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# Bioavailability

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## EDITORIAL

The propensity of a medicine or other body to be occupy and used by the physique. Phonically bioavailable means that a drug or other substance that is taken by mouth can be absorbed and used by the body. In pharmacology, bioavailability is a minor group of absorption and is the fraction (%) of a direct drug that reaches the systemic circulation. By definition, when a medication is managed intravenously, its bioavailability is 100%. However, when a medication is administered *via* path other than intravenous, its bioavailability is mostly lower than that of intravenous due to intestinal endothelium absorption and first pass metabolism. Thereby, mathematically, bioavailability equals the ratio of comparing the area under the plasma drug concentration curve versus time (AUC) for the extravascular statement to the AUC for the intravascular formulation. AUC is used because AUC is equivalent to the dose that has entered the systemic circulation bioavailability of a drug is an average value; to take people variability into account, deviation range is shown as. To ensure that the drug taker who has poor absorption is dosed appropriately, the bottom value of the deviation range is employed to represent real bioavailability and to calculate the drug dose needed for the drug taker to achieve systemic concentrations similar to the intravenous formulation. To dose without knowing the drug taker's absorption rate, the bottom value of the deviation range is used in order to ensure the intended efficacy, unless the drug is associated with a narrow therapeutic window. For dietary supplements, herbs and other nutrients in which the route of administration is nearly always oral, bioavailability generally designates simply the quantity or fraction of the ingested dose that is absorbed. Absolute bioavailability compares the bioavailability of the active drug in systemic circulation following non-intravenous administration (*i.e.*, after oral, buccal, ocular, nasal, rectal, transdermal, subcutaneous, or sublingual administration), with the bioavailability of the same drug following intravenous administration. It is the fraction of the drug absorbed through non-intravenous administration compared with the corresponding intravenous administration of the same drug. The comparison must be dose normalized (e.g., account for different doses or varying weights of the subjects); consequently, the amount absorbed is corrected by dividing the corresponding dose administered. In pharmacology, in order to determine absolute bioavailability of a drug, a pharmacokinetic study must be done to obtain a plasma drug concentration vs time plot for the drug after both Intravenous (IV) and extravascular (non-intravenous, *i.e.,* oral) administration. The absolute bioavailability is the dose corrected Area Under Curve (AUC) non-intravenous divided by AUC intravenous. The formula for calculating the absolute bioavailability, F, of a drug administered orally (pop) is given below (where D is dose administered). Therefore, a drug given by the intravenous route will have an absolute bioavailability of 100% (f=1), whereas drugs given by other routes usually have an absolute bioavailability of less than one. If we compare the two different dosage forms having same active ingredients and compare the two drug bioavailability is called comparative bioavailability.

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