

Neuroradiology Elective for Neurosurgery Residents 2024-2025

Course Directors

Julie Bykowski, MD jbykowski@health.ucsd.edu

Administrative Contact

Audrey Keane adkeane@health.ucsd.edu

Rotation Overview

The Neuroradiology rotation for Neurosurgery residents is a 2-week observation of case reviews, didactic lectures and case presentations. Residents will review brain, spine, cerebrovascular and head/neck CT and MRI scans for patients presenting to the emergency room, within the hospital, and for outpatient evaluation, with an emphasis on patients currently managed by Neurosurgical and Neurocritical care services.

Residents are expected to attend weekly Thursday morning Neuroradiology conferences, and to present a case review at one of the conferences during their rotation. Additional didactic lectures are available within the department, as well as the opportunity to observe multidisciplinary conferences and tumor boards. This instruction is to be supplemented with guided independent study. Residents are also expected to continue to participate in scheduled Dept of Neurosurgery didactic sessions.

Please email Ms Keane and Dr Bykowski the week prior to elective to confirm.

Learning Objectives

- Familiarity with brain, spine, skull base, and cerebrovascular anatomy and landmarks on imaging.
- Recognition of acute intracranial hemorrhage, acute ischemic stroke, large vessel occlusion, hydrocephalus, and herniation on non-contrast CT.
- Recognition of transitional spinal anatomy, spinal injury, and cauda equina compression on MRI.
- Understanding MRI screening, contraindications to MRI, and limitations for conditional devices.
- Knowledge of UCSD neurological imaging protocol options for symptom evaluation, operative guidance, and surveillance.
- Familiarity with appropriate use for neurological and neurosurgical imaging and contrast premedication.
- Exposure to Head/Neck surgery and Ophthalmology imaging cases.
- Development of working relationship with Neuroradiology faculty, fellows and Radiology residents as a resource during training and for patient care.

Schedule and Reading Rooms

Mon	Independent study
Tues	Neuroradiology observation 9a – 5p
Wed	Neuroradiology observation 9a – 5p
Thur	Neuroradiology Conference 8-10a, then observation 11a – 5p
Fri	Neurosurgery didactic / Independent study

Jacobs Medical Center room 1-837 (858-249-6146)

Continue along the hallway past the IR suite to the north (towards ED ambulance bay).

Turn left at the last hallway prior to exiting JMC. The reading room is the 2nd door on the right. Code is room reversed.

Neuroradiology Faculty

Clinical coverage schedules are posted on radres.ucsd.edu Schedules>Faculty schedules>Neuro

Reading and Resources

Radiopedia common indications and findings on head CT on their 'Neuroradiology for students (curriculum)' page.

<https://radiopaedia.org/articles/neuroradiology-for-students-curriculum?lang=us>

Univ Wisconsin Learning Neuroradiology and Virtual Neuroradiology Elective

<https://sites.google.com/a/wisc.edu/neuroradiology/virtual-neuroradiology-elective>

<https://sites.google.com/a/wisc.edu/neuroradiology/home>

UVa Introduction to Head CT

<https://www.med-ed.virginia.edu/courses/rad/headct/index.html>

MRI safety (UCSF video 1:30 minutes)

<https://youtu.be/gMAAGVLjP9s> or <https://radiology.ucsf.edu/blog/ucsf-radiology-shares-information-about-mri-safety>

Intro to MRI sequences (Radiopedia's Frank Gaillard, 13 minutes)

<https://www.youtube.com/watch?v=DYXEGY-X1n8>

UCSD IV Contrast Guidelines

<https://ishare.ucsd.edu/sites/radres/Shared%20Documents/Rad%20Res%20Documents/Policies/WD1111.pdf>

MRI Safety (includes the searchable list for device make/model/compatibility)

<https://www.mrisafety.com/>

ACR Appropriateness Criteria

<https://www.acr.org/Clinical-Resources/ACR-Appropriateness-Criteria>

AJNR Case of the week

<http://www.ajnr.org/cow/by/year>