

ARTIFICIAL INTELLIGENCE FORUM
**AI-BASED APPROACHES IN HPV-RELATED
CANCER PREVENTION AND CARE**

THURSDAY, MARCH 19 | 8.00 • 17.30

GENERAL COORDINATOR



Joseph Monsonego
France

MODERATORS



Laila Sara Arroyo Mühr
Sweden



Sreenath Madathil
Canada



Partha Basu
France



Nicolas Wentzensen
USA

Artificial Intelligence (AI) is transforming the landscape of medicine — and nowhere is this transformation more promising than in the prevention and management of HPV-related diseases.

From cervical screening to head and neck cancers, AI-driven technologies are opening a new era of precision, prediction, and personalized care. This forum brings together leading experts, clinicians, and data scientists to explore how AI can redefine our approach to screening, diagnosis, and therapeutic decision-making. The integration of deep learning, multimodal data, and real-time image interpretation is not only improving accuracy but also reshaping clinical workflows and healthcare accessibility across diverse settings.

As AI continues to evolve, its integration into clinical practice will demand not only technological innovation but also new ways of thinking about quality, ethics, and global equity in cancer prevention. This forum aims to spark that reflection and inspire the next generation of intelligent, data-driven healthcare solutions.

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AI 01 • ARTIFICIAL INTELLIGENCE FOR CERVICAL SCREENING

8.00 • 8.45

CHAIR: L. S. Arroyo Mühr (Sweden) • P. Basu (France)

This session will explore the latest advancements in applying artificial intelligence (AI) to cervical cancer screening. Four leading experts will present cutting-edge developments from international initiatives that leverage AI for image analysis, risk prediction, and automated decision support. Together, these contributions illustrate how AI may reshape screening programs and accelerate progress toward the elimination of cervical cancer.

AI 01-1 • Introduction

Arroyo Mühr L. S. (Sweden)

Basu P. (France)

AI 01-2 • Validating the HPV-Automated Visual Evaluation (PAVE) strategy

De Sanjosé S. (Spain)

AI 01-3 • n-Gyn: An AI-based solution for triaging HPV positive women

Basu P. (France)

AI 01-4 • AI-based risk stratification in HPV screening

Dillner J. (Sweden)

AI 01-5 • AI in the clinical management of HPV-positive women

Madathil S. (Canada)

Discussion and Q&A

AI 02 • SMART SCREENING TO PRECISION CARE: OPPORTUNITIES FOR ARTIFICIAL INTELLIGENCE IN HPV RELATED & OTHER HEAD & NECK CANCERS

8.45 • 9.30

CHAIR: S. Madathil (Canada)

Head and Neck Cancer (HNC), including HPV-associated oropharyngeal disease and oral potentially malignant disorders, shows rising incidence, late detection, and heavy survivorship burden worldwide. Advances in AI enable risk stratification from clinical and behavioral data; image-based community and dental screening; multimodal prognostic modeling fusing imaging, pathology, and molecular (HPV, genomics) data; and adaptive treatment and follow-up support. Translation lags because datasets remain fragmented, models fail across sites, and predictive uncertainty is rarely communicated, yet crucial for triage and counseling, especially in low-resource settings. This fast-paced forum will focus on trustworthy pathways to embed AI across the HNC continuum. A moderated discussion will synthesize regulation, workflow integration, patient communication, and engaging audience input. Aligned with EUROGIN's mission to reduce the burden of HPV-related disease through prevention, screening, and translational research, the session broadens the lens to encompass the wider Head and Neck Cancer spectrum while retaining a strong focus on HPV-driven oropharyngeal intersections.

AI 02-1 • Introduction

Madathil S. (Canada)

AI 02-2 • Web-based systems for toxicity prediction in head and neck cancer

Marai G. E. (USA)

AI 02-3 • NOra: AI-driven prescriptive workflow for oral cancer detection

Pathak S. (USA)

AI 02-4 • Privacy and security considerations in multi-institutional collaboration for AI model development and deployment

Dekker A. (Netherlands)

Discussion and Q&A

COFFEE BREAK

9.30 • 10.00

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AI 03 • PREDICTIVE AI AND IMAGING APPROACHES IN CERVICAL SCREENING AND MANAGEMENT

10.00 • 11.00

CHAIR: N. Wentzensen (USA)

Our field has seen important advances in artificial intelligence over the last decade, which have led to development of classification algorithms for cervical screening and management that are now entering clinical practice. In this session, we will describe general principles of digital imaging and AI algorithm development and show how they are applied to cervical cytology, dual stain cytology, and cervical histology. The speakers will introduce AI-based applications that are at different development stages and particularly focus on how these technologies are already or will be integrated in cervical screening and management algorithms.

