

The background features a dark blue gradient with faint, light blue concentric circles and degree markings (40, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260) on the left side, suggesting a circular scale or a medical imaging context.

SNEAK PEAK OF THE READING ROOM: WHAT RADIOLOGISTS LOOK FOR IN CT EXAMS

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VUMC DEPT. OF RADIOLOGY AND RADIOLOGIC SCIENCES

DISCLOSURES

- Galil Medical Consultant
- NIH funding for CEUS

WELCOME TO THE READING ROOM

- What makes a good exam?
- When is it too good?
- How to achieve a balance.

PERSPECTIVE

- Radiologist
 - Perception
 - Qualitative
- Physicist
 - Measured
 - Quantitative

TOUR OF THE READING ROOM



NOTHING GETS DONE WITHOUT THE TEAM



WHAT DO RADIOLOGISTS USE TO MAKE A DIAGNOSIS?

- Lesion or pathology to background contrast discrimination
- Morphology
- Pattern recognition
- Textural differences
- Structured approach and knowledge of normal

WHAT MAKES A “GOOD EXAM”

- Appropriate technique
- Appropriate coverage
- Appropriate phases

RISKS FROM IONIZING RADIATION

- Deterministic-high dose immediate damage
- Stochastic-additive lower dose long term damage (increasing risk with increasing dose but effect unrelated to dose)

DOSE REDUCTION, HOW LOW CAN YOU GO?

- Patient
- Indication
- Guidelines from survey studies with large scale distribution of delivered dose.

ALARA

TECHNICAL FACTORS TO BE CONSIDERED

- Overlapping scans/Coverage
- Pitch
- Beam energy
- Photon Fluence
- Beam collimation
- Attenuation related dose modulation (tube current)
- Iterative reconstruction
- Reconstructions

ADMINISTRATION OF IODINATED CONTRAST

- Weight-based dosing has been shown to improve organ and vessel enhancement.
- Dual energy scanning allows us to decrease contrast dose.
- Smaller doses may not be as critical given decreased concern for CIN in patients with eGFR >30 ml/min.
- Split bolus dosing may decrease number of phases needed.
- In reality in many practices dose is determined by packaging.

SPLIT BOLUS INDICATIONS

- Urography
- Enterography
- Trauma
- Pancreatic imaging

PROTOCOL MANAGEMENT TEAM

- Lead CT Radiologist
- Section Lead Radiologists
- Medical Physicist
- Lead CT technologist
- Project Manager
- Quality Management consultant
- Quality Management fellow
- IT support

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Compliance with AAPM Practice Guideline 1.a: CT Protocol Management and Review — from the perspective of a university hospital

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POINTS TO CONSIDER

- Active protocol management is key to maintaining quality and safety.
- Technologists are the “gateway” to protocol implementation.
- Techniques are always balanced with pre-test probability.