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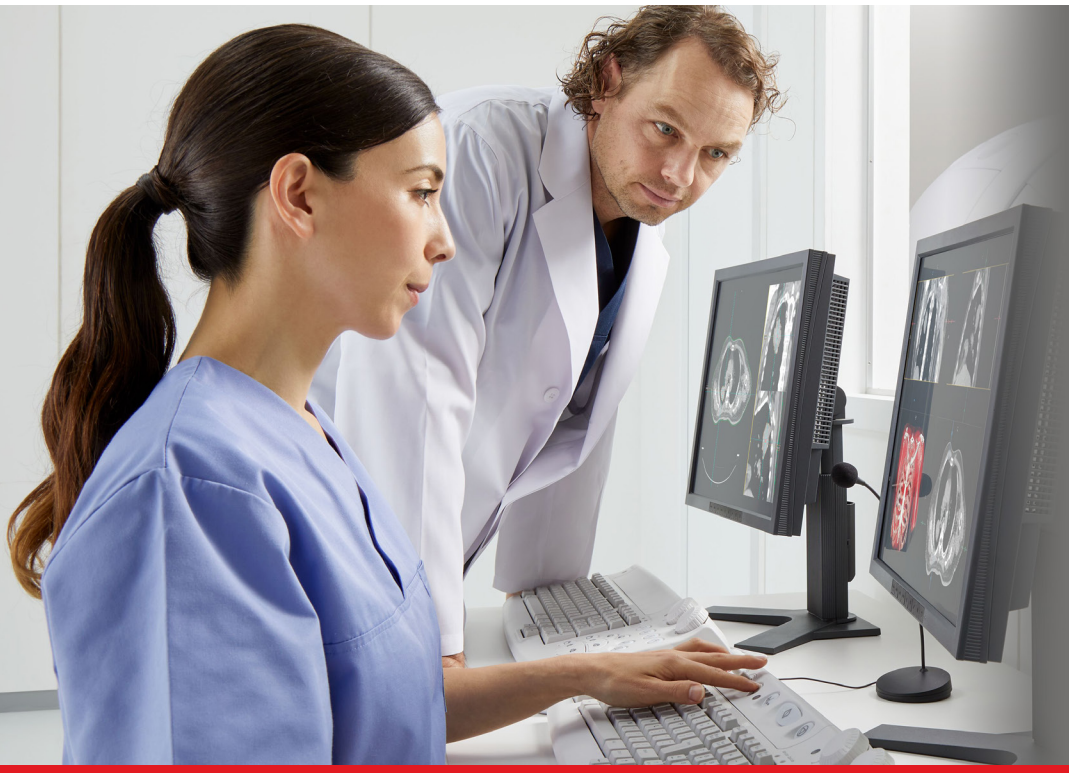
# PET/CT



