Boston Scientific

MRI and the Potential Effects on Implantable Devices

BACKGROUND INFORMATION

Magnetic Resonance Imaging (MRI) systems use an extremely powerful magnetic field combined with pulses of radio wave energy in order to create detailed images of inside the body.

Pacemaker and/or defibrillator patients should avoid exposure to MRI.

ICD: Implantable Cardioverter Defibrillator

CRT-D: Cardiac Resynchronization Therapy Defibrillator

CRT-P: Cardiac Resynchronization Therapy Pacemaker

CRM PRODUCTS REFERENCED*

All ICDs, CRT-Ds, CRT-Ps and Pacing Systems

*Products referenced herein may not be approved in all geographies. For comprehensive information on device operation, reference the appropriate product labeling.

CRM CONTACT INFORMATION

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MRI has been contraindicated by MRI manufacturers for patients with implantable pulse generators. **Patients should not be exposed to MRI scanning** because strong magnetic fields associated with MRI scanning may interfere with the normal function or damage an implanted pacemaker or defibrillator system, or cause injury to the patient.

Clinicians should carefully weigh the decision to use MRI with pacemaker or defibrillator patients. If MRI cannot be avoided, patients should be closely monitored, and programmed parameters should be verified upon cessation of MRI.

If MRI exposure occurs, potential interactions include the following:

Potential interaction(s)	ICDs and CRT-Ds	Pacemakers and CRT-Ps	Lead systems (including abandoned leads)
Inhibition of tachyarrhythmia therapy (ATP/shock therapy not provided when needed)	■		
Inappropriate tachyarrhythmia therapy (shock/ATP therapy provided when not needed)	■		
Deactivation of tachyarrhythmia therapy*	■		
Asynchronous pacing (pacing therapy provided independent of intrinsic cardiac activity)	■	■	
Inhibition of pacing (pacing therapy not provided when needed)	■	■	
Triggered ventricular pacing up to the Maximum Tracking Rate (MTR)	■	■	
Erroneous episodes stored in pulse generator memory	■	■	
Apparent drop in battery voltage or appearance of replacement indicator†	■	■	
Pulse generator pulling or twisting at implant site	■	■	
Pulse generator vibration	■	■	
Irreversible damage to the pulse generator	■	■	
Induced arrhythmias	■	■	■
Lead heating, which may lead to tissue damage and pacing threshold changes	■	■	■

*Requires reprogramming to restore.
†In most instances, the indicator can be reset/cleared with a manual capacitor reform.