

MRI Training Survey – Results (Quantified)
2002 ACR Resident Physician Section

Following is the analysis of 42 completed surveys collected during the 2002 ACR RPS meeting. The RPS is still collecting data. Please visit the ACR resident forum located on the ACR Web site (www.acr.org) for blank copies of the survey.

1. What type of residency program are you in?

Diagnostic radiology	98 %
Radiation oncology	2 %

2. What year of training are you in?

2 nd year	16.5 %
3 rd year	47.5 %
4 th year	36 %

3. How many residents are in your program?

0-15	31 %
16-30	45 %
31-45	19 %
46-60	5 %

4. How many MRI scanners are in your facility?

0-5	86 %
6-10	9 %
11-15	2.5 %
16 +	2.5 %

5. How many staff does your department have?

0-20	26 %
21-40	36 %
41-60	24 %
101-120	2.4 %
121-140	2.4 %
No answer	6.8 %
In flux	2.4%

6. Rate the overall adequacy of your residency training in MR as it pertains to your feeling prepared for practice after residency.

Less than adequate	50 %
Adequate	45 %
More than adequate	2.5 %
No answer	2.5 %

Additional Comments

- in my training, I have seen 3 MRCPs total, over the fellow's shoulders (not my cases to be responsible for or dictate), and I saw a few MRCPs in a conference once 2 years ago. Total number of MR body cases I have seen in clinical practice: about 20-30
- we have a lot of exposure to neuro MRI, but not much body MRI
- adequate for neuro/MSK. Absolutely not adequate for body

- neuro is more than adequate. Body & MSK border on less than adequate – because of low volume for body MR and a large volume of plain films and a fellow doing MR on MSK
- musculoskeletal exposure is low
- adequate but still not enough
- no PAX (I'm serious, we read off an alternator)
- adequate except for musculoskeletal
- adequate in neuro but not in MS
- not enough musculoskeletal MRI
- neuro is exceptional, MSK is less than adequate unless you use senior electives
- very little body MR, above average MSK
- adequate for neuro MRI, less than adequate for body & MSK
- poor training in sequences
- very little
- we are now dedicating one conference per week to MRI cases and teaching
- we do not have a dedicated body MR rotation during our body imaging rotation, the MRIs are read by those helping out (not assigned that day) and residents need to hunt down the MRs to read them
- we have a lot of elective months, which we can spend in any subspecialty including MRI excellent for neuro-MR, good MSK MR, body MR adequate, needs improvement

7. Do you have a dedicated rotation in Neuro MRI?

Yes	57 %
No	43 %

If yes, how many months will you train? (of the 57% responding yes)

- 21 % will train 1 month
- 4.25 % will train 1.5 months
- 29 % will train 2 months
- 8.25 % will train 3 months
- 25 % will train 4 months
- 4.25 % will train 5 months
- 8.25 % will train more than 5 months

If yes, how many cases per week do you see? (of the 57% responding yes)

- 20 % will see 0-50 cases
- 50 % will see 51-100 cases
- 15 % will see 101-150 cases
- 15 % will see 151-200 cases

If NO, when do you receive training?

- Neuro MR/CT rotation – have to share with fellows
- No, but we get enough cases in neuro, CT & MR
- We get them on our regular rotations intermixed with CT & plain films
- We do approximately 5 “neuroradiology” months of mixed CT/MR. First month is usually more than 80% CT, last 2-3 months are mostly MR
- Combined CT, MR neuro is combined neuro CT, composes mostly CT (total 4 months)
- General neuro
- MR training in neuro is started after your 2nd month in neuro (i.e. your second year of training)
- During our neuro rotation mixed in w/ CT

- Both scanners mix neuro/body/MSK
- During our neuro rotation we are assigned to MR, CT or procedures
- 6 months 'general' MRI
- during neuro rotation with CT
- during 6 months of CT/MRI rotations during 'neuro' month, inclusive of CT, neuro MR and angio (the MR volume is very high)

8. Do you have a dedicated rotation in MSK MRI?

Yes	36 %
No	64%

If yes, how many total months will you train? (of the 36 % responding yes)

- 33 % will train 1 month
- 7 % will train 1.5 months
- 7 % will train 2 months
- 7 % will train 2-3 months
- 18 % will train 3 months
- 7 % will train 3-4 months
- 7 % will train 3-6 months
- 7 % will train 4 months
- 7 % will train 4-5 months

If yes, how many cases per week do you see? (of the 36 % responding yes)

- 8 % will see 0-30 cases
- 75 % will see 31-60 cases
- 17 % will see 61-90 cases

If no, when do you receive training?

