

Multi-objective dose-finding

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The main purpose of dose-escalation trials is to identify the dose(s) that is/are safe and efficacious for further investigations in later studies. In this talk I introduce dose-escalation designs that are based on information theory. I will first introduce the general concept for a single agent study before extending the ideas to multiple endpoints (e.g. dose-limiting toxicities and efficacy) and to combination schedule-trials. We evaluate the different design options via simulations and highlight more generally links to loss-functions. Finally I will highlight how the proposed criterion for escalation can also be used to yield more ethical dose-recommendations using traditional methods such as the CRM.