



SRI RAMACHANDRA MEDICAL CENTRE

Porur, Chennai - 600 116.

DEPARTMENT OF RADIOLOGY AND IMAGING SCIENCES

APPLICATION FORM 2019-20 Session

Affix your latest
colour Passport
size photograph
here.

(Note: Please fill in each column in your own handwriting and put a tick mark (✓) wherever necessary and strike off the portion not applicable. Incomplete application form will not be accepted).

1. CROSS SECTIONAL IMAGING (12 Months) 3. MSK IMAGING (6 Months)
2. BREAST IMAGING & INTERVENTIONS (12 Months) 4. PET - CT (6 Months)
(TICK ONE FELLOWSHIP ONLY)

1. a) Name of the candidate (AS PER PROVISIONAL / DEGREE CERTIFICATE IN BLOCK LETTERS)	:	Dr.
b) Expand the initials	:	
c) Complete address (with District, State & PIN CODE) to which communication is to be sent	:	
d) Phone No. with STD Code	:	Residence : Mobile : E-mail ID :
2. a) Father's Name Contact Details	:	Mobile : E-mail ID :
b) Mother's Name Contact Details	:	Mobile : E-mail ID :
c) Husband's Name Contact Details	:	Mobile : E-mail ID :
3. Gender	:	Male <input type="checkbox"/> Female <input type="checkbox"/>

4. a) Date of birth and age	:	DD/MM/YYYY	Age:						
b) Place of birth, District and State	:								
5. Qualifying examination passed. (Self attested Photocopy of the Degree certificate and Statement of Marks of all examinations to be enclosed)	:	Name of PG Degree : University Regn. No : Month : Year :							
6. a) Name and address of the Medical College where qualified	:	UG PG							
b) Whether the College and course is recognized by the Medical Council of India.	:	<input type="checkbox"/> Recognised	<input type="checkbox"/> Not Recognised						
7. a) Whether the candidate has passed all the examinations in the first attempt	:	PG :	Yes / No						
		MBBS:	Yes / No						
b) If no, how many attempts were made to pass	:	<table border="1"> <thead> <tr> <th>Course</th> <th>No. of attempts</th> </tr> </thead> <tbody> <tr> <td>MBBS</td> <td></td> </tr> <tr> <td>PG</td> <td></td> </tr> </tbody> </table>		Course	No. of attempts	MBBS		PG	
Course	No. of attempts								
MBBS									
PG									
8. Details of Permanent Registration with the Medical Council incorporating PG qualification (Photocopy to be enclosed)	:	State : Regn. No.: Date :							

9. a) Papers Presented :

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b) Papers Published :

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(if necessary attach separate sheet)

DECLARATION BY THE CANDIDATE

I declare that the information furnished by me herein are true and correct. In case any information furnished herein is found to be incorrect or any document is found to be not genuine, I agree to forego my claim for admission and abide by the decision of the Sri Ramachandra Medical Centre authorities.

I further declare that I have read the prospectus furnished with the application form fully and understood the contents therein clearly and I hereby undertake to abide by the conditions prescribed therein. I undertake to abide by the Rules and Regulation of Sri Ramachandra Medical Centre.

Place:

Signature of the Candidate

Date:

Name:

Submit online Application (with attachments) to

The Medical Director, Sri Ramachandra Medical Centre, Porur, Chennai – 600 116.
medicaldirector@sriramachandra.edu.,in

with copies marked to

radiology@sriramachandra.edu.in

deanoffaculties@sriramachandra.edu.in

vicechancellor@sriramachandra.edu.in

registrar@sriramachandra.edu.in

Department of Radiology and Imaging Sciences

The Department of Radiology and Imaging Sciences, Sri Ramachandra Medical Centre, Porur, Chennai – 600 116. is pleased to announce the admission to Fellowship Programs in

1. Musculo skeletal (MSK) Imaging.
2. PET CT Imaging

Aim of the Course:

Primary objectives:

- The fellow must acquire a working knowledge of the theoretical basis of the specialty, including its foundations in the basic medical sciences and research.
- Fellow must demonstrate the requisite knowledge, skills, and attitudes for effective patient-centered care and service to a diverse population.
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Secondary objectives:

- To be able to participate and contribute effectively to research projects initiated by experienced colleagues and/or to initiate research
- Increase the research output. The Fellow is encouraged to complete a project and at least one publication during the year.

