



## Fellowship in Musculoskeletal Imaging Department of Radiology

### Director

Dr Ashwini Kulkarni MD  
HOD, Department of Radiology

### Mentor

Dr Sanjay Desai MD, DNB  
Consultant  
Department of Radiology

### Overview

The Department of Radiology offers a six-month intensive training in musculoskeletal imaging at Deenanath Mangeshkar Hospital (DMH). DMH is a world-class tertiary care more than 1000 bedded super specialty hospital located in Pune, Maharashtra. It is one of the premier centres for excellence in healthcare, research, and medical education in India. Royal College of Surgeons of England, London has accredited the post-graduate training center for its academic excellence. The hospital provides multi-disciplinary super-specialty care with departments dedicated to musculoskeletal imaging (MSK) like General Orthopaedics, Joint Replacement, Shoulder & Arthroscopy, Spine Clinic, Brachial Plexus, Sports Medicine, Rheumatology, Infectious Diseases and many other specialties.

### The Department of Radiology

The Department of Radiology offers comprehensive, state-of-the-art diagnostic radiology and image-guided interventional services under one roof. It houses facilities like Digital Radiography & Fluoroscopy, Ultrasonography, Doppler, BMD, Mammography, CT Scan (Two 128 slice), PET CT Scan, MRI (3T) for diagnostics. Interventions are also carried out with Ultrasonography and CT Guided biopsies, Cathlab procedures in relation to MSK Radiology like embolizations etc. are carried out. The Radiology department is well supported by excellent, highly qualified and experienced doctors with technology at its best.

### The Radiology Fellowship Programme

The Musculoskeletal Fellowship offers unparalleled educational and clinical experience, due to the volume, variety and breadth of pathology seen every day. The scope and depth of subspecialty interests, within the department and across the institution, guarantee an ideal educational experience with vibrant cross-specialty interactions and opportunities. Fellows work sidebyside and interact with nationally acclaimed radiologists.

The primary mission of the musculoskeletal fellowship is to impart exclusive clinical training in CT, ultrasound, MR imaging and intervention in musculoskeletal-related pathology.

Musculoskeletal imaging faculty is deeply committed to research and education. Our primary case volume is provided by the dynamic and diverse Orthopaedic Surgery Department including sub-speciality departments and clinics, General Medicine and General Surgery, Neurology and Neurosurgery, Adult and Pediatric Emergency Medicine and other relevant specialists.

Dr Sanjay Desai has more than 17 years of experience in radiology with special interest in MSK imaging. He has delivered lectures and presentations at national and international conferences on MSK imaging. He has special interest in teaching and research.

The fellow will participate in an intensive training program in musculoskeletal imaging, which includes plain radiographs, CT and MRI of the musculoskeletal system, arthrography, percutaneous bone biopsies and other related diagnostic and therapeutic procedures.

### **Aim**

- Train Fellows to develop expertise in the advanced image interpretation of the musculoskeletal system
- Educate Fellows in diagnosis of a wide variety of musculoskeletal disorders
- Teach proficiency in image-guided musculoskeletal procedures

### **Objectives**

- Training the fellows to be well versed in the principles and practice of musculoskeletal imaging
- Enable the fellow to become highly proficient in the performing radiographic diagnostic examinations and invasive procedures.
- Enable the fellow to independently interpret the results and findings of Musculoskeletal diseases.

### **Academia**

The Musculoskeletal Imaging Fellowship experience includes musculoskeletal examinations performed on conventional radiographs, musculoskeletal ultrasound - both diagnostic and interventional, CT and MRI, with special emphasis on imaging of both routine and esoteric musculoskeletal conditions as well as imaging of the post-operative patient including protocol considerations for imaging around post-arthroplasty or implants.

Numerous interventional musculoskeletal procedures of both the axial and appendicular skeletons are performed including arthrography as well as image guided (CT, fluoroscopy, ultrasound) tissue sampling, e.g., cyst aspiration and bone biopsies.

Fellows rotate through all modalities and have dedicated research time as well. For diagnostic studies, the fellow will pre-report the cases which are then reviewed along with the mentor.

