

MSK SERVICES PATHWAY - LOW BACK PAIN PATHOLOGY

FOR PATIENTS AGED OVER 16 YEARS

GPs to follow guidance offered within this pathway and where relevant refer using Ardens templates and within remit of CCG Restricted and Not Routinely funded policy.

RED FLAG

Diagnosis to monitor

- Spinal malignancy
- Metastatic Spinal Cord Compression
- Fracture
- Cauda Equina
- Inflammatory Back Pain
- Infection
- Abdominal Aortic Aneurysm
- Visceral Referral
- Lumbar Radiculopathy with muscle power of < 3/5, such as drop foot.

History & Symptoms

Medical Professionals seeing patients with MSK complaints in primary care should be trained in assessing for alarming features and red flags in all patients. [▶ Click Here](#)

Injury

Consider admission/urgent referral [▶ Click Here](#)

ASSESSMENT & DIAGNOSIS OF OTHER CONDITIONS

Tool to aid clinical judgement when serious spinal pathology suspected [▶ Click Here](#)

Mechanical non-specific low back pain [▶ Click Here](#)

Mechanical low back pain with no leg symptoms overview [▶ Click Here](#)

Low back and leg pain/Lumbar radiculopathy [▶ Click Here](#)

Lumbar radicular pathway overview [▶ Click Here](#)

Coccygeal pain [▶ Click Here](#)

Other specific causes of low back pain [▶ Click Here](#)

When to order imaging [▶ Click Here](#)

RED FLAG SCREENING: SPECIFIC FOR LOW BACK PATHOLOGY

<p>Red Flags/ conditions that will alter management immediately</p>	<p>Medical Professionals seeing patients with MSK complaints in primary care should be trained in assessing for alarming features and red flags in all patients.</p> <ul style="list-style-type: none"> • Spinal malignancy • Metastatic Spinal Cord Compression • Fracture • Cauda Equina • Inflammatory Back Pain • Infection • Abdominal Aortic Aneurysm • Visceral Referral • Lumbar Radiculopathy with muscle power of < 3/5, such as drop foot.
<p>History & Symptoms</p>	<ul style="list-style-type: none"> • Cauda equina syndrome¹. <ul style="list-style-type: none"> o Severe or progressive bilateral neurological deficit of the legs, such as major motor weakness with knee extension, ankle eversion, or foot dorsiflexion. o Recent-onset urinary retention (caused by bladder distension because the sensation of fullness is lost) and/or urinary incontinence (caused by loss of sensation when passing urine). o Recent-onset faecal incontinence (due to loss of sensation of rectal fullness). o Perianal or perineal sensory loss (saddle anaesthesia or paraesthesia). o Unexpected laxity of the anal sphincter. • Referral should be made to local A and E department immediately by assessing clinician (GP, ANP, APP, Physiotherapist) • For MSK APP triage staff and MSK Core physiotherapy staff, patient letter is available on SystmOne to be completed and given to patient to attend A and E • Spinal fracture¹. <ul style="list-style-type: none"> o Sudden onset of severe central spinal pain, which is relieved by lying down. o A history of major trauma (such as a road traffic collision or fall from a height), minor trauma, or even just strenuous lifting in people with osteoporosis or those who use corticosteroids. o Structural deformity of the spine (such as a step from one vertebra to an adjacent vertebra) may be present. o There may be point tenderness over a vertebral body. • Referral should be made to local A and E department immediately by assessing clinician (GP, ANP, APP, Physiotherapist) • Spinal Malignancy¹. <ul style="list-style-type: none"> o Age <20 or > 50 is higher risk group. o Gradual onset of symptoms. o Severe unremitting pain that remains when the person is supine, aching night pain that prevents or disturbs sleep, pain aggravated by straining (for example, at stool, or when coughing or sneezing), and thoracic pain. o Localised spinal tenderness. o No symptomatic improvement after four to six weeks of conservative low back pain therapy. o Unexplained weight loss, fever, malaise. o Past history of cancer - breast, lung, gastrointestinal, prostate, renal, and thyroid cancers are more likely to metastasize to the spine. • Referral should be made to local A and E department immediately by assessing clinician (GP, ANP, APP, Physiotherapist) if fractures are noted on any form of radiological investigation • Urgent referral should be made to local spinal unit • Infection/Inflammatory back pain (such as Ankylosing Spondylitis, discitis, vertebral osteomyelitis, or spinal epidural abscess)¹.

RED FLAG SCREENING: SPECIFIC FOR LOW BACK PATHOLOGY

History & Symptoms

- o Atypical Presentation such as prolonged EMS, presence of constitutional symptoms.
- o Suspect shingles (herpes zoster) if the person has unilateral pain and rash in the distribution of a dermatome.
- o Could be multiple systems affected – for AS, pt may also have received treatment for conditions such as enthesitis, uveitis, cardiovascular problems.
- o Fever
- o Tuberculosis , or recent urinary tract infection.
- o Diabetes.
- o FH of Tuberculosis.
- o History of intravenous drug use.
- o HIV infection, use of immunosuppressants, or the person is otherwise immunocompromised.
- o Systemic (constitutional) symptoms, e.g. fever, chills, unexplained weight loss, referral.

- **Referral should be made to rheumatology specialist in secondary care by assessing clinician (GP, ANP, APP, Physiotherapist)**

Fracture¹

- Three main categories - traumatic, insufficiency and pathologic.
- Risk Factors: Osteoporosis, Trauma (RTC, fall, assault), prolonged use of steroids, Paget's Disease, female, overuse/overtraining, lumbopelvic radiation, osteomyelitis, multiple myeloma,
- **Referral should be made to local A and E department immediately by assessing clinician (GP, ANP, APP, Physiotherapist) for acute management.**
- **Urgent referral to spinal unit**
- **Referral to 2 week wait if appropriate**

