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COURSE BROCHURE

AI for Clinical Trials and Research Training Course

6 – 10 December 2026
Muscat

jupiterprime.uk

info@jupiterprime.uk

Registered in the United Kingdom and Saudi Arabia

AI for Clinical Trials and Research Training Course

Ref: 93_2354 **Date:** 6 – 10 December 2026 **Location:** Muscat **Fees:** 6500 GBP

AI for Clinical Trials and Research is a 1-week training course for clinical research managers, trial coordinators, data managers and research and development leads, ending with a trial AI adoption plan for one study portfolio. Slow recruitment, costly site visits and growing data volumes delay studies, and machine learning now helps sponsors find patients and spot problems sooner. Jupiter Prime Training runs this AI for Clinical Trials and Research course.

Why AI for Clinical Trials and Research Matters Now

Sponsors face studies that miss enrolment targets and sites that struggle with complex protocols. Electronic health records, wearables and electronic data capture produce far more trial data than manual source verification can cover. Ethics committees and inspectors expect every computerised tool touching trial data to be validated and traceable. A research organisation that applies AI with sound validation shortens timelines and protects participants; one that adopts tools carelessly risks unreliable endpoints and inspection findings. The course draws on ISO/IEC 42001 for AI management and the NIST AI Risk Management Framework NIST AI RMF for assessing trial algorithms.

Who Gains Most from AI for Clinical Trials and Research

- Study managers who own timelines and site performance
- Trial coordinators who screen and enrol participants
- Data managers who clean and lock trial databases
- Pharmacovigilance and safety staff who review adverse events
- Research leads who choose technology for the study portfolio

A sponsor, contract research organisation or academic trials unit gains most when study managers, data managers and safety staff attend together and agree one validation route for every AI tool used on trial data.

AI for Clinical Trials and Research Capabilities

Participants work through protocol drafts, monitoring reports and query logs to decide where an algorithm speeds a trial and where it adds unacceptable risk.

- Assess protocol complexity and eligibility criteria with text analytics — study designers
- Design patient recruitment searches across health records — site investigators
- Specify risk-based monitoring indicators driven by anomaly detection — monitoring leads
- Test automated data cleaning and query suggestions — clinical data managers
- Apply safety signal detection to adverse event narratives — safety physicians
- Build validation evidence for AI tools used in regulated research — quality assurance

Key AI for Clinical Trials and Research Terms

- Risk-based monitoring — directing site oversight to the sites, data and processes that pose the greatest risk to participants and results.
- Electronic data capture — software sites use to enter trial data directly into the study database.
- Eligibility pre-screening — searching records for patients who may meet inclusion and exclusion criteria before formal screening.
- Safety signal — a pattern in adverse event data suggesting a possible new risk from the investigational product.
- Computer system validation — documented evidence that software performs reliably for its intended use on trial data.
- Synthetic control arm — a comparison group built from historical patient data instead of newly randomised participants.

AI for Clinical Trials and Research Day by Day

Day 1: The Trial Lifecycle and Its Bottlenecks

- Clinical Trial Lifecycle Map — From Protocol to Database Lock
- Recruitment and Retention Bottlenecks — Where Studies Lose Time
- Oncology and Vaccine Trial Cases — AI in Running Studies
- Trial Data Sources — Records, Wearables and Electronic Data Capture
- Participant Protection Principles — Consent and Data Use

Day 2: Protocol Design and Patient Recruitment

- Protocol Complexity Scoring — Amendment Risk Before Approval
- Eligibility Criteria Optimisation — Widening Access Without Losing Rigour
- Patient Pre-Screening From Health Records — Recruitment Forecasts
- Site Selection Models — Predicting Enrolment Performance
- Synthetic Control Arms — When Historical Data Is Acceptable

Day 3: Monitoring, Data Cleaning and Safety Signals

- Risk-Based Monitoring Indicators — Key Risk and Quality Tolerance Limits
- Anomaly Detection Across Sites — Fraud and Error Patterns
- Automated Query Suggestions — Data Manager Workload
- Adverse Event Text Mining — Coding and Signal Detection
- Medical Image and Endpoint Reading — Central Review Support

Day 4: Validation, Integrity and Oversight

- Computer System Validation for AI Tools — Intended Use Evidence
- Data Integrity and Audit Trails — Attributable and Traceable Records
- Model Change Control — Retraining During a Running Study
- NIST AI RMF Map and Measure — Trial Algorithm Risk
- ISO/IEC 42001 Controls — Roles, Records and Supplier Oversight

Day 5: Practising the Trial AI Adoption Plan

- Lifecycle Bottlenecks From Day 1 — Priority Use Cases
- Recruitment and Design Tools From Day 2 — Study Selection
- Monitoring and Safety Methods From Day 3 — Oversight Model
- Validation and Integrity Controls From Day 4 — Inspection Readiness
- Trial AI Adoption Plan — Portfolio-Ready Roadmap

Applying AI for Clinical Trials and Research After the Course

- Run an eligibility pre-screening query on one site's health records for an active study and compare candidates found with patients currently screened.
- Review one study's monitoring reports against risk-based indicators and propose which site visits could switch to central review.

AI for Clinical Trials and Research Questions FAQ

What is AI for clinical trials and research and why does it matter now?

AI for clinical trials and research is the use of machine learning and text analytics across protocol design, recruitment, monitoring and safety review. It matters now because studies face recruitment delays and data volumes that manual methods cannot handle.

Which roles gain most from AI for clinical trials and research training?

Study managers, trial coordinators, clinical data managers and safety staff gain most. Research and development leads also benefit, since they choose which tools enter the study portfolio.

How does AI for clinical trials and research differ from a course on AI in drug discovery?

It focuses on running human studies rather than finding molecules. You work on recruitment, site selection, monitoring, data cleaning, safety signals and validation of tools on trial data.

What do you bring back from AI for clinical trials and research training?

You bring back a trial AI adoption plan for your study portfolio, with priority use cases, oversight model, validation steps and data integrity controls ready for review.

AI for Clinical Trials and Research: The Way Forward

The trial AI adoption plan informs the first portfolio decision: which study gains an AI recruitment or monitoring tool next and what validation it needs first. Study managers, data managers and quality assurance use it together. After the first study milestone, revisit enrolment rates and query volumes, because site behaviour and data patterns change once algorithms enter daily trial work.