

Table 1: Pros and cons of different routes of drug administration

Route	Advantages	Disadvantages
Oral	<ul style="list-style-type: none"> • Easy • Preferred by patients • "Slow-release" preparations may be available to extend duration of action • Drugs can be formulated in such a way as to protect them from digestive enzymes, acid, etc. 	<ul style="list-style-type: none"> • Unsuitable in patients who are uncooperative, strictly "nil by mouth", are vomiting profusely or have ileus • Most orally administered drugs are absorbed slowly • Unpredictable absorption due to degradation by stomach acid and enzymes
Rectal	<ul style="list-style-type: none"> • Good absorption – the haemorrhoidal veins drain directly into the inferior vena cava, avoiding hepatic first pass metabolism 	<ul style="list-style-type: none"> • May not be suitable after rectal or anal surgery • Some patients dislike suppositories
Subcutaneous or intramuscular	<ul style="list-style-type: none"> • Good absorption, especially for drugs with a low oral bioavailability • Onset is more rapid than the above routes • Depending on formulation can have very long duration of action, e.g. depot antipsychotics and contraceptives 	<ul style="list-style-type: none"> • Absorption may still be unpredictable if peripheries are poorly perfused • Injections hurt, cause bruises and frighten children and needle phobics
Intravenous	<ul style="list-style-type: none"> • Dependable and reproducible effects • Entire administered dose reaches the systemic circulation immediately - the dose can be accurately titrated against response 	<ul style="list-style-type: none"> • Requires a functioning cannula • More expensive and labour intensive than other routes. • Cannulation is distressing to some patients, especially children • Cannulae are prone to infection • IV injection of drugs may cause local reactions
Topical	<ul style="list-style-type: none"> • Easy • Non-invasive • High levels of patient satisfaction 	<ul style="list-style-type: none"> • Most drugs have a high molecular weight and are poorly lipid soluble, so are not absorbed via skin or mucous membranes • Very slow absorption
Inhaled	<ul style="list-style-type: none"> • Very rapid absorption due to the huge surface area of the respiratory endothelium • Bronchodilators and inhaled steroids can be targeted to lungs with low levels of systemic absorption 	<ul style="list-style-type: none"> • Bioavailability depends on patient's inhaler technique and the size of drug particles generated by the delivery technique