ESMO AI 2026 Preview – Clinical and AI / ML



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ESMO AI 2026 – New Trends in AI & Digital Oncology Treatment Strategy (1/3)

- **Multimodal foundation models will move towards integrated oncology applications**
  - ESMO AI 2026 will place multimodal AI and foundation models at the centre of the scientific discussion, with dedicated sessions on methodology and clinical applications. Topics will include combining imaging, pathology, molecular and clinical data, alongside the use of foundation models for scientific discovery and oncology decision-making. The keynote on multimodal foundation models and agents will further highlight interest in models that can work across different data types

- **Agentic AI will expand from research applications into operational oncology workflows**
  - Dedicated sessions will examine AI agents in biomedical discovery, healthcare institutions and the pharmaceutical industry. Startup Corner presentations will also address AI agents for clinical-trial data cleaning, medical review and oncology workflow management. The discussion will explore how autonomous and agentic systems could support specific tasks across research, development and clinical operations

ESMO AI 2026 – New Trends in AI & Digital Oncology Treatment Strategy (2/3)

- **Computational pathology and AI-enabled biomarkers will remain important areas of development**
  - The programme will feature research and industry presentations on digital pathology, spatial biology, foundation models and AI-based biomarker discovery. AstraZeneca will present work evaluating seven AI solutions for HER2 scoring, while other sessions will address pathology foundation models, spatial analysis and multimodal biomarker approaches. The discussion will examine how these technologies could support biomarker discovery and precision oncology

- **Real-world data and clinical information systems will underpin AI adoption**
  - Dedicated sessions will address real-world data, OMOP-based data standardisation, EHR integration and the use of unstructured clinical information. Research presentations will examine large language models for clinical-data extraction, data harmonisation and AI-ready oncology data infrastructure. These topics will highlight the importance of data quality, accessibility and interoperability in developing and deploying oncology AI

ESMO AI 2026 – New Trends in AI & Digital Oncology Treatment Strategy (3/3)

- **Human-AI collaboration and responsible implementation will shape clinical adoption**
  - The programme will address patient and clinician perspectives on AI, human-AI interaction, explainability and the implementation of AI-enabled decision-support systems. Dedicated sessions will explore implementation barriers, monitoring, regulatory considerations and the preparation of healthcare organisations for AI-enabled oncology workflows. The discussion will extend beyond model performance to the conditions required for responsible use in practice

- **Digital health will connect technology with supportive care and patient monitoring**
  - Sessions will cover wearable sensors in routine oncology practice, digital health in clinical trials, technology-enabled supportive care and digitally enabled cancer centres. Conference will also examine electronic patient-reported outcomes, virtual follow-up and digital interventions for symptom management and survivorship. These applications will position digital health as a complementary component of oncology care, alongside AI-based diagnostics and decision-support tools

Key Sessions To Watch

Date	Session Title (short)	Type	Author / Institution	Why Watch
16 Nov 2026	Precision medicine: Trials meet routine care	Stage Presentation	Patric Carolla; Ashita Batavia; Erin Fidyk; John Eckardt/ J&J	The presentation will examine digital pathology, patient identification in large datasets, data readiness and EHR-to-EDC trial technology, highlighting practical considerations for bringing precision medicine approaches into routine care
16 Nov 2026	Predictive modeling's next frontier in oncology drug development	Stage Presentation	Jessica Davies/ Flatiron Health	The presentation will explore how digital twins and predictive models using real-world data could inform oncology drug-development decisions, timelines and probability of success
17 Nov 2026	Multimodal foundation models and agents in oncology	Keynote lecture	Jakob N. Kather; Charlotte Bunne	The keynote will examine multimodal foundation models and AI agents in oncology, providing a central perspective on the development and potential applications of these emerging approaches
17 Nov 2026	AIforHeR: A rigorous evaluation of 7 AI solutions for HER2 scoring in breast cancer	Stage Presentation	Thomas Di Maio; Maya Grinwald; Gregory Taylor/ AstraZeneca	The presentation will compare seven AI solutions for HER2 scoring, with particular attention to the challenges of HER2-low and HER2-ultralow assessment and inter-pathologist concordance.
18 Nov 2026	Autonomous AI	Educational session	Guillaume Jaume; Federica Corso; Atanas Kamburov; Jakob N. Kather	The session will examine the use of AI agents in biomedical discovery, healthcare institutions and the pharmaceutical industry