Metastatic Spinal Cord Compression (MSCC)¹

- Spinal cord compression by direct pressure and/or induction of vertebral collapse or instability by metastatic spread or direct extension of malignancy that threatens or causes neurological disability.
- Incidence – 80 cases per million people every year².
- Constitutional symptoms – Unexplained weight loss, Non-mechanical night pain, fever, malaise.
- Other Symptoms – additional pain in the cervical spine or thoracic spine, significant change in the nature of pain, spinal pain aggravated by straining (toilet, coughing, sneezing), localised spine tenderness, neurological symptoms (radicular pain, any limb weakness, difficulty in walking, sensory loss, loss of coordination, Bladder and Bowel dysfunction, saddle anaesthesia).
- **Referral should be made to local A and E department immediately by assessing clinician (GP, ANP, APP, Physiotherapist) to address acute symptoms**
- **Urgent referral to spinal unit**

AAA³

- 65-75% of AAA cases are asymptomatic .
- Most common symptoms is awareness of pulsating mass in abdomen, with or without pain, following by abdominal pain and back pain (varying from deep and dull pain to knifelike pain and the patient may complain of increased shortness of breath; symptoms may be aggravated by general exertion but can appear mechanical in nature.
- Groin, buttock or flank pain may be experienced because of increased pressure on other structures and pain may also radiate to the neck, shoulders, chest or posterior thighs.
- Risk Factors: Age > 60, Males (6 male: 1 female for incidence), cardiovascular risk factors, family history of AAA and infectious/inflammatory disorders.
- Abdominal Aortic palpation – Pulsating Mass may be present; Presence of >3cm diameter on aorta palpation is regarded as AAA N.B - ability to palpate is influenced by abdominal girth and diameter of aneurysm.
- **Referral should be made to local A and E department immediately by assessing clinician (GP, ANP, APP, Physiotherapist)**

RED FLAG SCREENING: SPECIFIC FOR LOW BACK PATHOLOGY

History & Symptoms

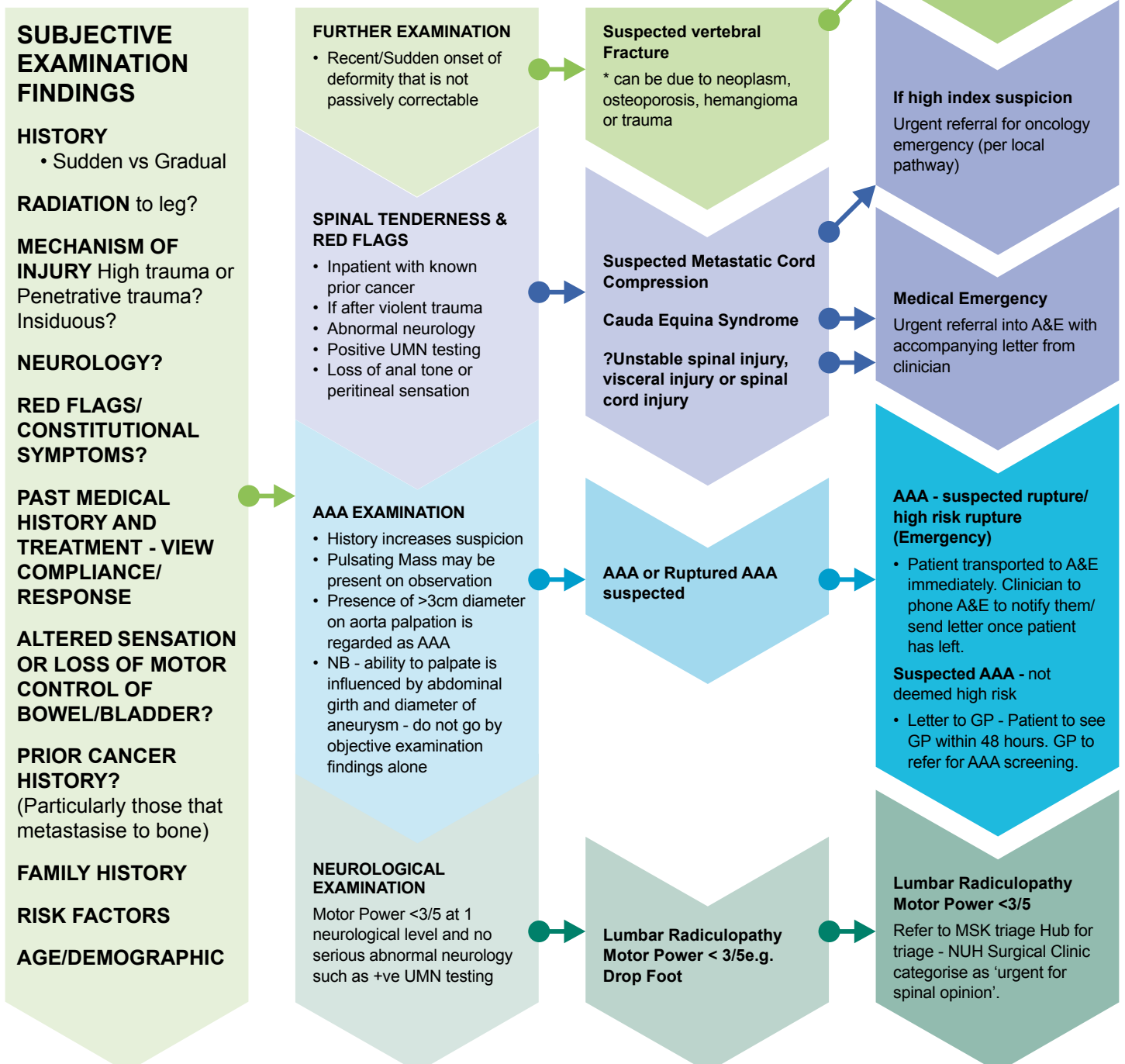
Visceral Referral⁴

- Accounts for 2% of LBP (including AAA).
- Possible visceral referrals include: bladder, kidney (flank pain), ureter, liver (right-sided thoracolumbar pain).
- **If visceral referral possible cause and assessed by MSK Triage team or core physiotherapy team. Refer back to GP with letter.**

References

- ¹ NICE endorsed low back pain pathway (2017)
- ² NICE 2008 MSCC guidelines
- ³ Knaap and Powell (2011)
- ⁴ Goodman and Synder (2012)

