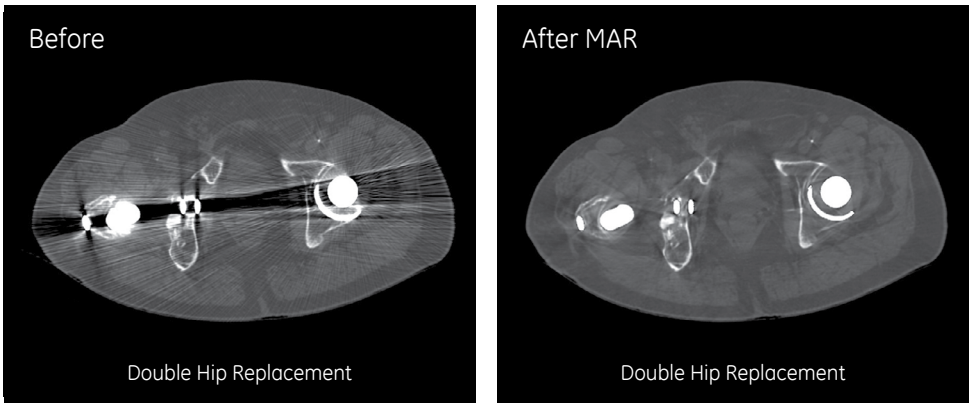
GE Healthcare

Smart Metal Artifact Reduction (MAR)

Exceptional image quality brings treatment plans clearly into focus.



When utilizing computed tomography (CT) scans, clinicians are often challenged by image distortions caused by high-z metals in the body such as prosthesis, screws or dental fillings. Metals often generate streak-like artifacts in CT scans, making it difficult for clinicians to clearly delineate between tumors and healthy tissue. Without precise definition, radiation oncology teams may develop less-than-optimal treatment plans.

MAR is based on the latest in GE Healthcare smart technology. It is designed to reveal anatomic details obscured by metal artifacts, as it:

- Utilizes an innovative projection-based method
- Helps to reduce photon starvation, beam hardening and streak artifacts caused by metal in the body, such as hip implants

MAR addresses the challenges posed by metal artifacts, helping clinicians utilize CT scans, diagnose disease and contour targets and critical organs with greater confidence.

- **Exceptional image quality.** MAR uses a three-stage, projection-based process to help deliver consistent, enhanced image quality.
- **Streamlined workflow.** Unlike some other approaches, the MAR solution requires only one scan, making the process of obtaining a corrected image fast and efficient.
- **Dose conscious.** MAR requires just a single scan to create an exceptionally clear image, helping you to deliver dose conscious care.
- **Increased patient comfort.** The efficient, single-scan process helps to reduce patient time inside the scanner.
- **Versatility.** MAR is designed to enhance clarity across a range of cases with metal including scans with hip implants, dental fillings, screws or other metal in the body.
- **Compatibility.** MAR is compatible with a wide range of GE widebore CT simulators.[1]

Innovative projection-based method delivers exceptional CT image quality.

Our metal artifact correction technology uses an automated, three-stage projection-based process to help improve the quality of CT data within the projection space, rather than in image space. This projection-space correction leads to images that are consistent with the uncorrected image and of exceptional image quality.

Stage One:

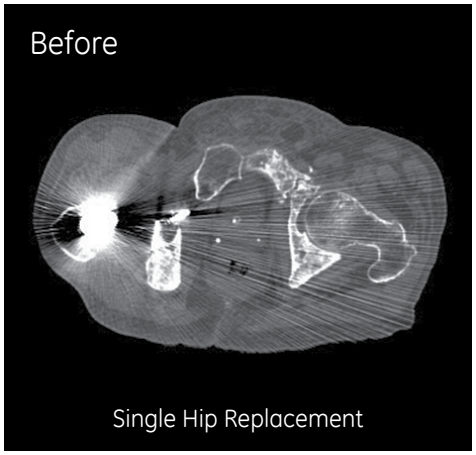
Corrupted samples in the projection that correspond to metallic objects are identified.

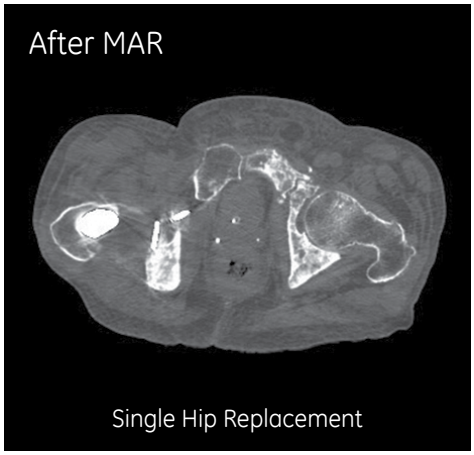
Stage Two:

Inpainted data is generated by replacing the metal corrupted projections with the corrected data. The corrected data is generated using the forward projection of the classified image.

Stage Three:

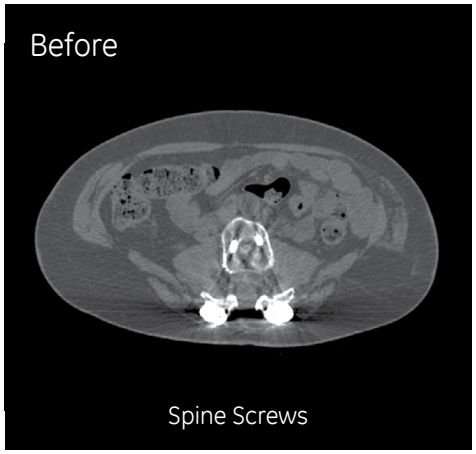
The final corrected projection is generated using a combination of the original projection data and the inpainted projection, revealing anatomic details hidden beneath the artifacts.

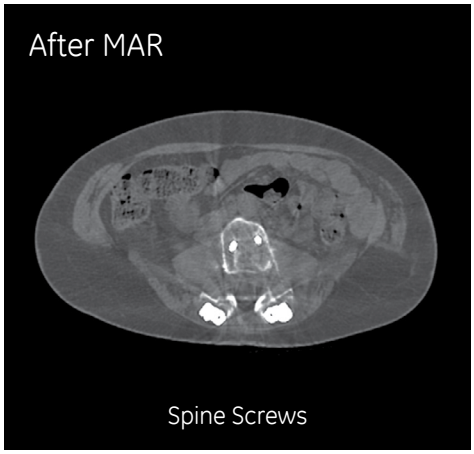












Learn more about MAR from GE Healthcare.

Visit our website at www.gehealthcare.com/MAR

View a video about MAR

Contact a GE Healthcare sales representative

YouTube GE Healthcare @GEHealthcare

[1] Ask a GE Healthcare sales representative for details.

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