Industry-Sponsored Sessions & Focus Areas – ESMO AI 2026



ESMO AI 2026– Competitive Landscape at a Glance (1/2)

Name	Sessions	Companies / Assets	Why It Matters
Multimodal AI and foundation models	Multiple	AstraZeneca; Nexomic; StratifAI; research on multimodal foundation models and AI agents	The programme will explore the integration of pathology, imaging, molecular and clinical data for oncology research and diagnostics
Computational pathology and AI biomarkers	Multiple	AstraZeneca; MSD; Fraunhofer IIS / MIKAIA; DoMore Diagnostics / Histotype Px®	Sessions will address biomarker discovery, HER2 scoring, spatial biology and AI-based pathology analysis
Agentic and autonomous AI	Multiple	Octozi; Gosta Labs; Kognitic; Qnomx; PAICON	Startup presentations and scientific sessions will examine AI agents for research, clinical workflows, data review and oncology operations
Real-world data and oncology data infrastructure	Multiple	Flatiron Health; Evinova; PAICON; EHDEN / OHDSI-related research	The programme will highlight EHR data extraction, data harmonisation, clinical-data readiness and real-world evidence generation

ESMO AI 2026– Competitive Landscape at a Glance (2/2)

Name	Sessions	Companies / Assets	Why It Matters
AI-enabled clinical decision support	Multiple	Johnson & Johnson; MSD; research on AI-assisted tumour boards and clinical decision support	The programme will examine how AI could support patient identification, clinical decision-making and multidisciplinary oncology workflow
AI in clinical trials and drug development	Multiple	Flatiron Health; myTomorrows; Octozi; Reesi; Risklick; TwinEdge Bioscience	Focus areas will include predictive modelling, trial recruitment, data review, protocol development and digital patient avatars
Digital health and patient engagement	Multiple	Evinova; research on wearables, ePROs, virtual follow-up and digital supportive care	Digital tools will be explored for patient monitoring, symptom management, survivorship and clinical-trial support
Responsible AI, validation and governance	Multiple	AstraZeneca; Qnomx; research on AI reliability, explainability, patient perspectives and regulatory frameworks	The programme will place reliability, transparency, validation and human oversight alongside AI performance

Key Industry-Sponsored Sessions at ESMO AI 2026 (1/4)

- **Johnson & Johnson:**
  - Focus Areas: Precision Medicine, Digital Pathology & Clinical-Trial Technology
  - Johnson & Johnson's session will explore precision medicine across clinical trials and routine care, with discussion of digital pathology, patient identification in large datasets, data readiness and EHR-to-EDC trial technology. The presentation will connect clinical perspectives and published work with the practical considerations involved in bringing these technologies into practice
- **Flatiron Health:**
  - Focus Areas: Predictive Modelling & Digital Twins in Oncology Drug Development
  - Flatiron Health's presentation will examine how digital twins and predictive models could support oncology drug-development decisions. The session will draw on the growing scale and depth of routine-care data to explore the potential role of real-world data in informing development timelines and probability of success

Key Industry-Sponsored Sessions at ESMO AI 2026 (2/4)

- **AstraZeneca:**
  - Focus Areas: Computational Pathology, Foundation Models & HER2 Scoring
  - AstraZeneca's programme will cover the evolution of computational pathology from quantitative clinical scoring towards data-driven biomarker discovery, including foundation models, few-shot learning, generative AI and multimodal analysis. A separate presentation will evaluate seven AI solutions for HER2 scoring using a real-world dataset enriched with HER2-null and HER2-ultralow cases. The discussion will focus on the performance of AI-based scoring tools and their potential application in routine pathology practice
- **Fraunhofer IIS:**
  - Focus Areas: MIKAIA & AI-Enabled Histopathology and Spatial Biology
  - Fraunhofer IIS will present MIKAIA, a no-code image-analysis solution designed for histopathology and high-dimensional biological data. The presentation will cover workflows across H&E, IHC, multiplex immunofluorescence, spatial proteomics and transcriptomics, and integrated multi-omics