TOOL TO AID CLINICAL JUDGEMENT WHEN SERIOUS PATHOLOGY SUSPECTED



DIAGNOSIS: MECHANICAL NON-SPECIFIC LOW BACK PAIN (ACUTE, SUBACUTE, PERSISTENT)

TYPE OF INFORMATION	GUIDELINES
Background information	<ul style="list-style-type: none"> LBP is the largest single cause of loss of disability adjusted life years and the largest single cause of years lived with disability in England.³ It affects around one third of the adult population each month.² In most people, low back pain is non-specific and serious/specific causes are rare. Patient-centred approach is best with a focus on self-management. Appropriate acute back pain management has the potential to reduce the disabling effects of spinal pain with improvements on physical, emotional and social function. Most episodes of non-specific back pain resolve within four weeks with self-care. People with low back pain who are at higher risk of long-term pain and functional disability include those with: <ul style="list-style-type: none"> Pain lasting for longer than 12 weeks. Psychosocial distress. Maladaptive coping strategies such as avoidance of work, movement, or other activities due to fear of exacerbating back pain. Pain coping characterised by excessively negative thoughts about the future ('catastrophising'). People who have had low back pain often have episodes of recurrence and may develop repeated 'acute on chronic' symptoms. It is estimated that between 5 and 30% of patients who develop acute and subacute LBP go on to develop persistent low back pain².
Subjective History	<ul style="list-style-type: none"> Tension, soreness or stiffness in the lumbosacral region which varies with changes in posture and/or movement.² History questioning should include an assessment for the presence of red flag symptoms, which would imply serious conditions. If signs of serious conditions (red flags) present, specialist referral should be made. The assessment should also capture potential biopsychosocial barriers to an improvement in the patient's condition so that subsequent treatment can be tailored to address these barriers. Examples of potential barriers include high levels of pain, perceived frailty or vulnerability, psychosocial factors and maladaptive strategies such as kinesophobia or prolonged bed rest. The assessing clinician could also use the StArt back pain tool to as part of the assessment for the person's risk of back pain disability and this can then guide decisions regarding management². Subjective Markers could include: <ul style="list-style-type: none"> The level of function such as walking distance, whether the patient is at work. VAS score/duration of pain/duration of time it takes to relieve symptoms. Completion of STarT back tool <p>At follow-up, if symptoms persist or are worsening the clinician should continually reassess for red flags and any barriers to the patient's improvement (for example, maladaptive strategies and negative perception of condition).</p>
Physical Examination findings	<ul style="list-style-type: none"> Examination for features of mechanical back pain, for example pain is reproduced by back movement and/or changes in postures. Remaining examination led by patient history (for example functional demonstration of the movement/position identified by the patient to provoke their symptoms, neurological assessment). Assess for spinal deformity (scoliosis, kyphosis or otherwise). Neurological assessment if appropriate Screen hip and sacro-iliac joint
Investigations	<ul style="list-style-type: none"> Do not offer imaging (x-ray, MRI) for patients with suspected mechanical non-specific low back pain in the absence of leg pain and or red flags

DIAGNOSIS: MECHANICAL NON-SPECIFIC LOW BACK PAIN (ACUTE, SUBACUTE, PERSISTENT)

TYPE OF INFORMATION	GUIDELINES
<p>Conservative management</p>	<p>Treatment should facilitate excellent patient compliance with high-quality conservative management strategies; these could include:</p> <p>All clinical consultations should include reassurance/education to facilitate self-efficacy: -</p> <ul style="list-style-type: none"> • Use of different media (oral and written) to aid the person’s learning style. This includes the MSK together self-help website. • Use functional explanations for pain (sprained back, non-serious back pain). Example: “Many people have back pain from time to time but it is rare for this to be caused by a specific problem. Mostly all that is needed is to get your back moving again and things will settle down”. • Avoid use of terminology/messages that may harm or hinder patients such as “wear and tear, degeneration, crumbling”, “pain means harm”, “you should avoid bending/lifting.”² • Use terminology that can help promote resilience and facilitate improvements in people with low back pain, example: “your back is one of the strongest structures in your body” and encourage normal movement and activity. • Address patient concerns about imaging where applicable. • Promote good quality self-management. • Facilitate early return to work – For example, use of fit notes to support return to work and communicate suggestions to the employer. Help the person negotiate an early return to work if at all possible. Consider the return to work scheme if the patient would like additional support with this. • Goal setting (SHORT/MEDIUM/LONG). Give realistic time scales. • Shared decision-making. <p>Pain medication as required -</p> <ul style="list-style-type: none"> • Consider oral NSAIDs +/- gastroprotective medication if appropriate.¹ • Weak opioids (with or without paracetamol) for managing acute low back pain only if an NSAID is contraindicated, not tolerated or has been ineffective.¹ <p>Physiotherapy - Exercise (+/- manual therapy)</p> <ul style="list-style-type: none"> • Take the patient’s specific needs and preferences into account when choosing the type of exercise and whether it is in a group or individual setting. • Encourage activity and address inactivity; bed rest is not recommended.¹ • Graded Exposure. Try to address psychosocial barriers such as fear-avoidance of activity/unhelpful beliefs • MSK Physiotherapists and APP triage team can refer into Bfit groups held across the hub sites (Newark, Ashfield and Kings Mill) <p>In complex cases or where symptoms have not improved with 12 to 16 weeks of core therapy: -</p> <ul style="list-style-type: none"> • Consider arranging band 7/8 MSK assessments and expertise via referral into the MSK alliance. • Consider whether a (further) trial of 1:1 physiotherapy is indicated and/or other treatment interventions from the MDT. • Consider referral into PICs pain management services if all appropriate physiotherapy and analgesic/exercise advice has failed to improve symptoms <p>Do not use or refer for these interventions¹:</p> <ul style="list-style-type: none"> • Interferential therapy, PENS or TENS, ultrasound, acupuncture, or traction • Belts, corsets, foot orthotics, or rocker sole shoes. • Spinal injections for managing low back pain (except for considering radiofrequency denervation for facet joint-related low back pain)

DIAGNOSIS: MECHANICAL NON-SPECIFIC LOW BACK PAIN (ACUTE, SUBACUTE, PERSISTENT)