Name(s) of the department offering the course:

Department of Radiology and Imaging Sciences, Sri Ramachandra Medical Centre, Porur, Chennai – 600 116. , Chennai

Duration of the course: Six months

Knowledge and skills required for admission to the Course and Entry criteria:

MD / DNB in Radiology.

Preference will be given to those who have worked in a teaching institute or tertiary centre.

Selection will be based on a multiple choice questions ,entrance exam, and interview.

competencies :

Patient Care
Medical Knowledge
Practice-Based Learning & Improvements
Interpersonal & Communication Skills · Professionalism
System-Based Practice

Responsibilities:

- a. Protocols, monitoring and interpreting Ultrasonogram,CT and MR imaging studies under faculty supervision.
- b. Protocols and performing patient procedures, including arthrography, therapeutic and diagnostic injections, ultrasound, and CT guided biopsies under faculty supervision.
- c. Performing diagnostic MSK ultrasound examinations and presenting the findings to the attending for review.
- d. Preparing interdisciplinary conferences. Consulting with referring physicians.
- e. Effectively communicating study results by timely signing of reports and appropriate direct communication.

Publications and Presentations:

- * Complete at least **one original research project** as principal author with the purpose of preparation of a manuscript suitable for publication in a peer-reviewed journal
- * Present academic work at local, national or international scientific meetings
- * Preparation of a formal yearly lecture on a topic to be presented to the department and undergo formal assessment
- * Teach diagnostic radiology residents as well as residents from other clinical services and medical students

Method of evaluation:

Formative assessment:

- The fellow will undergo initial fully supervised rotation in each modality and will undertake independent role after assessment from the concerned faculty. The level of supervision will be tapered according to the experience and confidence gained.

- Formal assessment should be done by faculty and fellowship supervisor every 3 monthly

Summative assessment (at the end of course):

- The Fellow is expected to maintain a log book of interesting cases reported and total number of cases during each modality rotation

- An exit examination will be held with one internal and at least one external examiner from within the country

A theory and practical exam will be conducted at the end of the course as an exit exam with one internal and one external examiner from India.

Structured format of the fellowship programme:

I. TITLE OF THE COURSE: FELLOWSHIP IN MUSCULO SKELETAL (MSK) IMAGING

The Fellow will have rotation in the following areas:

MSK Radiographs	1 month
MSK Ultrasound	1 month
Musculoskeletal CT	1 month
Musculoskeletal MRI	1 month
Image guided interventions	1 month
Musculoskeletal Elective	1 month

SYLLABUS:

Musculoskeletal Radiology

Knowledge and skills to be acquired by the students on completion of the Course:

The fellow will be equipped to independently

- Report CT and MRI of bone and joints

-Perform and interpret musculoskeletal ultrasound

-Perform USG guided joint injections, biopsies, FNAC

1. Basics of musculoskeletal cross sectional imaging

Available cross-sectional imaging modalities and appropriate indications

Anatomy of musculoskeletal tissues

2. Imaging of pathology of joints

SHOULDER –

Shoulder impingement
Tendon tears, degeneration and dislocation
Shoulder impingement
Rotator interval abnormalities
Shoulder instability
SLAP
Arthritis
Post operative shoulder
Nerve abnormalities

ELBOW –

Fractures
Ligament injuries
Muscle and tendon injuries
Joint pathology
Nerve related pathologies

WRIST & HAND

Ligament & TFCC injury
Tendon Pathology
Carpal tunnel and nerve related pathology
Osseous abnormalities & Instability
Impaction syndromes
Occult Fractures.
Physeal Injuries.
Osteonecrosis
Congenital Osseous Lesions.
Arthritis

HIP –

Fractures
Vascular Abnormalities of Bone
Osteonecrosis (Avascular Necrosis)
Idiopathic Transient Osteoporosis of the Hip (Transient Painful Bone Marrow Edema)
Avulsion injuries
Muscle, tendon & ligament pathologies
Labrador injuries
Impingement syndromes
Sciatic Nerve pathologies

KNEE –

Fractures

Meniscal & Ligament pathologies
Posteromedial & Posterolateral corner injuries
Extensor mechanism
Avulsion injuries
Infection / Inflammatory diseases
Vascular pathologies
Post op knee

