Non-specialist referral guidance: Musculoskeletal Imaging

These guidelines have been issued in conjunction with the Royal College of Radiology referral guidelines, iRefer: 'Making the Best Use of Clinical Radiology', version 8 (2017) and with NICE guidelines.

- Requests made outside these guidelines will be returned by mail or email. Non-specific requests, such as ?joint/ligament/tendon/muscle pathology, will also be returned.
- Please provide detailed clinical information including your history and examination findings with a clear clinical question.
- It is possible that an imaging examination requested is changed to an alternative examination or that an additional examination is performed.
- Patients who attend the walk-in GP X-ray service with referrals not clinically indicated according to these guidelines will be sent away and asked to contact their referring GP practice.

Please note that this document is not exhaustive and if you need further advice regarding referral for imaging investigations, then please email: ABB.GPRadiologyQueries@wales.nhs.uk

Body Part	Problem	Imaging Technique/referral	Comments / Exceptions
Cervical Spine	Traumatic neck pain	X-ray (Emergency Department referral may be appropriate – see comment)	If acute cervical spine fracture or ligamentous injury is suspected then the patient should be immobilised and ambulance transfer to the Emergency Department should be arranged
	Suspected osteoporotic collapse	X-ray	
	Suspected axial spondyloarthritis	Rheumatology referral	
	Non-specific neck pain not responding to conservative management after 8 weeks without red flags***	Referral to spinal physiotherapy.	Neck pain generally improves or resolves with conservative treatment Degenerative changes begin in early middle age and are often unrelated to symptoms and, therefore, X-rays of the cervical spine are often not useful
	Pain - with radiculopathy	Referral to spinal physiotherapy or spinal surgeons	An MRI request must also be made at the time of making the specialist referral but no MRI will be accepted unless it is stated that referral has been made in the clinical details provided Please specify the side and dermatomal distribution
	Pain - History of malignancy or other red flags ***	Urgent referral to spinal surgeons	An MRI request must also be made at the time of making the specialist referral but no MRI will be accepted unless it is stated that referral has been made in the clinical details provided
	Pain - Suspected cord compression	Immediate referral to the on call orthopaedic team who will arrange imaging	

Body Part	Problem	Imaging Technique/referral	Comments / Exceptions
Thoracic Spine	Traumatic back pain	X-ray	Emergency Department referral may be appropriate
	Suspected osteoporotic collapse	X-ray	
	Suspected axial spondyloarthritis	Rheumatology referral	
	New onset non-specific thoracic spine pain without trauma	Referral to spinal physiotherapy or spinal surgeons	An MRI request must also be made at the time of making the specialist referral but no MRI will be accepted unless it is stated that referral has been made in the clinical details provided
	Long standing pain more than 8 weeks - Persistent / difficult to manage	Referral to spinal physiotherapy or spinal surgeons	Request MRI if referral is made to the Spinal Surgeon.
	Pain with - History of malignancy or other red flags ***	Urgent referral to spinal surgeons	An MRI request must also be made at the time of making the specialist referral but no MRI will be accepted unless it is stated that referral has been made in the clinical details provided
	Pain with - Suspected cord compression	Immediate referral to the on call orthopaedic team who will arrange imaging	
Lumbar Spine	Traumatic back pain	X-ray	Emergency Department referral may be appropriate
	Suspected osteoporotic collapse	X-ray	
	Suspected axial spondyloarthritis	Rheumatology referral	
	Non-specific lower back pain	No imaging indicated	
	Non-specific lower back pain – with or without sciatica – not responding to conservative management after 8 weeks without red flags***	Referral to spinal physiotherapy or spinal surgeons	Request MRI scan if referral is made to spinal surgeon. No MRI will be accepted unless it is stated that referral has been made in the clinical details provided and the request does not adhere to guidance. See NICE guidelines NG59 sections 1.1.4-6
	Pain with - History of malignancy or other red flags ***	Urgent referral to spinal surgeons	An MRI request must also be made at the time of making the specialist referral but no MRI will be accepted unless it is stated that referral has been made in the clinical details provided
	Pain with - Suspected conus or cauda equina compression	Immediate referral to the on call orthopaedic team who will arrange imaging	

