



HeartSafe Imaging

the safest way to image

Want to improve your patient care expectations? Provide patients with a lower dose and improved comfort (reduced time on camera) and they will refer their friends and family.

Your patients deserve to be safe...HeartSafe

HeartSafe is good for:



Patients – Less time on the camera AND less radiation exposure. The UltraSPECT software allows you to lessen camera acquisition time while using a reduced unit dose. Your patients will feel safe knowing you are taking a proactive role in their well-being by using the safest dose possible.



Doctors – Our physician trials have reported greater clarity and overall image quality with the Wide Beam Reconstruction. This software allows for greater confidence in interpretation.

- The system was clinically evaluated by Duke University and Vanderbilt University Medical Centers.



Technologists – Maximize the value of your Nuclear Medicine Department. Less radioactivity means less radiation...Something we could all have less of. Be compliant with dose reduction guidelines from the American Society of Nuclear Cardiology (ASNC).

- Our Low Residual syringes allow for dose accuracy
- Brand Cardiolite has been the standard for over 17 years in cardiac imaging
- LEU – Low Enriched Uranium doses. Most nuclear medicine doses use High Enriched Uranium (HEU). President Obama signed an Act seeking to eliminate HEU by 2016



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**How can I possibly reduce camera time....
isn't the software going to miss something?**

Wide Beam Reconstruction, SPECT acquisitions can be made twice as fast, or even four times as fast, without sacrificing image resolution. Alternatively, patient radiopharmaceutical doses can be reduced, again without compromising image quality

The Problem in Current Gamma Cameras

The resolution and sensitivity trade-off problem in gamma cameras is systemic; the image resolution and the image sensitivity of the collimation system are inversely related. The collimator geometry required to produce high-resolution images, namely long-bore, small-hole and thick-septa collimation, limit the number of photons reaching the detector crystal to the ones that are nearly perpendicular to it. This results in lower image sensitivity. The more limiting the collimators are, the higher the image resolution that can be obtained. However, as resolution is improved, sensitivity is compromised. Thus, there is a clear trade-off between the sensitivity and resolution of the system. Reduced sensitivity is generally compensated for by long acquisition times and/or high radiopharmaceutical doses typical of Nuclear Imaging.



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Is UltraSPECT just using filters to make my image look better?

No, Wide Beam Reconstruction, UltraSPECT's exclusive reconstruction algorithms technology resolves the sensitivity and resolution trade-off problem that is inherent to the gamma camera, and which is critical in SPECT imaging. In SPECT the patient data acquired in a series of 2-dimensional (2D) images, or projections, are back-projected in the reconstruction process into a virtual 3D space yielding an image, or a series of images, very similar to the real 3D distribution of the radioisotope within the body

Unlike current SPECT reconstruction technologies, WBR does not assume the photon rays detected by the detector crystal to be perpendicular to it. Rather, it employs an intelligent and accurate, iterative image reconstruction process that enables simultaneous resolution and contrast recovery coupled with noise suppression based on an accurate physical modeling of the photon emission and detection. The model compensates for the collimator's "beam spread function" effect and automatically adjusts for the distance from the patient. The WBR advantage is utilized to shorten the acquisition time, lessen the radiopharmaceutical dose, and improve image quality.



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