TYPE OF INFORMATION	GUIDELINES
<p>Referral on for secondary care opinion:</p>	<ul style="list-style-type: none"> • Spinal surgery is no longer available for non-specific Low Back Pain (see Nice Guidance 59) - if pain persists despite treatment, consider referral to local pain clinic. The spinal unit will no longer accept these referrals. <p>Pain Management referral to PICs may be necessary:</p> <ul style="list-style-type: none"> • When there is diagnostic uncertainty • Speciality as directed by clinical guidelines if alternative diagnosis is suspected • If symptoms are not improving with 12-16 weeks of patient compliance with high-quality conservative management (including physiotherapy input) and if the patient has seen band 7/8 clinicians, consideration can be made by the band 7/8 clinician to refer the patient on for secondary care orthopaedic assessment to evaluate alternate diagnoses, consider investigative measures and direct treatment. <p>FACET JOINT PAIN - Regarding facet joint pain - when to refer to secondary care pain management services:-</p> <ul style="list-style-type: none"> - The features subjectively include: Increased pain unilaterally or bilaterally on lumbar paraspinal palpation • Increased back pain on 1 or more of the following: extension (more than flexion) • rotation, extension/side flexion, extension/rotation • No radicular symptoms • No sacroiliac joint pain elicited using a provocation test.⁵ - The patient has trialled good-quality conservative management (as described above) before referring for consideration of radiofrequency denervation. - For assessment for radiofrequency denervation for people with persistent low back pain when non-surgical treatment has not worked, AND the main source of pain is thought to come from structures supplied by the medial branch nerve, AND the person's pain is limiting their quality of life.¹ - Only perform radiofrequency denervation in people with persistent low back pain after a positive response to a diagnostic medial branch block.¹ - Radiofrequency denervation may be repeated if this gave the patient 12-16 months of pain relief - MRI is not necessary to aid diagnosis⁵ - Therapeutic facet joint injections are not recommended. - Patients should typically be having physical rehabilitation simultaneously with radiofrequency denervation treatment

References

¹ NICE 2016 guidelines low back pain and sciatica in over 16s (NG59)

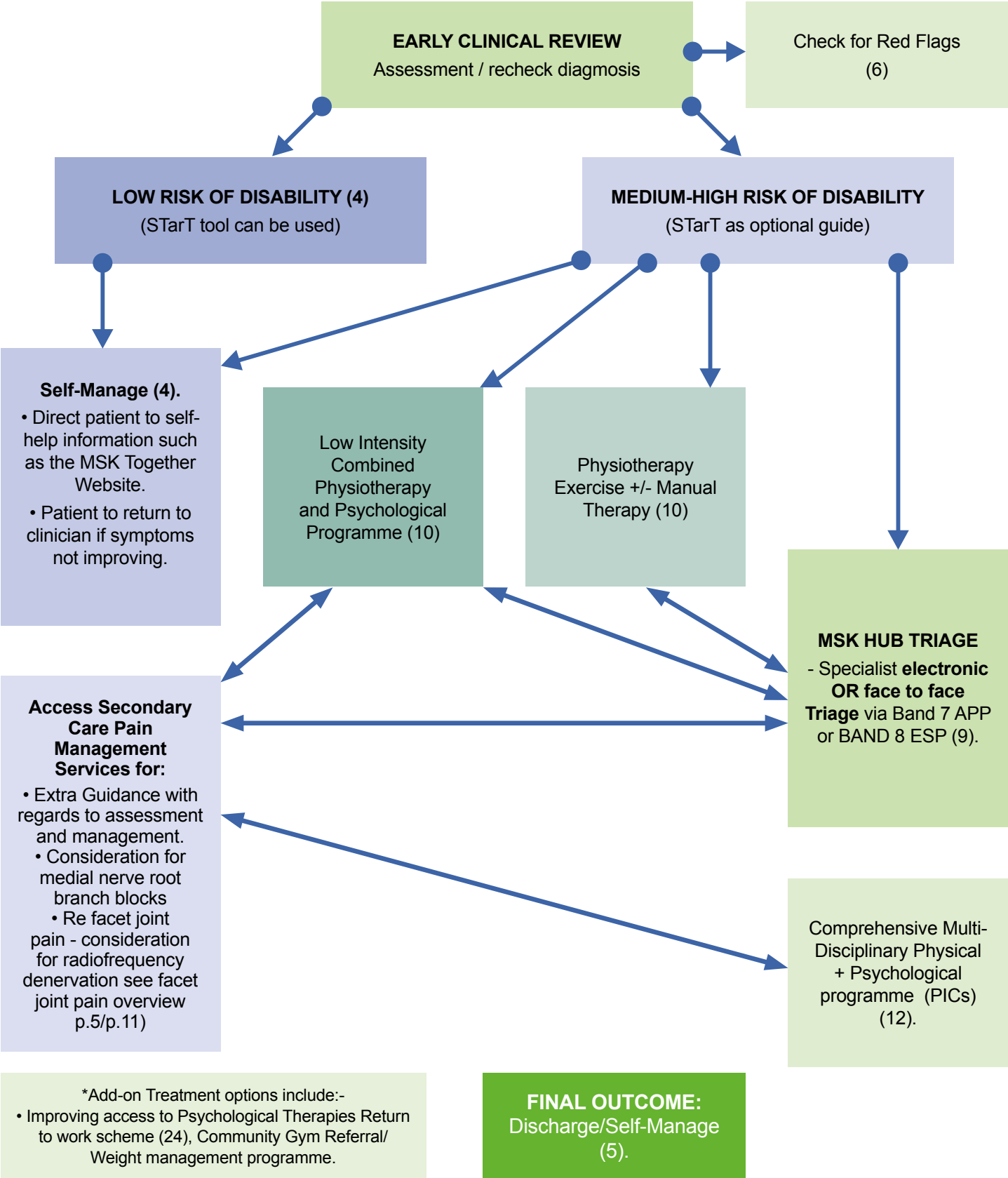
² CKS Back Pain – Low (without radiculopathy) – April 2017.

