Dose response: EC50, ED50, LD50

Important definitions

ED50: Median effective dose
The dose required to achieve 50% of the desired response in 50% of the population

TD50: Median Toxic dose of 50% for 50%:
The dose required to get 50% of the population reporting this specific toxic effect

LD50: Median lethal dose
The dose required to achieve 50% mortality from toxicity

EC50: Half maximum effective concentration
The concentration of a drug at which 50% of its maximum response is observed

LC50: Half lethal concentration
The concentration of a drug at which 50% mortality from toxicity is observed

These are derived from bell curves; i.e. in a population of individuals, there will always be variation in drug response – but a majority of them will respond roughly the same way to this drug, and that’s the fat part of the bell curve.

From "Goodman & Gilman's The Pharmacological Basis of Therapeutics" 11th ed by Brunton et al, and "Basic & Clinical Pharmacology" 11th ed. By Katzung et al