Body Part	Problem	Imaging Technique/referral	Comments / Exceptions
Shoulder	Traumatic shoulder pain Suspected other bony pathology	X-ray	Acute dislocation – refer to ED
	Pain < 50 years of age - Impingement - Rotator cuff pathology	X-Ray only	
	Pain > 50 years of age - Impingement - Rotator cuff pathology	X-ray is first line investigation X-ray normal – failed conservative MX – refer to secondary care X-ray abnormal – specialist referral	
	Shoulder instability / recurrent dislocation	X-ray and orthopaedic referral	
Elbow	Traumatic elbow pain Suspected other bony pathology	X-ray	
	Suspected epicondylitis	Imaging is not indicated prior to specialist referral	Epicondylitis is usually a clinical diagnosis and US is not usually required
Wrist / Hand/ Thumb	Traumatic wrist/hand/thumb pain Suspected other bony pathology	X-ray	Please specify anatomical site of pain/tenderness e.g. radial wrist, dorsal wrist, MCP joint, distal/proximal interphalangeal joint If base of thumb pain, please specify if CMC or MCP joint
	Suspected inflammatory arthritis	X-ray and rheumatology referral	If there is a clinical suspicion of inflammatory arthropathy then X-ray and specialist referral Referral for US small joints of the hands will not be accepted
	Tenosynovitis	US	
Hip	Traumatic hip pain Hip pain Suspected OA Suspected other bony pathology	X-ray	
	Bursitis	US is of limited benefit and does not alter management prior to specialist referral Consider referral if conservative management fails.	'Trochanteric bursitis' is a clinical diagnosis which frequently reflects tendinopathy of the gluteus medius insertion on the greater trochanter, without a bursal fluid collection
	Suspected femoroacetabular impingement in patient <50	X-ray and refer to orthopaedics	X-rays can be normal – so if this diagnosis is suspected in patients <50, then referral is required regardless of X-ray findings

Body Part	Problem	Imaging Technique/referral	Comments / Exceptions
Knee	Traumatic knee pain Suspected other bony pathology	X-ray	
	Post-traumatic knee pain with locking or instability	X-ray + referral	
	Knee pain 18 - 50 years	X-ray – first line investigation MRI – only indicated if plain X-ray is entirely normal and conservative management has failed with high clinical suspicion of ligament or meniscal pathology	X-ray of the knee is required prior to planning MRI and is required for complete MRI interpretation Please provide detailed information regarding examination findings and suspected diagnosis
	Knee pain > 50 years	X-ray – first line investigation MRI – not indicated prior to orthopaedic referral	If suspect malignancy then urgent orthopaedic referral indicated.
	Suspected injury to extensor mechanism (quadriceps tendon and patella tendon)	US	Ultrasound can demonstrate quadriceps tendinopathy or patellar tendinopathy
	Suspected Osgood-Schlatter's	Imaging is not routinely indicated	Osgood-Schlatter's disease is a clinical diagnosis
	Baker's cyst		A mass in the popliteal fossa is very likely to be a Baker's cyst and these generally do not require any imaging X-ray can be helpful to show osteoarthritis – the most common cause of a Baker's cyst in adults Consider US if there are atypical or potentially sinister features
	Post- surgical Knee	X-ray and orthopaedic referral	No request for MRI will be accepted prior to referral for patients who have had previous knee surgery of any description
Ankle	Traumatic ankle pain Suspected other bony pathology	X-ray	US has no role following ankle sprain or suspected ligamentous injury prior to specialist referral
	Tendinopathy / tenosynovitis	US	
	Acute tendon rupture (e.g. Achilles tendon)	Urgent Specialist / Emergency Department referral	
	Chronic Achilles tendinopathy	Imaging is not indicated prior to physio / specialist referral	

Body Part	Problem	Imaging Technique/referral	Comments / Exceptions
Foot	Traumatic foot pain Suspected other bony pathology	x-ray	
	Tendinopathy/ tenosynovitis	US	
	Morton's neuroma / intermetatarsal bursitis	US not indicated prior to specialist referral	In the case of clinically suspected Morton's neuroma an X-ray can be helpful to determine presence of osteoarthritis which is the most common cause of forefoot/toe pain
	Plantar fasciitis	No imaging indicated Consider referral if not responding to conservative management	Most patients with heel pain can be managed on the basis of clinical findings without imaging

***** Red Flags**

The term "red flags" in the context of spinal pain, refers to clinical or laboratory features which may highlight serious underlying pathology:

Neurological:
- Sphincter or gait disturbance
- Severe/progressive motor loss
- Saddle anaesthesia
- Widespread neurological deficit

Other:
- Previous or current malignancy
- Systemically unwell
- Raised CRP with no other identified cause
- HIV
- Weight loss
- IV drug abuse
- Steroids
- Structural deformity
- Non-mechanical back pain (no relief with bed rest)