



Special Track Session 13

AI Committee

Wednesday, October 21, 08:00–09:30

Session Title

Debate: Digital Twins in Nuclear Medicine

Moderators

Lidia Strigari (Bologna, Italy)

Kuangyu Shi (Bern, Switzerland)

Point of view: The Light Side Of Digital Twins

Lara Cavinato (Milano, Italy)

Point of view: The Dark Side Of Digital Twins

Dimitris Visvikis (Brest, France)

Educational Objectives

1. Critically evaluate the clinical potential and current limitations of digital twins in nuclear medicine.
2. Understand the ethical, regulatory, and technical challenges associated with implementing digital twins in clinical practice.
3. Assess the impact of digital twins on the future of precision medicine and nuclear medicine workflows.

Summary

Digital twins are emerging as a transformative technology with the potential to reshape precision medicine by creating dynamic, patient-specific virtual models that integrate imaging, biological, and clinical data. In nuclear medicine, they promise to improve diagnosis, personalise radionuclide therapy, optimise dosimetry, and support clinical decision-making. However, significant scientific, technical, ethical, and regulatory challenges remain before their widespread clinical adoption. This debate session will bring together experts with diverse perspectives to examine the opportunities, limitations, and future role of digital twins in nuclear medicine, fostering a critical discussion on whether this technology is ready to move from concept to clinical reality.

Key Words

Digital Twins; Artificial Intelligence; Patient-Specific Modelling; Virtual Patient