

University of Wisconsin-Madison



Medical Physics Seminar Monday, January 23, 2017 1325 HSLC — 4:00 PM



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Radiation Safety in Medical Imaging

The actual and possible detrimental effects of radiation from medical imaging have been frequently in the news over the last decade. Most of this discussion has centered on computed tomography and its increasing use in medical diagnosis. This has resulted in beneficial discussions on how we can reduce unnecessary radiation, but has also resulted in unfounded fears in many concerning the radiation from medical imaging and the resultant avoidance of needed imaging procedures.

This talk will provide information on the basics of radiation and its possible clinical effects. It will cover the following topics:

- **Radiation and Radiation Units**
- **Perspectives on Radiation Levels : Natural Exposures and Man-made**
- **Radiation Effects – with Study Data:**
 - **Deterministic Effects**
 - **Stochastic Effects, including arguments concerning the validity of the Linear No-Threshold Hypothesis**
 - **Effects on the Conceptus**
- **Dose Limits for occupational exposures and exposures to the general public**
- **Minimizing Radiation Dose to the Clinician and Patient in Medical Imaging Procedures**

While it is important in medical imaging to avoid unnecessary radiation exposure to the patient, it is even more important to provide adequate clinical image quality for proper diagnosis. The radiation dose should never be lowered to the point that important diagnostic information is compromised.