³ Global Burden of Disease 2013

⁴ STarT guidance

⁵ National low back pain and radiculopathy pathway (2017)

MECHANICAL LOW BACK PAIN WITH NO LEG SYMPTOMS OVERVIEW



Note - the numbers in brackets refer to the boxes within the National Low back Pain and Radicular Pathway (2017).

DIAGNOSIS: LUMBAR RADICULOPATHY

TYPE OF INFORMATION	GUIDELINES
Background information	<p>Lumbar radiculopathy is defined in terms of symptoms (including pain and paraesthesia) and signs (including weakness) in the distribution of a spinal nerve root.</p> <p>Nerve root pain can be due to many causes including disc herniation (90% of case), spinal stenosis, spondylolithesis, neoplasm (rare) or infection (rare)¹.</p> <p>73% of radiculopathy patients report reasonable to major improvement in symptoms within 12 weeks¹. A poorer prognosis has been documented in1:-</p> <ul style="list-style-type: none"> - Women - recovery is slower and the risk of an unsatisfactory outcome is greater than for men. - People who initially have greater functional impairment or pain. - People with psychosocial risk factors
Subjective history	<ul style="list-style-type: none"> • Low back pain. • Possible tingling, numbness, shooting/burning pain, altered sensation usually unilaterally. • Leg pain-radicular/radiate from low back into the leg towards or beyond the knee. • Lumbar Stenosis is narrowing of the spinal canal and typical causes pain which is relieved by flexion-based activities and worsened with extension based activities +/-spinal claudication (bilateral calf pain, paraesthesia or numbness on walking).¹
Physical Examination findings	<p>Recommended physical examination techniques</p> <ul style="list-style-type: none"> • Full lower limb neurological examination to include the assessment of sensation, myotomes and reflexes. (patella/medial hamstrings/ankle jerk). • UMN Assessment (choose from Plantar Reflex/Clonus/Rhombergs/Dysdiadochokinesia/ Finger-NoseTest/Heel-shin test/ multijoint movement looking for extensor pattern in upper or lower limb/pronator drift/hoffmans/observation of initiation of co-ordinated movements such as sit to stand, gait). • Lumbar and hip Range of Movement. <p>Presentation -</p> <ul style="list-style-type: none"> • Muscle atrophy, Segmental motor deficit, Segmental sensory change, Hyporeflexia¹ • Stenosis Presentation – symptoms low back pain/legs symptoms which may be provoked with extension based activities and eased with lumbar flexion.¹
Investigations	<ul style="list-style-type: none"> • Do not routinely offer imaging for patients with radicular symptoms.¹ • Consider imaging (i.e. Lumbar MRI) for radiculopathy only if the result is likely to change management¹. • Imaging results should be assessed in relation to whether they correlate with the patient's examination findings. This will facilitate decision-making regarding ongoing management.² • Imaging should be communicated to patients in a manner that facilitates appropriate self-management strategies rather than maladaptive strategies or perceived frailty.
Conservative management	<p>Treatment should facilitate excellent patient compliance with high-quality conservative management strategies; these could include:</p> <ul style="list-style-type: none"> • Shared decision-making. • Reassurance/ Education regarding their condition and the aims of physiotherapy (consider the use of different media to complement their individual learning style). • Pain medication as required - Neuropathic pain relief/NSAID medications.

DIAGNOSIS: LUMBAR RADICULOPATHY

TYPE OF INFORMATION	GUIDELINES
<p>Conservative management</p>	<p>Exercise +/- Manual therapy via Physiotherapy ²</p> <ul style="list-style-type: none"> • Take the patient's specific needs and preferences into account when choosing the type of exercise, whether it is in a group or individual setting. • Encourage activity and address inactivity; bed rest is not recommended. • Graded Exposure. Try to address psychosocial barriers such as fear-avoidance of activity/ unhelpful beliefs. • Promote and facilitate return to work – consider the return to work scheme if the patient would like additional support with this (box 24) ². • Goal setting (SHORT/MEDIUM/LONG). Give realistic time scales. • Consider a referral into the Bfit programme (combined physical and psychological programme when there are psychological obstacles to recovery such as anxiety.²) • The band 7/8 clinicians can refer to the MDT Pain Management Service (PICs) when there are psychological obstacles to recovery such as anxiety and depression, for example, avoiding normal activities based on inappropriate beliefs about their condition or when previous treatments have not been effective. <p>Add-on Treatment options</p> <ul style="list-style-type: none"> • The patient can also self-refer to the 4 IAPT services (Insight, Trent PTS, Turning Point, Let's Talk Wellbeing). This could be appropriate if there are psychological barriers to an improvement in their symptoms.
<p>Referral on to secondary care consultant/pain management services</p>	<p>The patient should have had an MRI scan or CT scan if unable to have an MRI scan.²</p> <p>Prior to referral:-</p> <ul style="list-style-type: none"> • MRI report and imaging to be available • Full medical history and medications to be available • History/Examination – see above • Assessment of severity of symptoms ▪ • Ask patient if tolerable, non-tolerable and whether improving, worsening or plateaued • Outcome measures could include NPRS for leg/back pain, PSFS, EQ-5D, Oswestry Disability Index (ODI). <p>Once referred to secondary care, the following non-conservative procedures can be considered for people who have radiculopathy. These can only be considered if the MDT feel there is 'possible' concordant nerve compression or the nerve root compressed may be responsible for the clinical findings: - ²</p> <ul style="list-style-type: none"> • Epidural injections/nerve root block (via Pain Management services) • Spinal decompression (via surgical spinal teams) <p>Epidural injections/nerve root block may be considered for severe, non-controllable radicular pain in prolapsed intervertebral disc early in the clinical course for symptom control (box 22) ²</p> <p>Consider referral to PICs or for spinal opinion for acute radicular pain if:</p> <ul style="list-style-type: none"> • No response to appropriate physiotherapy and analgesia (8-12 weeks if non-tolerable radicular pain which has been refractory to conservative treatment intervention, including NSAIDs and a trial of at least 2 neuropathic medications at therapeutic dose (see APC, NICE (CG173³)) • Concordant MRI findings • Very severe radicular pain, which is not controllable with analgesia or nerve root injection, may require early surgery likely to be at the 1-3 week stage. Early surgery may also be required if accompanied by major radicular weakness (motor power <3/5 • Later surgery may occur in patients with symptoms of fluctuating severity (box 23).²) • Patients are appropriate for spinal referral if they would not decline surgery if offered

DIAGNOSIS: LUMBAR RADICULOPATHY

TYPE OF INFORMATION	GUIDELINES
Referral on to secondary care consultant/pain management services	Extra note:- Note - Injections for central or foraminal stenosis (without disc herniation) are not approved. Fusion surgery may still be considered as a necessary adjunct to another procedure performed for conditions other than non-specific low back pain, e.g. decompression for spinal stenosis with symptoms of claudication, radicular pain or other indication ² .