### **Musculoskeletal Fellow Training Activities**

- High volumes of musculoskeletal MRI cases are drawn from multiple departments. This includes Joint Replacement, Shoulder & Arthroscopy, Spine Clinic, Brachial Plexus, Sports Medicine, Rheumatology, Neurology, Neurosurgery, General Surgery, pediatrics departments. The fellow will gain experience with high field, 3.0 Tesla MR studies. The fellow is expected to review and interpret MRI and CT studies under direct faculty supervision. Fellows are also strongly encouraged to take advantage of the vast range of pathologies encountered on conventional radiographs.
- The fellow will rotate in all the modalities in MSK radiology on a pre-decided time table on a weekly/daily basis.
- The fellow is expected to conduct routine follow-up of cases reported and correlate with operative findings and further course of treatment and to re-analyse the highlights and pitfalls on case to case basis.
- Dedicated academic time is provided for performing clinical research. Fellows are required to submit two research articles and one research paper to a peer-reviewed journal during their training period.

- Weekly lectures are given by mentors. The fellows are also encouraged to actively involve themselves in teaching DNB students by means of case presentations and Journal clubs.
- Weekly/monthly multidisciplinary conferences at the hospital.
- The Fellow is expected to present paper / poster / relevant research tool in as many academic programs and conferences at local, state, national and international events as possible during the tenure.
- Fellows can actively participate in Musculoskeletal Imaging Society of India meetings and yearly academic activities pertaining to MSK Radiology.

### **Publication & Research**

The fellows will participate actively in the research, and present their work at national meetings and publication of one original research paper and two case reports or equivalent in peer reviewed journals during their fellowship programme.

### **Special Highlights**

- High volumes of MRI and CT studies
- Excellent case load from Subspecialty and superspecialty orthopaedic Clinics
- Training in musculoskeletal ultrasonography and ultrasound and CT guided procedures
- Rotation in all the modalities in Radiology
- Dedicated postgraduate academic centre for research activities with excellent library
- Active participation in departmental & interdepartmental courses and conferences

### **Learning Outcome**

#### Academic Competency

- The fellow will be well versed in the principles and practice of MSK Imaging
- The fellow will be able to impart training to postgraduate residents in the department.
- The fellow will be able to participate in scientific deliberations in musculoskeletal imaging

#### Clinical Competency

- Perform procedures and interpret diagnosis pertaining to musculoskeletal disease
- Provide clear, detailed and accurate radiology reports
- Work effectively with healthcare providers from other disciplines (especially all orthopedic surgical sub-specialties, rheumatology and rehabilitation medicine) to develop and carry out protocols for imaging patients with common and uncommon musculoskeletal pathologies
- Appropriately recommend, plan and perform image-guided interventional procedures, with emphasis on biopsy of bone and soft tissue pathologies including tumors.

### **Completion Criteria**

End of the term assessment evaluation is an integral part of the Fellowship Training. Assessment is scheduled at the end of fellowship training program. The evaluation assessment team will comprise of Senior Radiologist from outside the centre, along with faculty members from Deenanath Mangeshkar Hospital. It will consist of a written and an oral component. The written

assessment will be an essay type paper and/or multiple-choice questionnaire or both. Oral component will entail clinical examination and evaluation. Evaluation process will also include fellow's publication and research work during the period of attachment and their participation in academic activities. A review of 'Log Book' will be carried out, as a tool for self- evaluation process for the fellows to assess their performances.

This fellowship program aims that fellows should leave this program with the confidence and skill to practice Musculoskeletal Radiology Imaging as a career any where at the highest level.

On successful completion, the candidate will be awarded a duly signed certificate of having completed the fellowship and obtained the expertise in the field of MSK Radiology from Deenanath Mangeshkar Hospital.

### **Recruitment**

- Two posts per session

### **Duration**

- Six Months from the joining date (after due completion of formalities including PC-PNDT registration, MC I/ MMC registration / approval and HR formalities as required)
- Minimum 8 hours per day for 6 days per week. This includes minimum of 10 hours for research purposes per week.

### **Selection Process**

#### **Evaluation of application forms filled by the candidate.**

- Interview

#### **Admission Fees**

- Nil

#### **Requirements / Eligibility**

Post MD/DNB candidates will be preferred. Post DMRD / DMRE candidates will be waitlisted & may be included in the program if found eligible.

#### **Financial & Other Benefits**

Stipend – Rs.50,000/- (Gross)

Leave – 6 Paid leaves

Any sick leaves, leaves availed for academic activities / conferences etc will be as per discretion of the Head of Department/Mentor.

Any additional financial benefit may also be granted as per discretion by HOD/Mentor.

#### **Application Process**

The fellowship programme commences twice a year in the month of June and December every year.

Application begins with a statement of interest to the programme director. Interested applicants may apply as below.

Application process: [Click here for the application form](#)

**Correspondence**

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