

Metal Artifact Reduction Techniques — mART & mART+

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Key Points

- MRI scans are very sensitive to the presence of metal objects in the area of imaging.
- The metal objects and implants introduce significant metal artifact that appear as signal loss and pile-up, which complicate image interpretation.
- Canon Medical Systems has introduced a family of metal Artifact Reduction Techniques (mART) to reduce the in-plane metal artifact while keeping the scan time clinically reasonable.

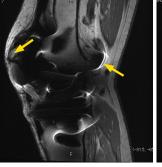
mART (Metal Artifact **Reduction Technique):**

Increase bandwidth, Acquire thinner slices, Increase readout matrix, Avoid the use of SPEEDER, Decrease echo spacing.

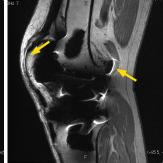
mART+ (Metal Artifact **Reduction Technique Plus):** *mART* technique in

combination with **VAT** (View Angle Tilting). VAT technique applies an

extra slice direction gradient during readout to cancel the readout direction shift. It reduces metal-related artifact caused by high off-resonance frequency.



Knee implant scanned on 3T Galan scanner



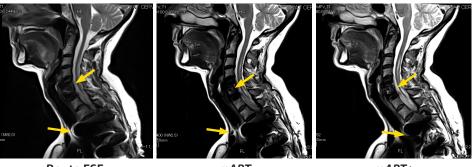


Route FSE

mART

mART+

Patient with cervical surgical hardware



Route FSE



mART+

*For more details, please refer to the mART White Paper MRWP13467US: https://us.medical.canon/products/magnetic-resonance/experience/



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