

NATIONAL CLINICAL GUIDELINES

The Management of Low Back Pain in Adults

Ministry of Public Health

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المبادئ الإرشادية السريرية لدولة قطر
NATIONAL CLINICAL GUIDELINES FOR QATAR



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Abbreviations

The abbreviations used in this guideline are as follows:

AANS	American Association of Neurological Surgeons
AHRQ	Agency for Healthcare Research and Quality
ASIPP	American Society of Interventional Pain Physicians
CT	Computed Tomography
CCP	Cyclic Citrullinated Peptide
CPG	Clinical Practice Guideline
CSI	Central Sensitizing Inventory
DEXA	Dual-Energy X-Ray Absorptiometry Scan
FABER	Flexion, Abduction, External Rotation Test
GDG	Guideline Development Group
ITP	Intrathecal pump
LBP	Lower Back Pain
MDT	Multidisciplinary Team
MRI	Magnetic Resonance Imaging
NCDs	Non-Communicable Diseases
NCG	National Clinical Guideline
NCGPC	National Clinical Guideline & pathways Committee
NICE	The National Institute for Health and Care Excellence
PCS	Pain catastrophizing scale
PENS	Percutaneous Electrical Nerve Stimulation
PLSS	Post Lumbar Surgery Syndrome
PSEQ	Pain Self-Efficacy Questionnaire
RCT	Randomized Control Trial
RF	Rheumatoid factor
SCS	Spinal cord stimulation
SNRIs	Serotonin–Norepinephrine Reuptake Inhibitors
SSRIs	Selective Serotonin Reuptake Inhibitors
TENS	Transcutaneous Electrical Nerve Stimulation
WHO	World Health Organisation

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1 Information about this Guideline

1.1 Objective and Purpose of the Guideline

The purpose of this guideline is to define the appropriate diagnosis and management of low back pain in adults. The objective is to guide the appropriate assessment, investigations, diagnosis, treatment, and referral of patients presenting to any provider organisations in Qatar. It is intended that the guideline will be used primarily by healthcare professionals in primary, secondary and tertiary levels of care.

1.2 Scope of the Guideline

The following aspects of care are included within this guideline:

- Clinical presentation, assessment, investigations, and management of low back pain presenting in adults.
- Common causes of low back pain
- Referral criteria to Specialist Care.
- Overview of Specialist Management.

1.3 Editorial Approach

This guideline document has been developed and issued by the Ministry of Public Health of Qatar (MOPH), through a process which aligns with international best practices in guideline development and localisation. The guideline will be reviewed on a regular basis and updated to incorporate comments and feedback from stakeholders across Qatar.

The editorial methodology, used to develop this guideline, has involved the following critical steps:

- Extensive literature search for well-reputed, published evidence relating to the topic.
- Critical appraisal of the literature.
- Development of a draft summary guideline.
- Review of the summary guideline with a Guideline Development Group, comprised of practising healthcare professionals, subject matter experts and patient representatives, from across Qatar.
- Independent review of the guideline by the National Clinical Guidelines & Pathways Committee, appointed by the MOPH, from amongst stakeholder organisations across Qatar.

Whilst the MOPH has facilitated the development of the guideline, the MOPH has not influenced the specific recommendations made within it.

1.4 Sources of Evidence

The professional literature has been systematically queried using specially developed, customised, and tested search strings. Search strategies are developed to allow an efficient yet comprehensive analysis of relevant publications for a given topic and to maximise retrieval of articles with certain desired characteristics pertinent to a guideline.

For this guideline, all retrieved publications have been individually reviewed and assessed in terms of quality, utility, and relevance. Preference is given to publications that:

1. Are designed with rigorous scientific methodology.
2. Are published in higher-quality journals (i.e. journals that are read and cited most often within their field).
3. Address an aspect of specific importance to the guideline in question.

Further information about the literature search and appraisal process is included in the *Appendix*.

1.5 Evidence Grading and Recommendations

Recommendations made within this guideline are supported by evidence from the medical literature and, where possible, the most authoritative sources have been used in the development of this guideline. In order to provide insight into the evidence basis for each recommendation, the evidence hierarchy below has been used to grade the level of authoritativeness of the evidence used, where recommendations have been made within this guideline.

Where the recommendations of international guidelines have been adopted, the evidence grading is assigned to the underlying evidence used by the international guideline. Where more than one source has been cited, the evidence grading relates to the highest level of evidence cited:

- **Level 1 (L1):**
 - Systematic reviews of randomised controlled studies.
 - Randomised controlled trials with meta-analysis.
 - Randomised controlled trials.
- **Level 2 (L2):**
 - Observational studies, examples include:
 - Cohort studies with statistical adjustment for potential confounders.
 - Cohort studies without adjustment.
 - Case series with historical or literature controls.
 - Uncontrolled case series.
 - Statements in published articles or textbooks.
- **Level 3 (L3):**
 - Expert opinion.
 - Unpublished data, examples include:
 - Large database analyses.
 - Written protocols or outcomes reports from large practices.

In order to give additional insight into the reasoning underlying certain recommendations and the strength of each recommendation, the following recommendation grading has been used, where recommendations are made:

- **Recommendation Grade A (RGA):** Evidence demonstrates at least moderate certainty of at least moderate net benefit.
- **Recommendation Grade B (RGB):** Evidence is insufficient, conflicting, or poor and demonstrates an incomplete assessment of net benefit vs harm; additional research is recommended.
- **Recommendation Grade C (RGC):** Evidence demonstrates potential harm that outweighs benefit; additional research is recommended.
- **Recommendation of the GDG (R-GDG):** Recommended practice based on the clinical experience of the Guideline Development Group members.

