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# Reduce the Presence of Metal Artifacts During CT Exams

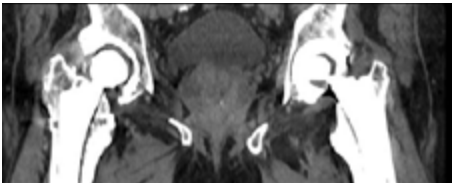
With our iterative Metal Artifact Reduction (iMAR) technology.



**CT scanners are powerful diagnostic tools**, yet metal artifacts in patients due to implants, pacemakers, shrapnel, dental fillings, or prosthesis can compromise CT image data. When metal artifacts are detected, they distort images and in the worst case they may conceal relevant pathologies, which may lead to non-diagnostic image quality. As a result, the need for repeat CT exams increases, additional costs are incurred, and there is a potential to negatively impact patient therapy outcomes. This can be especially problematic in the Veteran population, which sees an above average number of individuals with implants and other metal devices.



Without iMAR



With iMAR

## iMAR is Ready for Clinical Routine

### The benefits in using iMAR:

- Available before and after scan acquisition, allowing the user to select the feature whenever necessary.
- Simple user interface and easy-to-use dropdown menu allows artifact reduction to be specified for the type of metal that's present (hip implants, spine fixations, dental fillings, neuro coils, pacemakers).
- Can be combined with all dose reduction features including iterative reconstruction and automated kV selection.
- Can be used with extended field of view.

Learn more at: [usa.siemens.com/imar](http://usa.siemens.com/imar)

## High Prevalence of Metal Devices, Implants, and Prosthetics in Veteran and Military Population

- In 2013, Military Health System (MHS) reported 8,828 knee replacements, and 4,943 hip replacements performed across all MHS facilities.<sup>1</sup> As of 2015, researchers say advancing orthopedic technology and total joint arthroplasty, or knee replacement, are quickly becoming a popular solution for injured soldiers.<sup>2</sup>
- In San Francisco's VAMC's Western Pacemaker program alone, there are 5,900 Veterans with pacemakers, and 12,516 Veterans with ICDs (implantable cardiac defibrillators).<sup>3</sup>
- The number of Veterans with prosthetics has increased by more than 70 percent since 2000.<sup>4</sup> Last year, nearly 1.5 million Veterans sought prosthetics, sensory aids, and related services from the VA.<sup>5</sup>

## Overcome Your Daily Challenges

iMAR from Siemens Healthineers is an algorithm focused on the reduction of metal artifacts for enhanced diagnostic image quality. With iMAR, surgical metal, prosthetics, dental fillings, and pacemakers cannot hide important insights from radiologists anymore. The technology combines three successful metal artifact reduction approaches and utilizes an advanced technique to blend the corrections and create the final image.

The result is outstanding image quality with reduced metal artifacts and increased valuable clinical information necessary for proper diagnosis and treatment.



The amount of metal artifact reduction and corresponding improvement in image quality depends on a number of factors including composition and size of the metal object, patient size, anatomical location and clinical practice. It is recommended to perform reconstructions with iMAR enabled in addition to conventional reconstruction without iMAR.

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<sup>1</sup> Brevig H, Colosimo, C, Jaditz T, Krauss R, Mandell K, Morrow R, Oi J, Tsany W. The Quality-Volume Relationship: Comparing Civilian and MHS Practice. CNA Corporation. 2015 Jan.

<sup>2</sup> Cappon C. Knee replacements bringing more soldiers back to active duty. Fox News Health. 2015 Jan 7.

<sup>3</sup> Varosy P. Surveillance of Cardiovascular Disease, Diabetes Mellitus, and Chronic Obstructive Pulmonary Disease. Veterans Health Administration.

<sup>4</sup> US Department of Veteran Affairs, "VA Research on Prosthetics". Veterans Health Administration. 2015 [cited 2015 May 15]. Available from: <http://www.research.va.gov/topics/prosthetics.cfm>.

<sup>5</sup> Veterans Research Alliance: Prosthetics. 2016 [cited 2016 July 7]. Available from: <http://veteransresearchalliance.org/prosthetics>.