

Learning Portal Lite: Drug handling

This is a one-page summary; see the [full version online](#)

Definitions

Some of the concepts covered in this tutorial include:

- **Pharmacokinetics:** what the human body does to a medicine.
- **Pharmacodynamics:** what the medicine does to the body (both beneficial effects and side effects).
- **Half-life:** the time taken for the amount of drug in the body to fall by half, which determines the time to steady state, elimination rate, and the frequency of dosing.

Factors affecting drug handling

These include:

- The extent to which a medicine is eliminated by the kidney and/or metabolised by the liver, and the impact of any disease on these organs.
- Patient age and weight may also affect drug handling. For example:
 - Older patients may develop important changes in drug distribution, metabolism, renal excretion and pharmacodynamic responses compared to younger adults.
 - Neonates have immature metabolism and renal function which both improve with age.

Therapeutic drug monitoring

Monitoring the blood levels of drugs with a narrow therapeutic index and a predictable concentration-response relationship helps patients to achieve a good response to therapy and protects them from toxicity. Example medicines include phenytoin and gentamicin.

Questions to ask

Questions about drug handling vary in their nature but if asked about monitoring plasma levels of medicines, your questions could include:

- When was the medicine started and what is the dose?
- What were previous levels, and have doses changed recently?
- Are there medicines or medical conditions that may be adversely affecting levels?

Information sources

SmPCs, Martindale, UpToDate and similar sources can be helpful for determining a range of pharmacokinetic data. Check if you have any local guidance on therapeutic drug monitoring.

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