

## NSRT Conference – 2019

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### **Title: Radiation Units – From BERT to Bananas**

This presentation provides a comprehensive update of the most up-to-date and commonly used metrics for the quantification of medical radiation exposure. The units of exposure, absorbed dose, and equivalent dose will be reviewed. The important role of effective dose for accurate radiation risk assessment will be discussed. Participants will gain a deeper understanding of the most common dose metrics and will also learn about some of the newest units including BERT, DAP and DRL's.

### **Objectives**

Upon completion of this session the attendee will be able to:

1. Outline the metrics traditionally used to quantify radiation exposure and dose.
2. Compare and contrast absorbed, equivalent and effective dose, as they relate to radiation exposure to patients and practitioners.
3. Describe the role of effective dose in the assessment and communication of radiation risk to patients.
4. Identify and define the latest exposure, dose and risk metrics including dose area product (DAP), relative risk level (RRL), diagnostic reference level (DRL) and background equivalent radiation time (BERT).

### **Outline**

- A. Introduction
  - 1) Brief history
  - 2) Importance and value of dose units
- B. Traditional Dose Metrics
  - 1) Exposure
  - 2) Absorbed dose
  - 3) Equivalent dose
  - 4) Effective Dose
- C. Effective dose and radiation risk
  - 1) Calculation of effective dose
  - 2) Risk assessment
  - 3) Epidemiological data comparison
- D. New dose metrics
  - 1) Dose area product (DAP)
  - 2) Diagnostic reference level (DRL)
  - 3) Relative risk level (RRL)
  - 4) Background equivalent radiation time (BERT)
- E. Best and worst practices
  - 1) Dose comparisons
  - 2) Banana equivalent dose (BED)