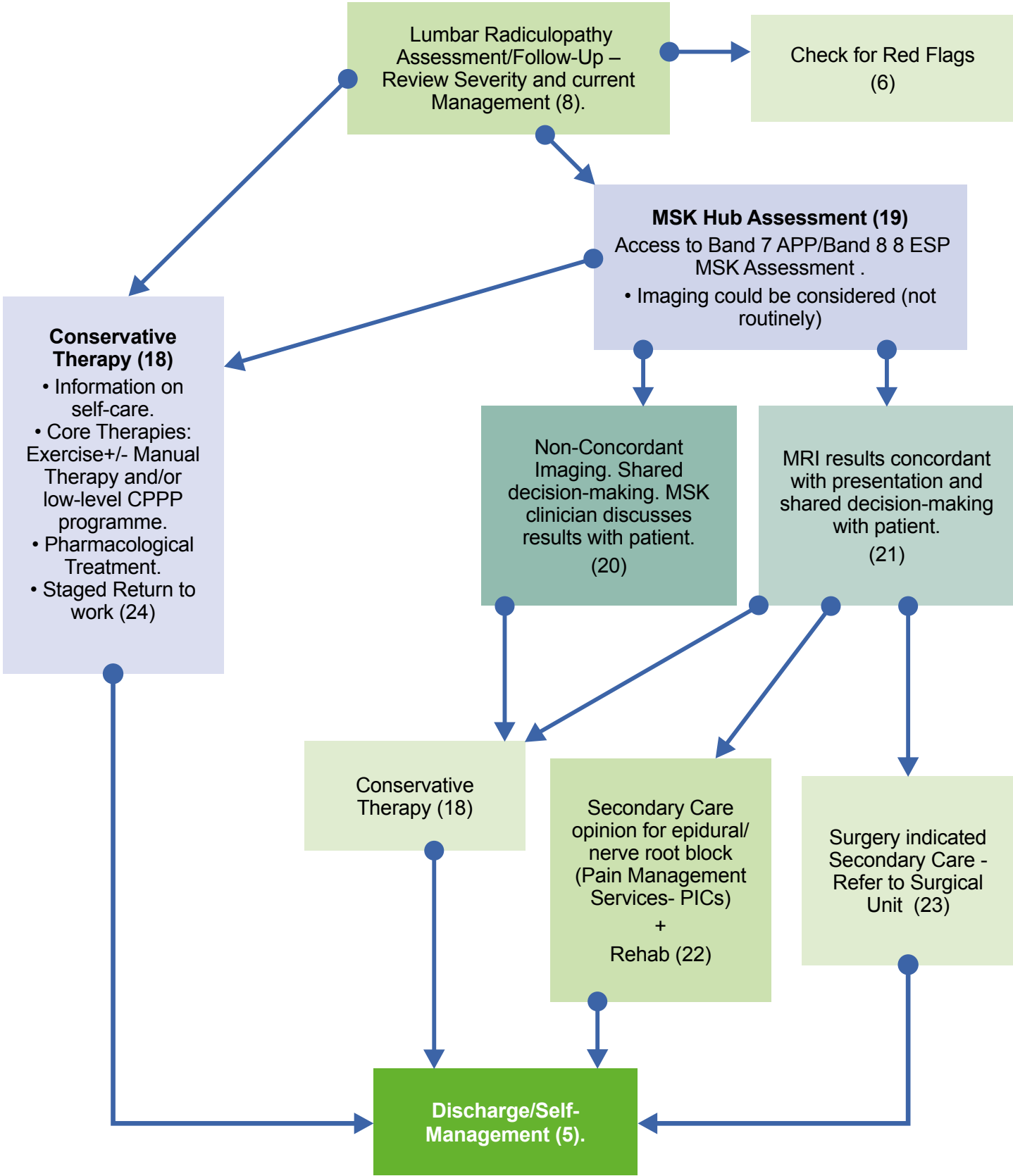
References

¹ NICE CKS Low Back Pain and Sciatica (2017).

² NICE Endorsed National Low Back and Radicular Pain Pathway (2017).

³ NICE CG173

LUMBAR RADICULOPATHY OVERVIEW



Note - the numbers in brackets refer to the boxes within the National Low back Pain and Radicular Pathway (2017).