ANKLE & FOOT-

Fractures
Ligament & Tendon injuries
Impingement syndromes
Sinus Tarsi Syndrome
Plantar Fasciitis
Nerve related injuries & pathologies
Tarsal Coalition
Osteonecrosis of the foot and ankle
Accessory Muscles.
Pressure Lesions
Diabetic Foot
Foreign Bodies

TEMPOROMANDIBULAR JOINT

Normal anatomy
Internal derangement

3. Imaging of focal lesions of bone and soft tissue

Principles of staging
- Grade, Local Extent & Metastases

Bone & Soft Tissue Tumors
Post treatment evaluation of tumors

4. Marrow pathology imaging

Normal marrow anatomy and function
Marrow pathology
Post chemotherapy & radiation marrow changes
Miscellaneous Marrow Diseases

5. Spine imaging

Degenerative disease

Spinal canal stenosis
Post-operative imaging
Infections
Neoplasms
Trauma
Vascular pathologies

6. Imaging of peripheral nerves and plexus

Principles of nerve imaging
Normal imaging anatomy
Pathologies of brachial plexus
Pathologies of lumbosacral plexus
Pathologies of peripheral nerves of upper and lower limb

7. Arthritis imaging and cartilage imaging

Cartilage
Rheumatoid Arthritis
Ankylosing Spondylitis
Gout
Calcium Pyrophosphate Dihydrate Deposition
Hemophilia
Amyloid
Tumors
Synovial Chondromatosis
Pigmented Villonodular Synovitis

8. Imaging in trauma

Acute Osseous Trauma
Impaction injuries
Radiographically Occult Fracture
Avulsion injuries
Insufficiency fractures
Fatigue fractures
Post-traumatic Osteolysis
Post op imaging
Trauma to immature skeleton
Epiphysiolysis, Post-traumatic Physeal Bridges
Avulsion Fractures

9. Whole body MRI

Indications

Protocol

Technique

Myositis

Multifocal osteomyelitis

Rheumatology :

MSK ultrasound,

MSK radiography and CT;

and MSK image-guided procedures, including arthrography, bone and soft-tissue biopsies, spine and other palliative procedures.

Recommended list of Text books & Journals:

Text books:

- Bone and Joint Imaging: Donald L. Resnick, Mark J. Kransdorf
- MRI in orthopaedics & sports medicine - Stoller
- Yochum & Rowe's essentials of skeletal radiology
- Musculoskeletal imaging : The Requisites: B. J. Manaster, David A. May, and David g. Disler
- Ultrasound of the musculoskeletal system - Carlo Martinoli and Stefano Bianchi
- Diagnostic ultrasound – Rumack
- Musculoskeletal Ultrasound – Von Halsbeek
- Fundamentals of Musculoskeletal Ultrasound - Jon Jacobson
- Ultrasound guided musculoskeletal injections - Gina M. Allen, David J. Wilson

Journals:

Skeletal radiology

Radiology & Radiographics journal

American journal of radiology

FORMATIVE ASSESSMENT OF THE STUDENT :

**Patient care
Medical knowledge
Professionalism
Practice – based learning
System- based practice
Ability to work as health care team
Medical record keeping/Documentation
Leadership qualities
Interpersonal and communication skills
Participation in department programme
Logbook
Achievements during the period under review**

SUMMATIVE ASSESSMENT OF THE STUDENT :

**Regular assessment by faculty
Image quizzes
preparing teaching material
Contribution to departmental film museum**

CERTIFICATION :

CME ATTENDED -

CONFERENCES ATTENDED –

GUEST LECTURES ATTENDED -

**TAMILNADU MEDICAL COUNCIL CREDIT HOURS –
(OBTAINED DURING THE ABOVE PROGRAMME)**

**TAMILNADU Dr. M.G.R. MEDICAL UNIVERSITY UNIVERSITY CREDIT HOURS –
(OBTAINED DURING THE ABOVE PROGRAMME)**

II . TITLE OF THE COURSE:

PET-CT FELLOWSHIP

RESPONSIBILITIES:

- Define the patient`s and clinician`s rationale for the request or referral ,i.e. justify all referrals.
- Inform the patient about the entire procedure and administration of radiopharmaceutical or therapeutic applications.
- Determine and organize the appropriate tests and protocols according to accepted guidelines.
- Adapt the protocols to the needs and condition of the patient.

