

MRI SAFETY

Introduction

MRI (magnetic resonance imaging) is a high in demand field of diagnostic imaging that focuses on imaging soft tissues, like the brain, muscles, and ligaments. Between the years 2000 and 2009, fatalities inside the MRI suite have increased by almost 90 percent. Since the machine is operated with a very powerful magnet, it is crucial all personnel within the MRI suite follow the correct protocols and safety instructions set up by many organizations, including the American College of Radiology (Barr & Berry, 2015)

Zones

Each MRI suite is divided into four zones. Zone I is open to the public and the other patients within the hospital. Zone II might contain an MR specific receptionist desk, and it will be under the supervision of trained staff members. Inside of zone III, all patients must be under direct supervision. The zone holds the control panel and monitors. No patients are to be in this zone until they have gone through required screenings. Zone IV is last and is where the actual MRI exam takes place. There is a strong magnetic field in this zone, so it can potentially be the most dangerous if specific guidelines are not followed correctly (Sammet, 2016).



Figure 1 (right):
Brain MRI,
sagittal view



Figure 3
(above):
Intraoperative
MRI room

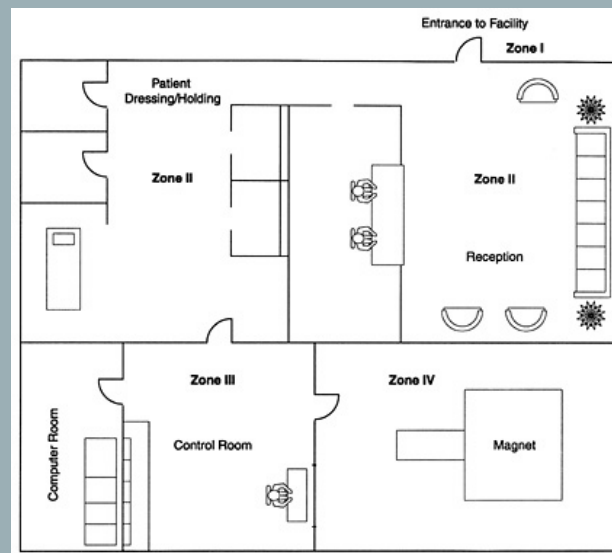


Figure 2: MRI suite with four zones

Intraoperative MRI

MRI machines within the operating room can be very beneficial to the patient and medical staff, however, it can lead to serious dangers if not gone about the correct way. Physicians are able to make decisions about their patients right away during the procedure, requiring less recovery time for the patient in the long run. On the other hand, the staff must keep the operating room free of any ferromagnetic materials (Hemingway & Kilfoyle, 2013).

Conclusion

Following strict guidelines and safety regulations can significantly decrease the amount of accidents within the MRI suite, keeping the patients and medical staff free of injuries and even death.

References

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