

Düsseldorf, Germany

## Mini Course 1 (Technologists)

Sunday, October 14, 14:30-15:30

### Session Title

**Non-Imaging Nuclear Medicine Diagnostic**

### Chairpersons

Giorgio Testanera (London)

Pedro Fragoso Costa (Essen)

### Programme

14:30 - 15:00 Pedro Fragoso Costa (Essen): Isolated Limb Perfusion – Experimental Innovation

15:00 - 15:30 Maria Burniston (London): State of the art of GFR and Platelet studies in Nuclear Medicine

### Educational Objectives

1. Get acquainted with the existing variety of non-imaging diagnostic procedures in the context of Nuclear Medicine
2. Explain the context in which those procedures are used and what are the advantages when compared with imaging procedures
3. Discuss technical and clinical challenges of performing accurate non-imaging diagnostic procedures.
4. Understand the additional concerns involved with intra-operative procedures

### Summary

Nuclear Medicine (NM), in its ever-evolving nature, is looked at with interest for the possibility to add quantitative measurement to visual assessment. With this trend, although a minority in frequency, non-imaging procedures have an established use in *in vitro*, external probe *in vivo* or even intraoperative *in vivo* investigations. The probe studies assess very low activities of radiopharmaceutical that would be hard to image or provide results with an high degree of uncertainty. In some specific clinical cases, like assessing nephrotoxicity of chemotherapy agents, accurate measurement is a key factor to ensure proper patient care.

*In vitro* application, connected or not with imaging assessment, can provide important physiological parameters with very low activity injected to patients and consequent reduced exposure to both patients and staff.

*In vivo* applications of non-imaging nuclear medicine procedures can also be used as a monitoring of certain operative therapies, as is the case of the isolated limb perfusion.

In this minicourse we will cover basic principles of non-imaging NM examinations main clinical applications, standard operational procedures and possible pitfalls and artefacts.

### Key Words

Non-Imaging Detectors, Isolated Limb Perfusion, Probes, GFR, Platelets, In Vitro, In Vivo, quantitative assessment

### Take Home Message

Although not so versatile as imaging Nuclear Medicine procedures, non-imaging nuclear medicine is a very sensitive method and can provide very elegant solutions for non-standard operational procedures.