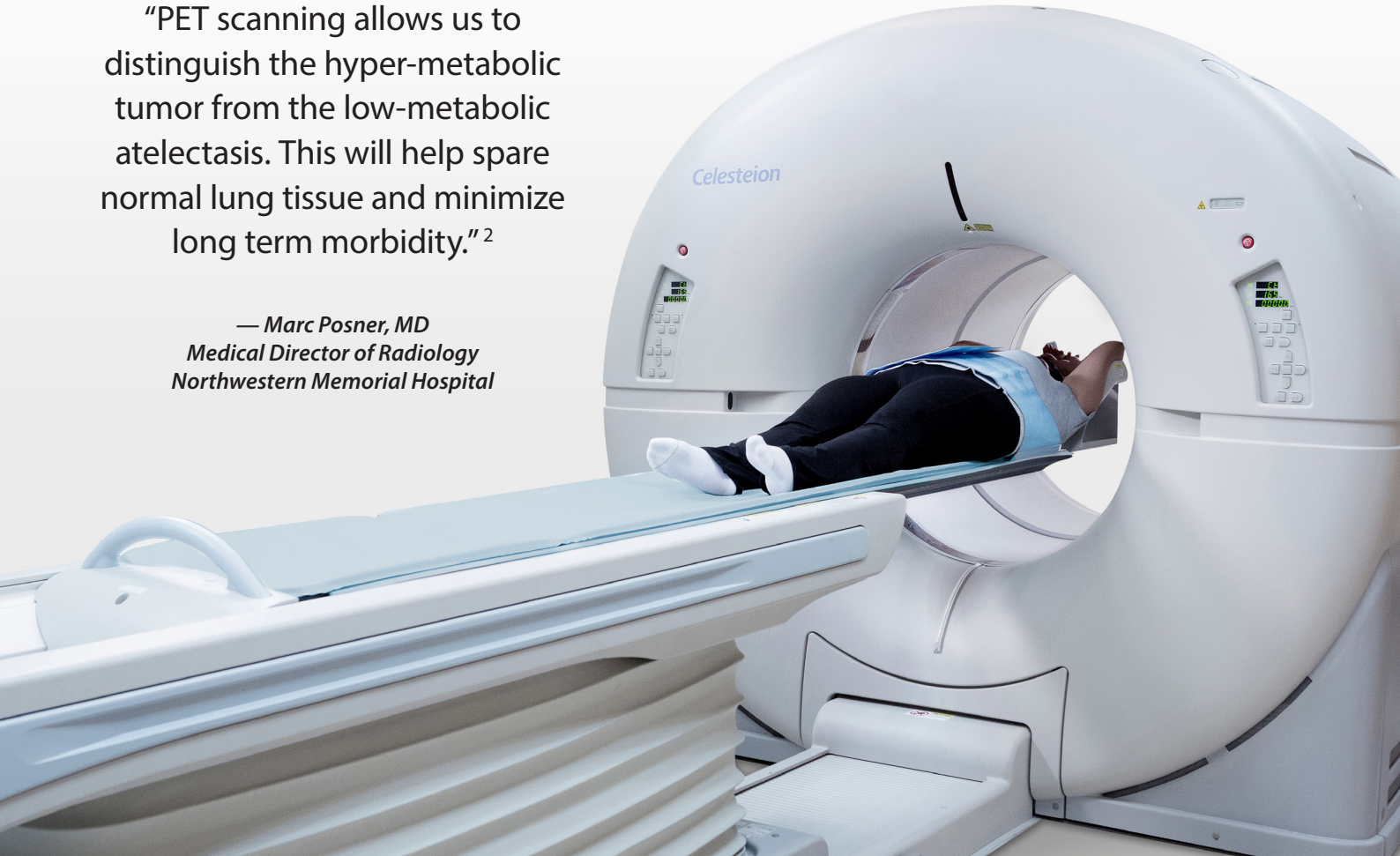
## Defining the Need for Advanced Tools

"Scans with insufficient quality may greatly affect the treatment planning process, potentially resulting in the target receiving insufficient dosage and/or extra toxicity to the organs-at-risk (OAR)s." [1]

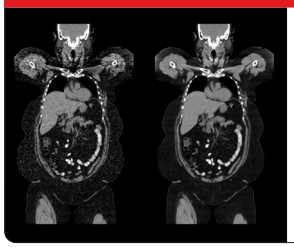
## Advanced Tools for Radiation Oncology

"PET scanning allows us to distinguish the hyper-metabolic tumor from the low-metabolic atelectasis. This will help spare normal lung tissue and minimize long term morbidity." [2]

*— Marc Posner, MD*
*Medical Director of Radiology*
*Northwestern Memorial Hospital*

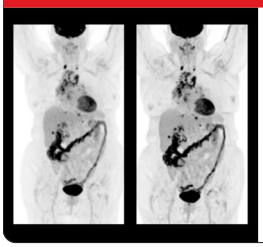


## Artificial Intelligence for CT[3]



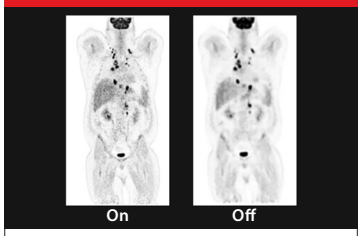
- Advanced Intelligent Clear-IQ (AiCE) fully integrates Deep Learning Reconstruction (DLR) technology with sharp, clear, and distinct images, at low dose
- AiCE supports improved image quality and dose reduction