DIAGNOSIS: COCCYGEAL PAIN

TYPE OF INFORMATION	GUIDELINES
Background information	<p>Conservative treatment is thought to be successful in 90% of cases, and many cases resolve without medical treatment.</p> <p>The incidence of coccygeal pain is unknown. Risk factors are thought to include obesity and female gender (5 x more common).</p>
Subjective history	<ul style="list-style-type: none"> • The person complains of localised pain over the coccyx or over the “tailbone”. • Symptoms could occur insidiously or through direct trauma. • Aggravating factors could include prolonged sitting, leaning back when sitting, prolonged sitting and rising to a standing position, sexual intercourse and/or defecation.
Physical Examination findings	<ul style="list-style-type: none"> • Symptom reproduction with pain on palpation of the coccyx. • Check for alternative diagnoses through neurological examination/assessment of functional movement/lumbar range of movement.
Investigations	<ul style="list-style-type: none"> • X-ray to assess for bony pathology/fracture. • No other investigations would be typically required to aid the diagnosis of coccygeal pain.
Conservative management	<p>Conservative treatment is thought to be successful in 90% of cases and many cases resolve without the person seeking medical treatment.</p> <p>Treatment should be individually tailored to address any underlying barriers to improvement - such as reduced sleep, anxiety/depression, catastrophisation, kinesiophobia, and reduced physical activity levels.</p> <p>Use a specially designed coccyx cushion, which can reduce the pressure on the coccygeal region when sitting.</p> <ul style="list-style-type: none"> • Advice regarding regular movement - Avoid prolonged sitting whenever possible – try to stand up and walk around regularly; leaning forward while seated may also help. • Heat/Cold Therapy could be used. • Pharmacological Management: Take over-the-counter painkillers (such as paracetamol, ibuprofen)., Use of laxatives (medicines to treat constipation) if the pain is worse when the patient tries to open their bowels.
Referral on to secondary care consultant/pain management services	<ul style="list-style-type: none"> • Consider cortisone injections for coccygeal pain for patients in which good-quality conservative treatment has not eased their symptoms. • Surgery for coccydynia is usually only recommended when all other treatments have failed. It may involve removing some of the tailbone (partial coccygectomy) or occasionally all of it (total coccygectomy). It takes a long time to recover from coccygectomy, anywhere from a few months to a year.
Prognosis	<p>Patient with coccygeal pain usually respond well to conservative management strategies.</p>

DIAGNOSIS: OTHER SPECIFIC CAUSES OF LOW BACK PAIN (E.G. SPONDYLOLISTHESIS)

TYPE OF INFORMATION	GUIDELINES
Background information	<ul style="list-style-type: none"> • NICE CKS – “If an underlying cause for the low back pain has been identified, manage according to the specific diagnosis”¹ • Spondylolisthesis, regardless of the type, can be preceded by spondylolysis, a fractured pars interarticularis of the lumbar vertebrae. • Spondylolisthesis can be asymptomatic and are graded as 1-4, with 4 being the highest amount of translation.
Subjective history	<ul style="list-style-type: none"> • Varies depending on the specific cause of the low back pain. • Use subjective examination to aid diagnosis/lower suspicion of other causes e.g. vascular, hip pain etc.
Physical Examination findings	<ul style="list-style-type: none"> - Varies depending on the specific cause of the low back pain - Use physical examination to aid diagnosis/lower suspicion of other causes e.g. vascular, hip pain etc.
Investigations	X-ray/MRI would be used to identify if suspicious of a specific cause for low back pain such as spondylolisthesis. In adults with radiculopathy, MRI should be considered.
Referral on to secondary care consultant/pain management services	<p>Spinal Unit QMC recommendations - Persistent pain from specific cause (e.g. spondylolisthesis) MUST have had pain clinic opinion first prior to any referral to the spinal unit at QMC.</p> <p>If a specific cause for the back pain (>3/12) is possible on MRI – review diagnosis, and spinal referral may be appropriate, but exclude other causes e.g. vascular, hip pain etc.)</p>
Referral on to secondary care consultant/pain management services	<ul style="list-style-type: none"> • Consider cortisone injections for coccygeal pain for patients in which good-quality conservative treatment has not eased their symptoms. • Surgery for coccydynia is usually only recommended when all other treatments have failed. It may involve removing some of the tailbone (partial coccygectomy) or occasionally all of it (total coccygectomy). It takes a long time to recover from coccygectomy, anywhere from a few months to a year.
Prognosis	Varies depending on the specific cause of the low back pain

References

¹ NICE CKS Low Back Pain and Sciatica (2017).

DIAGNOSIS: SPECIFIC CAUSE OF LOW BACK PAIN - OSTEOPOROTIC FRACTURES

TYPE OF INFORMATION	GUIDELINES
Background information	<p>Osteoporosis</p> <ul style="list-style-type: none"> • Osteoporosis can affect men and women. Osteoporosis itself isn't a key risk factor for pain however it places the patient at an increased risk of fracture. • Most common in postmenopausal women. • 1: 12 men and 1:3 women over age 50 will suffer an osteoporotic fracture. • Hip Fracture, risk of falls and osteoporosis are interlinked. • Women who have suffered a fragility fracture (defined as fracture sustained from a fall from standing height or less) are at increased risk of fracture fractures, independent of their bone mineral density (BMD). • Audit of clinical practice is required and audit tool available. • Exclude other causes for spinal pain plus deformity, such as neoplasm, infection before a diagnosis of osteoporosis can be made.
Subjective history	<ul style="list-style-type: none"> • Risk Factors for Osteoporosis: <ul style="list-style-type: none"> • Fragility Fractures (more than 1) • Patients who have sustained one or more fragility fractures should be a priority for investigations and treatment of osteoporosis. • Age – a significant increase in prevalence with each decade after 60. • Gender – more female than male. • Ethnicity – white women have a 2.5 times greater risk compared with Afro-Caribbean women. • Reproductive Factors – early menopause means higher risk. • Family History – maternal, paternal and sister history; family history should not only include the diagnosis of osteoporosis but also of presence of kyphotic thoracic spine and fractures younger than 50. • Weight - Below average BMI is associated with higher risk. • Smoking - Men who smoke show greater loss of bone density at greater trochanter. Female smokers have higher risk of hip fracture; level of risk declines with smoking cessation but not until 10 years after quitting. • Alcohol – Evidence is inconsistent regarding alcohol use. • Exercise- Positive relationship between weight bearing exercise/activity on reduced risk of osteoporosis. Therefore sedentary patients are proven to be at higher risk. • Diet – inconsistent results on vitamin D and milk intake on reducing risk. • Secondary causes – anorexia nervosa, chronic liver disease, celiac, hyperparathyroidism, inflammatory bowel disease, male hypogonadism, renal disease, RA, long-term steroid use, vitamin D deficiency. • Risk Assessment <ul style="list-style-type: none"> • No specific tool to use. • Those at highest risk: women, over age 60 with a family history. • Secondary factors: Caucasian, early menopause, low BMI, smoking history, sedentary lifestyle, long term (>3 month) history of steroid use.

