

## **ctDNA-Guided Oncology: From Minimal Residual Disease to ctDNA-RECIST**

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Circulating tumor DNA (ctDNA) has emerged as a transformative tool in precision oncology, offering dynamic, non-invasive insights across the cancer care continuum. This lecture will discuss ctDNA applications in clinical trial design towards routine practice, focusing on three key areas: minimal residual disease (MRD) detection, treatment monitoring, and follow-up. Special attention will be given to the evolving framework of ctDNA-RECIST – a novel response evaluation criteria based on quantitative ctDNA changes – and its integration in prospective trials. Examples of data from gastrointestinal cancer research will highlight how ctDNA-guided strategies may enable earlier detection of relapse, personalize adjuvant treatment escalation or de-escalation, and refine outcome prediction beyond radiological assessments during palliative systemic treatment in a pan-cancer setting.