## Artificial Intelligence for PET[3]



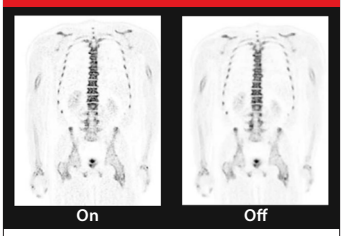
- Advanced Intelligent Clear-IQ Engine (AiCE) uses Deep Learning Reconstruction (DLR) for a next-generation approach to image reconstruction
- AiCE can be used to improve image quality and reduce scan times

## Time-of-Flight (ToF)



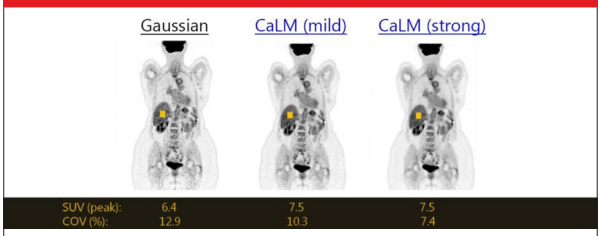

Can be used to improve image quality, optimize injected dose[4], and improve scan time as compared to scans without TOF

## Point Spread Function (PSF)[5]



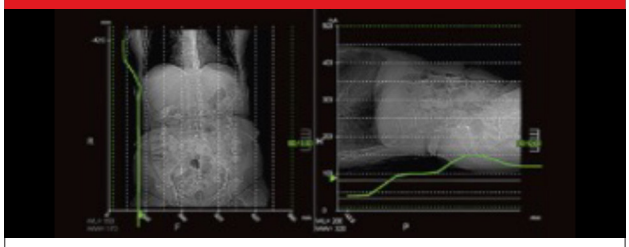

Delivers high image quality and high quantitative performance with improved uniformity across the FOV

## Clear Adaptive Low-noise Method (CaLM)[6]



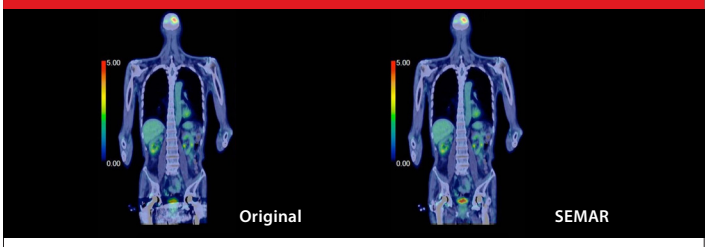

- Preserves detail and lesion contrast while reducing overall image noise
- Superior performance in suppressing noise without time penalty compared to reconstruction without CaLM

## Dose Management Features



- AIDR 3D – Iterative noise reduction tool to help lower dose
- SUREExposure – Dose modulation tool for personalized dose management
- SUREkV – Provides for an automatic kV selection based on the patient size and the target image quality level

## See more with Single Energy Metal Artifact Reduction (SEMAR)




- Automated metal artifact reduction
- Robust performance
- No dose penalty
- Built into scan protocol or can be used retrospectively in raw data
- Standard advanced clinical application

## Edge to Edge Field of View

**Largest Standard Axial PET Field of View[7]**
- 27 cm axial field of view for Cartesion Prime
- 19.6 cm for Celesteion

**Extended FOV**
- 85 cm Extended FOV for Celesteion
- 70 cm Cartesion Prime Extended FOV

**CT Diagnostic Field of View**
- 70 cm True FOV (Scan field-of-view)

[1] J Appl Clin Med Phys. 2021 Jun; 22(6): 198–223. Published online 2021 May 3. The application of metal artifact reduction methods on computed tomography scans for radiotherapy applications: A literature review Sathyathas Puvanasunthararajah[1,2], Davide Fontanarosa[1,2], Marie-Luise Wille[2,3,4], and Saskia M. Camps
[2] The clinical results, performance and views described are the experience of the clinicians. Results may vary due to clinical setting, patient presentation and other factors
[3] Optional for Cartesion Prime, not available for Celesteion.
[4] Optimization of injected dose is only recommended within the dosing ranges that appear in approved drug labeling
[5] Optional for Celesteion
[6] Driessen RS, et al. J Am Coll. Cardiol 2019:73:161-73, figure adapted from table 4
[7] Based on competitive data at time of publication. Data on file.

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