IAEA Free Webinar

Tips and tricks in CT

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Presenter: **Prof. Guy Frija and Dr. Joana Santos**

Organized jointly with the EuroSafe Imaging campaign of the European Society of Radiology

EuroSafe Imaging is the European Society of Radiology's flagship campaign to promote quality and safety in medical imaging. The mission of EuroSafe Imaging is to support and strengthen medical radiation protection across Europe following a holistic, inclusive approach.

The escalated use of computed tomography (CT) in medical imaging, both for diagnostic and therapeutic procedures, is significantly contributing to the increased patient exposure to ionising radiation and consequently to increased population dose, especially in developed countries.

It is well known that the exponential development of CT technology has contributed to the improvement of image quality and faster CT examinations in a relatively short period of time. However, if those technological advances are not used correctly the average radiation dose delivered per examination can increase and therefore not contributing for the benefits of patients.

The correct patient positioning at the gantry isocenter, the exposure parameter selection according to the patient size, the reduction of image acquisition series and the limitation of the scan length are some aspects that will make a high impact in dose reduction when used properly. Nevertheless, it is important to take into account that CT dose values must be kept in levels that guaranty a "diagnostic image" according to the "clinical task" in order to respond to a given diagnostic question. The importance of this balance must be recognised by the "radiological family", by integrating in daily practice a system to optimise CT procedures.

According to the recommendations, CT optimisation measures must be effectively used

in daily practice in order to promote patient safety and develop a radiation protection culture.

Learning objectives

1. To become familiar with EuroSafe Imaging;
2. To learn about the activities of EuroSafe Imaging and how to engage;
3. To consolidate knowledge regarding current radiation dose levels used in CT;
4. To understand dose optimisation measures using scanner technological features;
5. To be aware of the impact of dose optimisation on patient dose and image quality.

Presenters

Guy Frija is Professor Emeritus at Université Paris Descartes (FR), Professor at Mac Master University (CA), radiologist consultant at the Paris Georges Pompidou European Hospital (FR), and chair of EuroSafe Imaging, a multi-stakeholder and holistic approach of radiation protection based on the IAEA/WHO Bonn Call for Action, an initiative of the ESR. During his various positions in the European Society of Radiology (ESR), he also stimulated the setting up of a radiation protection committee. He was involved in the development of ESR's clinical decision support system for improving the justification process. He has published more than 150 articles in peer review journals.

Joana Santos, PhD, Adjunct Professor, is former head of Medical Imaging and Radiotherapy Department at Coimbra Health School of the Polytechnic Institute of Coimbra, Portugal. She is Head of the Coimbra Health School WHO collaborative Centre for Radiation Protection and Health. Her research interests are diagnostic imaging dosimetry, quality control, image quality analyses and optimisation. She was involved in the development of the Portuguese CT Diagnostic Reference Levels. She is author and co-author of a large number of scientific oral communications, conference abstracts and papers in radiation protection and optimisation.