



CME Session 3

Physics + Paediatrics Committee

Sunday, October 5, 15:00 – 16:30

Session Title

Low Dose Imaging

Chairpersons

Pinar Kiratli (Ankara, Türkiye)

Floris van Velden (Leiden, Netherlands)

Programme

- 15:00 – 15:20 **John Dickson** (London, United Kingdom): Where are we now, and how low can we go?
- 15:20 – 15:45 **Laetitia Imbert** (Nancy, France): Role of AI in low dose imaging
- 15:45 – 16:10 **Sasha Ivashchenko** (Groningen, Netherlands): Role of Total Body PET in low dose imaging
- 16:10 – 16:30 **Pietro Zucchetto** (Padova, Italy): Nuclear medicine imaging of vulnerable patients

Educational Objectives

1. Recent technological advances in hardware that enable low-dose PET and SPECT imaging
2. Clinical applications of low-dose PET and SPECT imaging
3. The role of AI in low-dose PET and SPECT imaging

Summary

Low-dose PET and SPECT imaging refers to the use of reduced levels of radiopharmaceuticals during PET and SPECT scans to minimize radiation exposure to both patients and personnel, while still obtaining high-quality diagnostic images. Recent advances in both hardware and software have enabled new clinical applications in low-dose imaging. These technological advancements include, but are not limited to, long axial field-of-view cameras (extending to total-body systems), digital detector technology, and artificial intelligence-based reconstructions. These innovations could lead to expanded clinical applications in pediatric imaging, as well as for more benign diseases and screening purposes.

Key Words

Low dose imaging; PET; SPECT; total body PET; CZT SPECT; paediatric imaging; paediatrics; artificial intelligence