AI 03-1 • Introduction	Wentzensen N. (USA)
AI 03-2 • Approaches to digital imaging and AI algorithm development	Grabe N. (Germany)
AI 03-3 • Evaluation of AI-based pap cytology	Bergeron C. (France)
AI 03-4 • Evaluation of automated dual stain for triage of HPV-positives	Wentzensen N. (USA)
AI 03-5 • AI-based evaluation of cervical histology	Miranda Ruiz F. (Germany)

Discussion and Q&A

LUNCH BREAK

11.00 • 14.00

AI 04 • COLPOSCOPY CASE STUDIES: AI LIVE DIAGNOSIS AND DECISION MAKING

14.00 • 15.30

CHAIR: J. Monsonego (France)

For the first time in an international forum, this unique interactive session will bring colposcopy into the era of Artificial Intelligence. Six real clinical cases will be presented by expert colposcopists, each sharing their visual assessment, diagnostic impression, and management decision. In a groundbreaking format, every case will then be submitted live to the audience for diagnostic evaluation, allowing participants to compare their impressions with those of the experts — and finally with the AI model's prediction displayed in real time. This dynamic exchange will provide an unprecedented opportunity to explore how AI can assist clinicians in improving diagnostic consistency, objectivity, and confidence in managing HPV-related lesions. It will also highlight concordances, discrepancies, and the added value of human-AI collaboration in clinical decision-making. Join us for this live, high-impact experience that bridges clinical expertise, audience participation, and cutting-edge AI technology — a glimpse into the future of colposcopy.

AI 04-1 • Introduction

Madathil S. (Canada) • **Monsonego J.** (France)

AI 04-2 • Case studies

- **Lua R.** (Mexico)
- **Preti M.** (Italy)
- **Hampl M.** (Germany)
- **Milerad H.** (Sweden)

Discussion and Q&A

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COFFEE BREAK

15.30 • 16.00

AI 05 • SUBMITTED PAPERS

16.00 • 17.30

CHAIR: S. Madathil (Canada) • N. Wentzensen (USA)

AI 05-1 • Artificial intelligence for individualized cancer risk prediction in cervical screening	Garcia Serrano A. (Sweden)
AI 05-2 • Deep learning-assisted versus manual reading in routine cervical cytopathology: A multicentre randomised crossover trial	Xue P. (China)
AI 05-3 • Reduction in cytological triage after a positive HPV self-test: Performance of CIN3+ prediction based on HPV viral load, age, and screening history	Kroon K. (Netherlands)
AI 05-4 • Automation for HPV-based screening: A time and motion study	Hawkes D. (Australia)
AI 05-5 • Improving workforce efficiency using AI-assisted digital cytology: A model-based evaluation for the NHS cervical screening programmes	Wilson A. (UK)
AI 05-6 • Towards comprehensive AI-assisted colposcopy: Automatic differentiation of cervical, vaginal, and vulvar HSIL and LSIL lesions	Castro I. (Portugal)
AI 05-7 • AI in colposcopy: A promising alternative to VIA for cervical cancer screening in Cambodia	Paulikat M. (Germany)
AI 05-8 • Artificial intelligence as a potential tool to manage increased gynaecological inquiries faced by a patient advocacy organisation in the United Kingdom	Lamnisos A. (UK)
AI 05-9 • Empowering cervical cancer screening in Africa: The role of artificial intelligence and medical students when expert access is limited	Gutierrez M. (Spain)
AI 05-10 • Bridging the communication gap: Family physician-specialist referral challenges and AI-enabled solutions in Canadian healthcare	Malouin M. (Canada)
AI 05-11 • Artificial intelligence-assisted decision-making to improve vulnerable women's participation in cervical cancer screening in France – design and early implementation of a cluster randomized trial	Selmouni F. (France)