- During an outpatient imaging rotation (shared with body CT and neuro)
- Combined plain film/MRI
- With CT, we get 4-5 months through residency in CT & MR so it depends on which cases you select and when you become more senior you can look at more MR
- We have rotations that are heavily MSK weighted, but not dedicated solely to MRI
- We have musculoskeletal rotations that combine plain films/CT/MRI, although MRI tends to be done mostly by the fellows
- Combined with body MR
- General MSK rotation
- We have a musculoskeletal rotation that is mainly plain films and some CT and MRI
- Dedicated MSK months which include some MR & other modalities
- During body MRI rotation, but I would hardly call it training
- During MSK rotation, conferences, Mercy Hospital Iowa City, private private practice rotation
- Not much at all. If we're on our body MR rotation and NO active studies are being acquired then we look at MSKMRI. Also we have a Mercy rotation where we do get to see these
- We can do 1 month as an elective in our senior year
- Optional senior elective
- Optional senior elective, receive training otherwise on body and outpatient rotations
- During MRI months, total of 5 months. Do have MSK fellowship trained attending at St. Francis hospital

- Mixed in with bone
 - We have 2 months of combined body/MSKMRI, see approximately 5-15 MSK cases per week
 - 6 months of 'general' MRI
 - bone
 - senior MSK rotation – do as much MRI as possible but only about 25 cases per week
 - only as an elective
 - also see MSK during 6 months of CT/MRI
 - lumped with body MRI
- we read them, if we are lucky enough to, during our body imaging rotations (approximately 2 per year)

9. Do you have a dedicated rotation in Body MRI?

Yes	28.5 %
No	71.5 %

If yes, how many total months will you train? (of the 28.5 % responding yes)

- 54 % will train 1 month
- 23 % will train 2 months
- 8 % will train 2-3 months
- 15 % will train 3 months

If yes, how many cases per week do you see? (of the 28.5 % responding yes)

- 60 % will see 0-25 cases
- 20 % will see 26-50 cases
- 10 % will see 51-75 cases
- 10% will see 76 + cases

If no, when do you receive training?

- An elective exists in the cancer hospital for senior residents
- During body CT
- We don't. MR body cases are rare and we get to look at but not dictate them because the fellows take the case
- With CT/MR, we do not get many body MRI cases
- On body rotations
- Good question
- (yes, it is an elective) we get occasional exposure during body CT and also have noon conferences that deal primarily with body MR
- combined with MSK/MR
- body CT
- during body CT rotation or elective
- 1-3 cases per month come across on GU/BS rotation
- very limited MR training in abdominal
- it is incorporated in our MSK/MRI training since it represents about 10% of total MRI performed in our institution
- we can do 1 month as an elective our senior year
- along with body CT
- get with body rotation (mostly CT)
- during MRI months, total of 5 months
- mixed with body CT
- see approximately 5-15 body MRI cases per week
- 6 months 'general' MRI

- during our CT rotation
- during 6 months of CT/MRI
- we have a general MRI rotation which includes body, neuro and MSK. We have 2 months of this rotation in addition to 3 neuro and 1 MSK rotation
- not sure
- we read them, if we are lucky enough to, during our body imaging rotations (approximately 2 per year)
- body MRI cases per requests by clinicians and interpreted in GI/GU section as an adjunct when on ultrasound or GI rotation

10. Do you receive any formal teaching in MRI physics?

Yes	88 %
No	12 %

Additional Comments

- zero complaints about MR physics
- very limited – 1 hour out of not very highly rated physics training series
- before physics exam
- although it isn't ideally tailored to the resident level
- during physics review for boards
- random lectures
- in our physics
- 3 lectures for a total of 4 and ½ hours
- during physics course for board preparations
- an overview, most learning on my own
- limited lectures
- 2 one hour lectures during physics curriculum
- only in preparation for physics board which is limited in physics training
- BNH (Bethesda Naval) and physics course
- Minimal, less than 5 hours per year
- Minimal, poorly delivered
- As part of physics course, year-long curriculum
- We have a formal physics course over first two years of training which includes MRI
- Needs increased formulization however, a lecture series exists

11. Would you like to see a MRI minimum training requirement for residency training?

Yes	95 %
No	5 %

Additional Comments

- Less nuc med
- Specifically regarding MSK & body, our neuro-MR volume is high
- Minimum of 2-3 dedicated months needed
- Absolutely!!
- Yes, particularly required musculoskeletal rotation would be very helpful
- Very good idea. Total I get five months MRI (general-Body/MSK) and 2 months neuro MRI
- Important for turf – ortho & cardiology – see how ob/gyn's training requirement took OB ultrasound away from radiology, which had no requirement
- Not at the expense of other requirements such as Mammos

- MRI has become a mainstream imaging modality and if we don't train radiology resident formally then other doctors will take it away, we can't let that happen
As a rotation requirement

12. Minimum training requirements require quantifying training in terms of either time spent or cases seen. Please indicate which method you prefer with regard to MRI training?

Time spent	40.5 %
Cases seen	40.5 %
No preference	14 %
Other	5%

Comments if "other" was checked-

I think any minimum requirement would have to be general or have an either/or clause with time spent

Additional Comments

- Cases seen sounds like a good idea but how do you count it – is it number of dictations or do you have to add up other cases seen but dictated by others – can cause problems counting up. If time spent, may not see many cases just due to volume of cases seen in a particular hospital
- Could be a combination of both, a mandatory external rotation through an MR facility for smaller programs could be considered
- Time spent is easier to quantify and document
- Time spent per neuro/MSK/body
- Cases seen would turn into a paperwork nightmare
- 5 months
we have it for nuclear med, why not have it for MRI