DIAGNOSIS: SPECIFIC CAUSE OF LOW BACK PAIN - OSTEOPOROTIC FRACTURES

TYPE OF INFORMATION	GUIDELINES
Physical Examination findings	<p>Recommended assessment measures for osteoporosis by CSP</p> <ul style="list-style-type: none"> • BMI (height and weight). • Chest expansion at xiphisternum level. • Cervical/thoracic deformity as measured by tragus to wall. • Shoulder flexion angle with patient against wall (indirect thoracic spine extension). • Lumbar spine range of movement (Shoeber's extension). • Some measure of strength and endurance should be included. • Balance assessment – 1 leg stand or Tinetti or other measure. • Functional assessment - could utilise the Osteoporosis Functional Disability Questionnaire. • Pain Assessment - such as the VAS.
Investigations	<p>Recommendations of investigative options (spinal):</p> <ul style="list-style-type: none"> • DXA • Quantitative Computerized tomography (QCT). <p>DXA</p> <ul style="list-style-type: none"> • Most accurate for assessing BMD and hence diagnosis of osteoporosis. • BMD of femoral neck + sex + age = used for estimated predictive of fracture risk. <p>QCT</p> <ul style="list-style-type: none"> • Benefits – great detail. • Disadvantages: high radiation dose and not always available. <p>Plain radiographs:</p> <ul style="list-style-type: none"> • Plain radiographs should not be used to diagnose or exclude osteoporosis. • If plain film radiograph suggest “severe osteopenia” then a DXA is indicated. • Can be used if vertebral fractures suspected as to do so would alter management (by grading) and there is an established method for reporting these findings. <p>Quantitative US (QUS) of calcaneus cannot be used to diagnose osteoporosis or to target treatment.</p> <p>Biomechanical markers of bone turnover should have no role in the diagnosis of osteoporosis.</p>
Conservative management	<p>Everyone with Osteoporosis should be encouraged to increase dietary calcium intake and also partake in weight bearing exercise.</p> <p>Aims of Treatment:</p> <ul style="list-style-type: none"> • Reduce the incidence of future fractures. • Reduce fracture-related morbidity. • Pain management • Patient education. • Improve psychological wellbeing. • Improve muscle strength, balance and CV fitness. • Reduce risk of falls. • Improve balance. <p>Exercise</p> <ul style="list-style-type: none"> • Benefits: reduces falls risk, minimizes further BMD loss. • Modes of exercise: <ul style="list-style-type: none"> - High intensity strength training. - Low impact weight bearing exercise. - Water-based/land-based depending on severity and irritability of the pain and level of function. - See CSP guidelines for further detail.

DIAGNOSIS: SPECIFIC CAUSE OF LOW BACK PAIN - OSTEOPOROTIC FRACTURES

TYPE OF INFORMATION	GUIDELINES
<p>Conservative management</p>	<p>Calcium intake.</p> <ul style="list-style-type: none"> - Postmenopausal women should aim for dietary intake of 1000mg calcium per day. - No evidence vitamin D supplements are needed for active people over age 65. <p>Ipriflavone – should only be used in conjunction with other interventions.</p> <p>Pain Management</p> <ul style="list-style-type: none"> - Vertebral fracture can be pain free or significantly painful. - Acute vertebral fracture management <ul style="list-style-type: none"> • Main aim: early mobilization plus adequate pain control. • RICE • Simple analgesia up to opioids (advice from pain management service may be required). • Hospital admission may be required. • Calcitonin is not license in the UK but has been shown to be of benefit for acute vertebral fractures for pain management. <p>Chronic Vertebral fracture management:</p> <ul style="list-style-type: none"> • Analgesia ladder. • Back strengthening exercises should be considered. • Psychological care is important – as sleep is often impaired. • Consider tricyclic antidepressants for sleep and psychological needs.
<p>Referral on to secondary care consultant/pain management services</p>	<p>Consider escalation to secondary care (spinal unit QMC) if there are any red flags, high severity of pain and/or a new fracture is suspected. Consider referral to pain management services.</p> <p>Surgical Treatment Options:</p> <p>NICE¹ recommends Percutaneous vertebroplasty, and percutaneous balloon kyphoplasty without stenting as options for treating osteoporotic vertebral compression fractures only in people:</p> <ul style="list-style-type: none"> • who have severe ongoing pain after a recent, unhealed vertebral fracture despite optimal pain management and • in whom the pain has been confirmed to be at the level of the fracture by physical examination and imaging.
<p>Prognosis</p>	<ul style="list-style-type: none"> • In patients who have pain due to vertebral collapse due to osteoporosis and have balloon kyphoplasty – these patients have improved pain control at 24 months but not necessarily improved function. • Early diagnosis and commencement of treatment results in fewer falls, fragility fractures and improved quality of life measures. • Early and adequate pain management results in fewer acute vertebral fracture morbidities.

References

- ² NICE (2013)- Percutaneous vertebroplasty and percutaneous balloon kyphoplasty for treating osteoporotic vertebral compression fractures (2013).
³ NICE CKS Osteoporosis (2017)
⁴ SIGN - The management of osteoporosis: a national clinical guideline (2013).

WHEN TO ORDER IMAGING

- Do not routinely offer imaging in a non-specialist setting for people with low back pain with or without radicular pain.
- Consider imaging only if red flags are suspected or if the result is likely to change management.
- Essential referral information for Lumbar MRI request:
 - Site of radicular pain; Location of pain/suspected nerve root involved; Previous surgery; Suspicion of other pathology e.g. spondylosis.
- The MRI department should be advised of any patient with an implanted metal device, so that the appropriate safety assessment can be made. The majority of patients with implanted surgical metalwork such as hip or knee replacements, orthopaedic metal plates and screws can safely undergo MRI, though it is often advised that unless clinically urgent, imaging is not carried out in the immediate post-operative period. A delay of 6 weeks is considered prudent.
- Most cardiac pacemakers are not MRI compatible. Many intracranial devices, clips, cochlear implants and intra-spinal stimulators are also not compatible. Some cardiac valves and vascular implants are contraindicated, so all devices need to be individually assessed by the MRI department.
- Imaging should be communicated to patients in a manner that facilitates appropriate self-management strategies rather than maladaptive strategies or perceived frailty.