

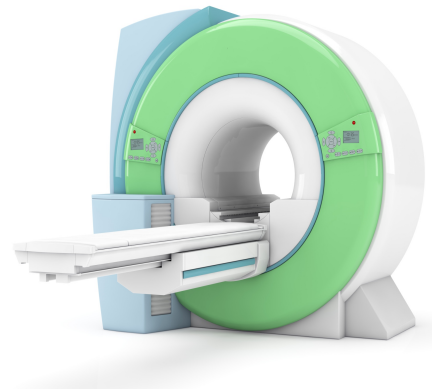


# Cardiac MRI Essentials

## CMR indications

CMR offers several advantages over other cardiac imaging modalities:

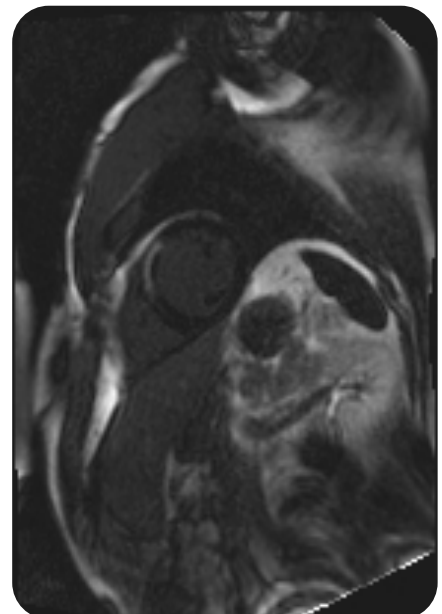
- CMR faces no restrictions with choice of imaging planes, or limitations from body habitus
- CMR can assess many different aspects of cardiac structure and function, all in a single imaging study
- CMR offers high spatial and temporal resolution



Unlike nuclear imaging or cardiac CT, CMR does not use ionizing radiation or radioactive isotopes

## What CMR can do

- Assess ventricular size, morphology, and function
- Assess myocardial mass
- Assess atrial size and structure
- Assess valve morphology
- Assess flow:
  - Stenotic lesions
  - Regurgitant lesions
  - Shunts
- Assess myocardial infarction
- Assess myocardial perfusion
- Assess myocardial infiltration and fibrosis
- Perform tissue characterization
- Perform angiography



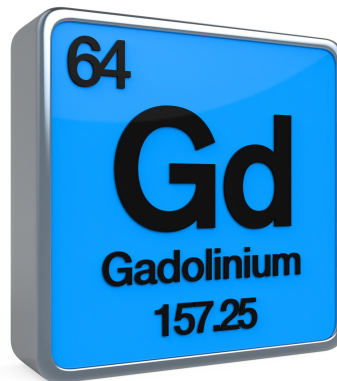
## What about the limitations of CMR?

Claustrophobia



Magnetic fields and  
implanted devices

Gadolinium contrast  
agents, renal impairment,  
and the risk of nephrogenic  
systemic fibrosis



### Further reading

ACCF/ACR/AHA/NASCI/SCMR 2010 Expert consensus document on cardiovascular magnetic resonance. *Journal of the American College of Cardiology* 2010; **55**: 2614-2662

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