- Prescribe radiopharmaceutical and appropriate activity.
- Prescribe appropriate medication needed for patient preparation (before or after) the examination.
- Regulate the study analysis and interpretation according to the clinical information.
- Interpret the results and their clinical, biological and pathological implications.
- Consider follow-up consultations. Guarantee the safety of both the patient and staff.
- Provide training and education for junior doctors and technical staff.

The Fellow will have rotation in the following areas:

CT	1 month
MRI	1 month
Nuclear Medicine	1 month
PET CT	3 months

During postings he has to maintain log book, attend tumour board meetings, poster presentation, oral presentation in conferences and publish one paper in indexed journals.

SYLLABUS:

PRINCIPLES:

- Basic knowledge in physics, statistics, mathematics and computer science
- Basic knowledge in biology (including molecular biology), physiology and pathophysiology
- Radiation physics
- Radiobiology
- Radiochemistry
- Radio pharmacy
- Clinical radio pharmacology
- Tracer kinetic modeling
- Applications of radiopharmaceuticals and administrable or implantable medical devices: indications, justification, procedures/protocols and results, methodology and dosimetry
- Radiation protection: justification and optimization [ALARA (as low as reasonably achievable), ALARP (as low as reasonably practicable) and limitation of doses (only for medical workers)] and radiation hazards
- Radiobiology
- Instrumentation

- Quantitative techniques in PET-CT and their standardization
 - Principles of radiology modalities including dual energy X-ray absorption (DEXA), ultrasound, CT, MRI and MRS
- Data acquisition and image processing techniques INPET and PET-CT.
- Statistics of radioactive counting
- Quality control.

IMAGING:

- Patterns of radiopharmaceutical uptake; normal and abnormal appearances of images, normal variants and common artifacts in bone, heart, lung, kidney, brain, thyroid, tumor and infection images.
- Learning of cross-sectional anatomy.
- Comprehensive knowledge of imaging diagnostic rationale (e.g., advantages and limitations of PET-contrast enhanced CT versus PET-low dose CT).
- Correlative imaging of PET-CT images and those from other imaging techniques.
- Special diagnostic information in cardiology, lung disease, gastroenterology, hepato biliary dysfunction, nephro-urology, neurology and psychiatry, endocrinology, hematology, oncology and infection. **ONCO IMAGING BASICS:**
- Embryology, anatomy and pathophysiology of major tumours.
- Pathology of malignancies
- Anatomical route of spread in malignancies.
- Route of Lymphnode spread for various tumours and Lymphnode stations
- International Imaging guidelines for cancer
- Tumour staging methods used for each Organ system
- Assessment of tumour Response.

BOOKS:

- Basics of PET Imaging : Physics, Chemistry, and Regulations—By Gopal B. Saha
- PET-CT Hybrid Imaging—Book by Otmar Schober and Walter Heindel
- Molecular Anatomic Imaging :PET/CT,PET/MR and SPECT CT Hard cover— by Gustav K. Von Schulthess
- Clinical PET: Principles and Applications—E.Edmund Kim, Tomio Inoue , Wai-Hoi Wong
- Atlas of Sectional Radiological Anatomy for PET/CT—Book by Mehmet T. Kitapci
- Radiology for PET/CT Reporting—Book by Cristina Nanni, Lucia Zanoni, and Stefano Fanti
- Atlas of PET-CT : A Quick Guide to Image Interpretation—by Luigi Mansi, Mohsen Farsad, and Stefano Fanti

- PET/CT in Cancer: An Interdisciplinary Approach to Individualized Imaging
— By Mohsen Beheshti, Werner Langsteger, Alireza Rezaee
- PET-CT Beyond FDG : A Quick Guide to Image Interpretation—by Luigi Mansi, Mohsen Farsad, and Stefano Fanti
- PET-CT: Rare Findings and Diseases—by Cristina Nanni and Stefano Fanti

JOURNALS:

- The Journal of Nuclear Medicine
- PET Clinics
- Radiographics
- Radiology
- European Journal of Nuclear Medicine and Molecular Imaging
- Clinical Nuclear Medicine
- Seminars in Nuclear Medicine

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