.



Examples of prodrugs:

A prodrug is an inactive or partially active compound that, after administration, undergoes metabolic conversion in the body to become an active drug (medicine). Some medicines below are classic prodrugs (inactive until converted), while others are active drugs that form important active metabolites (sometimes 'prodrug-like').

Abacavir	Cyclophosphamide	Methyldopa	Prednisone
Azathioprine	Famciclovir	Many ACE Inhibitors*	Simvastatin
Candesartan cilexetil	Fluphenazine decanoate	Mycophenolate mofetil	Tamoxifen
Capecitabine	Fosamprenavir	Oseltamivir	Tenofovir (disoproxil fumarate/ alafenamide)
Clopidogrel	Loratadine	Prasugrel	Tramadol
Codeine	Losartan	Prednisolone acetate	Valacyclovir

* e.g. Benazepril, Perindopril, Enalapril, Ramipril

