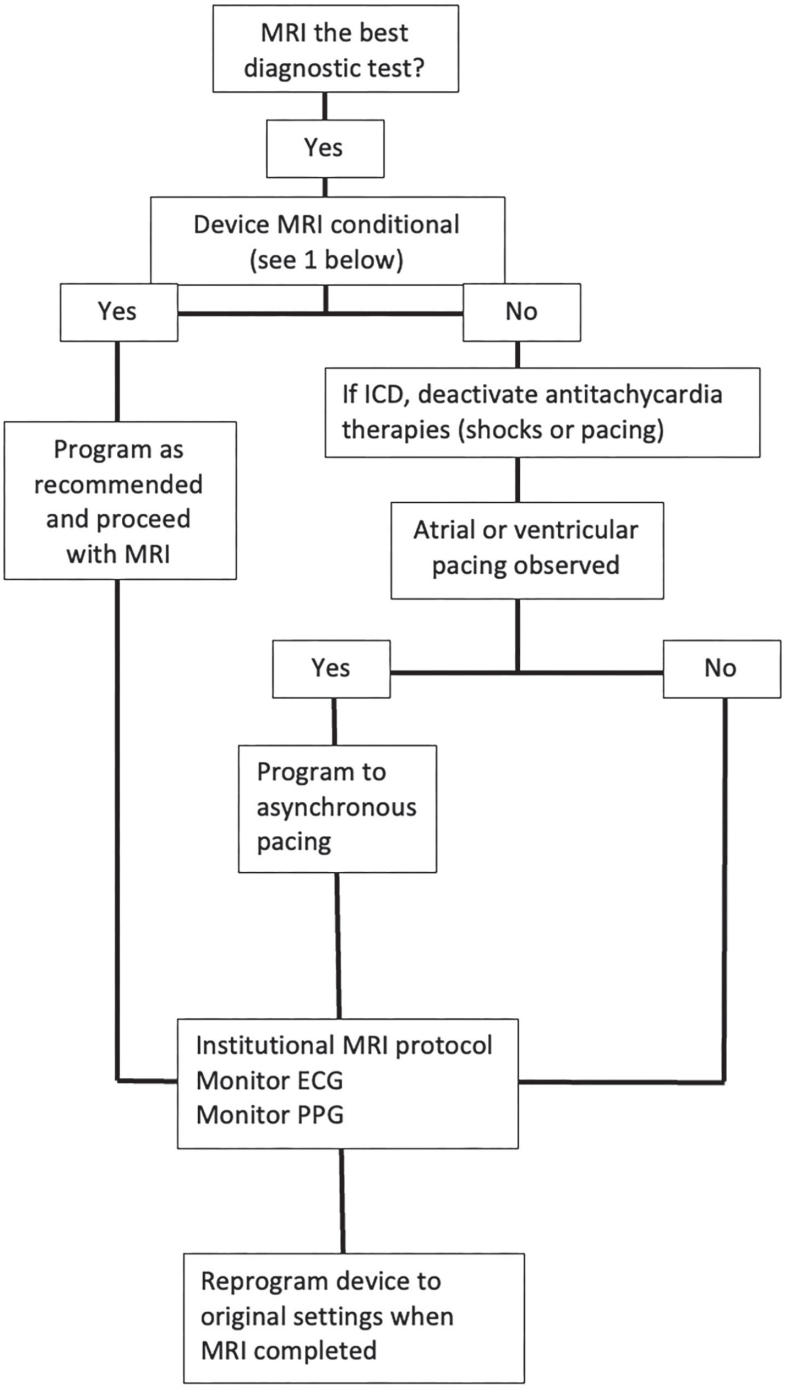
American Society of Anesthesiologists®

These resources are intended to supplement the current **Practice Advisory for the Perioperative Management of Patients with Cardiac Implantable Electronic Devices: Pacemakers and Implantable Cardioverter–Defibrillators 2020** regarding new developments in the CIED field.

Flowchart Diagram for CIEDS Management for MRI



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General Concepts Guiding CIED Management for MRI

1. MRI "conditional" defined as a CEID which can be subjected to MRI examinations as per manufacturer and US Food and Drug Administration.

2. Differing pulse generator and lead manufacturers invalidates either pulse generator or lead MRI conditionality but rarely is a contraindication for MRI.
    a. Consult electrophysiology or MRI cardiologist for recommendations.

3. Abandoned leads are rarely a contraindication to MRI.
    a. Consult electrophysiology or radiology for recommendations.

4. MRI Modes: These are device programs which inactivate tachyarrhythmia detection/treatment algorithms for ICDs and program PM to an asynchronous mode.

5. MRI conditional device programmable modes by manufacturer
    a. **Biotronik**
        i. Manual MRI Mode
        ii. "AutoDetect" feature allows automatic programming changes during MRI scan itself. Device sensor detects MR environment within 10 seconds and switches to pre-determined asynchronous pacing mode and suspension of antitachycardia therapies for ICDs. Device switches back to permanent programming 60 seconds after patient leaves MR environment.
    b. **Medtronic**
        i. "Surescan" manual MRI mode.
    c. **Abbott/St. Jude**
        i. Manual MRI mode.
    d. **Boston Scientific**
        i. MRI protection mode.
    e. **MicroPort**
        i. Manual MRI mode.
        ii. "Auto MRI" allows device to automatically change to asynchronous pacing mode and suspension of antitachycardia therapies for ICDs when MRI is detected. Device switches back to permanent programming 60 seconds after patient leaves MR environment.