Key Industry-Sponsored Sessions at ESMO AI 2026 (3/4)

- **MSD:**
  - Focus Areas: Digital Pathology & Precision Biomarker Development
  - MSD's presentation will examine the use of digital and computational pathology to develop quantitative, spatially aware and multimodal biomarkers. The session will also cover a scalable data infrastructure and model-development accelerator, alongside an image-analysis pipeline connecting AI-derived spatial features with clinical outcomes. Independent validation and clinical utility will be important considerations for AI-powered biomarkers
- **Boehringer Ingelheim:**
  - Focus Areas: T-Cell Engager Delivery & Technology Collaboration
  - Boehringer Ingelheim's session will explore how scientific collaboration and fit-for-purpose technology could help address challenges in T-cell engager delivery. The discussion with Ametris will focus on pre-competitive collaboration and the potential role of accessible technologies in supporting care teams in real-world settings

Key Industry-Sponsored Sessions at ESMO AI 2026 (4/4)

- **Nexomic Ltd:**
  - Focus Areas: Multiomic AI & Tumour Biology
  - Nexomic's presentation will explore how multiomic AI foundation models could integrate molecular data to identify clinically relevant biological states. The session will discuss their potential role in treatment-response prediction, patient stratification and the translation of complex molecular data into actionable oncology intelligence
- **myTomorrows:**
  - Focus Areas: Responsible AI for Clinical-Trial Recruitment
  - myTomorrows' session will present a framework for AI-assisted clinical-trial recruitment, covering pre-screening through to enrolment. The approach will incorporate scientific methods, human-in-the-loop review, privacy-by-design and integrated referral networks. The discussion will address how AI-assisted pre-screening could support patient referrals and reduce screening burden

Emerging AI Platforms & Development Areas

Asset / Company	2026 Presence
Polaris™ Breast / StratifAI	Session will examine the translation of multimodal AI into cancer diagnostics, using Polaris™ Breast as a case study
MIKAIA / Fraunhofer IIS	The presentation will cover a no-code AI-enabled image-analysis solution for histopathology, spatial biology and multi-omics
Histotype Px® Colorectal / DoMore Diagnostics	Startup Corner presentation will cover an AI-based prognostic biomarker using an H&E slide
Multiomic AI foundation models / Nexomic Ltd	The presentation will explore the integration of tumour biology data to support treatment-response prediction and patient stratification
Digital patient avatars / TwinEdge Bioscience	Presentation will examine patient-specific molecular insights at Phase III trial scale and their use in precision oncology
AI agents for trial operations / OctoziSt	Session will address AI agents for data cleaning and medical review in oncology trials
Evidence-first AI reporting / Qnomx	The conversion of genomic variant data into clinician reports with source visibility and human approval will be discussed
AI-assisted protocol development / Risklick	Presentation will examine AI-supported oncology protocol development

What We're Watching for Post-ESMO AI 2026

- Whether multimodal foundation models will demonstrate clinical value beyond research and benchmark settings, particularly across pathology, imaging and molecular data
- Whether agentic AI systems will progress from demonstrations to reliable deployment in healthcare institutions, pharmaceutical development and oncology workflows
- Whether AI-based pathology tools, including HER2 scoring solutions, will demonstrate sufficient validation for routine clinical use
- Whether real-world data quality, EHR integration and data harmonisation will emerge as the main enablers or constraints for oncology AI adoption
- Whether human-in-the-loop approaches, explainability and patient transparency will become essential requirements for clinical AI implementation
- Whether AI-assisted recruitment, protocol development and trial-data review will translate into more efficient clinical-trial operations
- Whether digital health tools, including wearables and ePROs, will become more integrated into supportive care, symptom monitoring and survivorship pathways
- Whether AI-generated synthetic data and digital twins will gain broader application in oncology drug development and clinical-trial design

Strategic Insights and Strategy Development is our focus

