

HONG KONG COLLEGE OF RADIOLOGISTS

Higher Subspecialty Training in Musculoskeletal Radiology

[This document should be read in conjunction with the *Guidelines on Higher Specialist Training (Radiology)*]

1. INTRODUCTION

- 1.1 Musculoskeletal radiology is a well-defined subspecialty of radiology. It involves both diagnostic imaging and imaging intervention of the appendicular and axial musculoskeletal systems. Imaging support is provided specifically for Orthopaedic, Traumatology, Accident and Emergency, Sports Medicine and Rheumatology clinical subspecialties.
- 1.2 Training in Musculoskeletal Radiology can augment or be augmented from training in other radiology subspecialties particularly paediatric radiology (paediatric musculoskeletal conditions), oncology (musculoskeletal tumours), neuroradiology (spinal imaging), interventional radiology (aspiration, biopsy techniques, embolisation, chemoembolisation, investigation and treatment of pelvic or appendicular trauma and disease), cross-sectional imaging and nuclear medicine.
- 1.3 It is a category A subspecialty.

2. OBJECTIVES

- 2.1 The training curriculum is to ensure that trainees acquire:
 - (a) A more in-depth exposure to the radiological, clinical, and pathological aspects of musculoskeletal diseases.
 - (b) A better understanding of the reasoning behind imaging of the common and less common musculoskeletal conditions and knowledge of how to efficiently use the imaging modalities chosen.
 - (c) Guidance and practice on the correct reporting of musculoskeletal imaging studies. The trainees must avail of every opportunity to practice reporting of musculoskeletal examinations. These draft reports should be critically analysed and improved on by the supervising radiologists
 - (d) Some 'hands-on' experience of image-guided interventional procedures relating to the musculoskeletal system.
 - (e) Improved clinical and management skills relevant to Musculoskeletal Radiology, enabling practical discussion with clinical colleagues, and a sensible approach to clinical problems.
 - (e) Improved case presentation skills relevant to Musculoskeletal Radiology.
 - (g) An exposure to analytical and research methods.
 - (h) Sufficient insight to facilitate choice of future subspecialty.

3. TRAINING REQUIREMENTS

3.1 TRAINING CENTRE REQUIREMENTS

A suitable training centre should ideally incorporate:

- (a) Access to general radiography, high resolution ultrasound (US), computed tomography (CT), magnetic resonance imaging (MRI), fluoroscopy, nuclear medicine, interventional procedures and angiography. If the training centre does not possess any of the above, the trainee can be attached to another appropriate hospital to fulfil training.
- (b) The presence of all of the following relevant clinical departments: Orthopaedics and Traumatology, Accident and Emergency providing an adequate workload of musculoskeletal disorders. The presence of rheumatology team in Medicine is also preferred.

3.2 TRAINER REQUIREMENTS

As specified in the Guidelines on Higher Specialist Training (Radiology).

3.3 DURATION OF TRAINING

The recommended duration of training is six months. In some instances, a training period of three months can be acceptable.

3.4 DUTY SESSIONS

3.4.1 Five or more service sessions weekly specific for the subspecialty are required.

3.4.2 It is recommended that the trainee obtains experience in the following:

- (a) Radiography – one general reporting session per week with emphasis on musculoskeletal cases (more than 50% from the specialities of Orthopaedics and Traumatology and / or Rheumatology) or one Accident & Emergency reporting session / week.
- (b) CT – the equivalence of one session per week – with more than 50% of the examinations of the session being related to musculoskeletal subspecialty.
- (c) MRI – the equivalence of two sessions, preferably three sessions per fortnight – with more than 50% of the examinations of the session being related to musculoskeletal subspecialty.
- (d) USG – the equivalence of one session per week – with more than 50% of the average number of scheduled examinations performed using suitable ultrasound equipment in the session being related to musculoskeletal subspecialty.
- (e) NM – the equivalence of one session, preferably two sessions per fortnight – with more than 50% of the examinations of the session being related to musculoskeletal subspecialty. (This may be in form of film reviewing / reporting sessions or reading during CRC's)

- (f) IR – Exposure to image-guided interventional procedures relevant to musculoskeletal radiology should be included. IR procedures could be either incorporated into the modality based sessions or in an IR session with musculoskeletal interventional procedures

3.5 MINIMUM NUMBER OF EXAMINATIONS REQUIRED

3.5.1 The number of examinations to be performed and reported by a trainee in the 6-month period:

Modality	Region	RIS Coding	Requirement
CT	Musculoskeletal CT Including Extremities, Spine, Pelvis, Scannogram	4301-4304 4305-4399, 4205, 4206 4406	80
MRI	Craniovertebral junction, spine,	8113-8114, 8201-8299	80
	Limbs, brachial plexus, pelvis sacral plexus, buttock, axilla	8401-8414, 8117-8118, 8309-8310, 8430, 8431, 8435, 8436	35
	Joints	8211-8212, 8433- 8434, 8415-8428 8437-8438	70
Ultrasound	Upper and lower limb (bone / joint, muscle / soft tissues) Abdominal wall, groin, hernia Chest wall, rib fracture Scalp, spine, nerves	3221-3299	80
	Infant hip	3202	10
Procedures	Joint aspiration, arthrography, fine needle aspiration, biopsy and other musculoskeletal interventional procedures	2305, 2306, 4399, 7103-7109, 7503, 7508, 7510-7512, 8429	16
Nuclear Medicine	Infection / oncology Gallium and other infection scan, Bone scan	9610-9699, 9910-9999	20

3.5.2 Trainee should have experience and keep a detailed record (date of investigation, patient hospital or clinic number, imaging modality, diagnosis, imaging report and learning point) of the following cases during six months of training:

(a) Musculoskeletal CT of acute spinal or appendicular trauma	6
(b) Musculoskeletal MR of joints	12
(c) Musculoskeletal MR of soft tissue, muscle or tendons	6
(d) Musculoskeletal MR of bone lesion	6
(e) Musculoskeletal Ultrasound of soft tissue or muscle	12
(f) Musculoskeletal Ultrasound of joints	6
(g) Radiographs with positive findings	15
(h) Spine IR procedures	3
(i) Musculoskeletal IR procedures other than spine	3

The reports of these cases must be reported by the trainee.

50% of the above requirement is needed for three months of training.

3.5.3 Optional Requirements

- (a) The availability of additional more specialised imaging procedures over and above the 'core' requirements can further enhance the suitability of a training centre for Musculoskeletal Radiology.
- (b) These optional procedures may include dual energy CT (DECT) in musculoskeletal imaging, MR spectroscopy, MR diffusion, MR tractography, perfusion and flow imaging studies, functional studies (e.g. C1/C2 movement studies, patellofemoral tracking studies, kinematic joint or muscle studies etc), femoral torsion measurement, musculoskeletal IR procedures (e.g. percutaneous or transarterial embolization, image guided injection for pain relief, vertebroplasty)
- (c) Trainees should document the procedures performed in a training logbook.

3.6 CLINICAL RADIOLOGICAL CONFERENCES AND OTHER MEETINGS

3.6.1 Requirements for CRC as specified in the Guidelines on Higher Specialist Training (Radiology).

3.6.2 Journal Review and Research meeting – one session per month. Active participation in journal review / journal club, and audit/research activities.

3.6.3 Interesting Case meeting/ webinar – is recommended for trainees to attend.

3.7 PRESENTATIONS AND PUBLICATIONS

Please refer to the Guidelines on Higher Specialist Training (Radiology).

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