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NEWSLETTER

MRIs aren't as simple as they may seem. To achieve an accurate diagnosis, there is more to an MRI than just placing the patient on an MRI table and sending the films to a radiologist. The following factors during the scan affect patient outcomes, course of treatment, and cost when conducting MRIs.

1. Patient Movement:

A patient who moves during a scan will create artifacts on the imaging that can obscure findings and lead to a sub-optimal or even incorrect read by a radiologist. A recent global study from 2019 revealed that **1 in 5 MRI scans must be redone because of patient motion (2)**. This increases cost for the facility and inconveniences the patient and other patients waiting to be scanned by increasing scan time (2). Furthermore, image quality decreases by 74% when there is patient motion (2). Patient motion increases the possibility that the scan will not be of diagnostic quality in 70% of exams (2).

2. Imaging Protocols:

Part of image quality comes from the number of slices (section thickness) of a scan and the number of body planes used. The more slices, the more detailed and precise a scan is. The more body planes used, the more views there are of the anatomy. Scans that have slices that are too thick or have too few views can contribute to inaccurate reads (1). **In addition, neglecting to select other protocol choices like fat-saturated sequences can result in pathology being missed entirely (1)**.

3. Technologist Experience and Expertise:

When a patient goes for an MRI, the technologist will read the imaging order and adjust protocols as needed. **Failure to adjust appropriate measures and errors in protocol choice by inexperienced technologists can result in inaccurate readings (1)**. On the other hand, the ability of a technologist to accurately assign a protocol can actually shift workload away from a radiologist and increase their availability for other tasks (3).

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Sources:

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