Routes of Administration - Model Comparison

Experiment 12 - Practical Notes

Name: _____ Roll no.: _____ Date: _____

Teaching mode: use approved simulation, prepared demonstration records or supplied experimental data. No live-animal dosing, surgery or challenge is prescribed in these notes.

Aim

To compare supplied route diagrams and exposure data.

Principle

The administration route affects absorption, onset, exposure and practical risks. Route differences must be assessed in the same medicine and model context.

Requirements

- Instructor-provided labelled diagrams, traces or data for this activity.
- Calculator, graph paper or spreadsheet, and the activity record.

Procedure

1. Identify routes

Label oral, intravenous, intramuscular, subcutaneous and other assigned route diagrams; no injection is performed.

2. Compare exposure curves

Read supplied onset, peak and overall exposure information on common scales.

3. Explain route factors

Discuss absorption barrier, first-pass effect where relevant, formulation and practical route limitations.

4. Record

Present a comparison table and state why a route result cannot be transferred to an unrelated medicine.

Observations and Record

Record item	Entry
Activity / material identifier	_____
Measurement or visible feature	_____
Comparison / calculated outcome	_____
Interpretation and limitation	_____

Result

The recorded finding is ____; the supporting observation or calculation is ____. The main limitation is ____.

Precautions

- Use the supplied teaching material; distinguish a measured observation from an assumed value.
- Keep units, axes, labels and measurement conditions consistent.
- Record limitations and seek instructor review before applying a conclusion to a live case.

Viva Questions and Answers

1. Does intravenous administration require absorption into the systemic circulation?

The medicine is introduced directly into that circulation.

2. Why can oral exposure differ?

Absorption and presystemic processes can reduce or delay systemic availability.

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