

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

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