1.6 Guideline Development Group Members

The following table lists members of the Guideline Development Group (GDG) nominated by their respective organisations and the National Clinical Guidelines & Pathways committee. The GDG members have reviewed and provided their feedback and approval of the guideline document. Each member has completed a declaration of conflicts of interest, which has been reviewed and retained by the MOPH.

Guideline Development Group Members		
Name (ordered as per surnames)	Title	Organisation
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1.7 National Clinical Guidelines & Pathways Committee Members

The following table lists members of the National Clinical Guidelines & Pathways Committee (NCGPC), appointed by the MOPH. The NCGPC members have reviewed and provided their feedback and approval of the guideline document. Each member has completed a declaration of conflicts of interest, which has been reviewed and retained by the MOPH.

National Clinical Guidelines & Pathways Committee (NCGPC) Members		
Name	Title	Organisation
Ms Huda Amer Al-Katheeri	Chair of the NCGPC, Director of Strategic Planning and Performance and Innovation Department	Ministry of Public Health
Shk Dr Mohammed Hamad J. Al Thani	Co-Chair of the NCGPC, Director Non-Communicable Diseases Prevention Programs Director	Ministry of Public Health
Dr Hani Ben Hassen Al Kilani	Senior Consultant, Executive Director for Corporate Clinical Policy and Guidelines	Hamad Medical Corporation
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Dr Ghassan Youseph Hommos	Senior Consultant Endocrinology	Al Emadi Hospital
Dr Marwan Abu-Hijleh	Professor and Dean	College of Medicine, Qatar University

1.8 Responsibilities of Healthcare Professionals

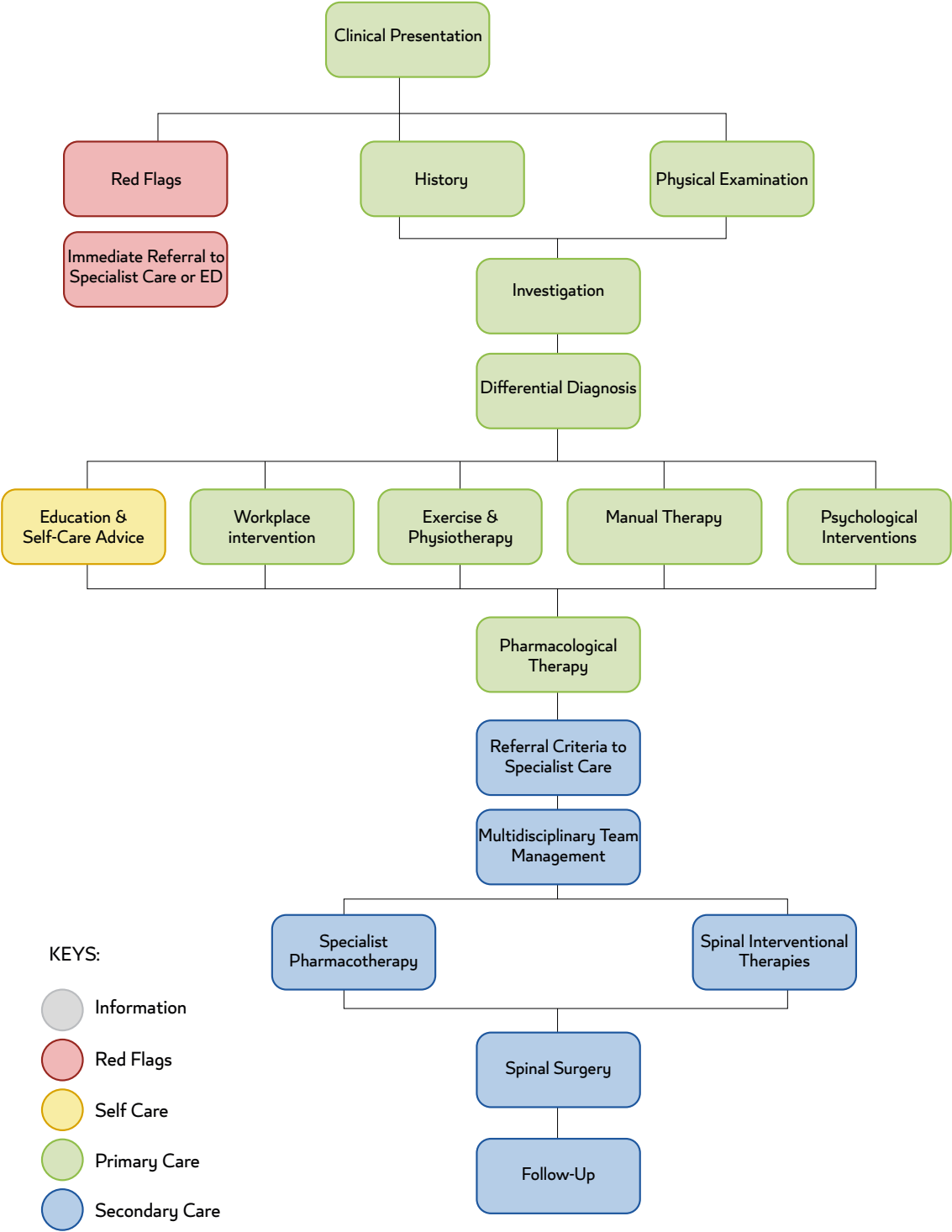
This guideline has been issued by the MOPH to define how health care should be provided in Qatar. It is based upon a comprehensive assessment of the evidence as well as its applicability to the national context of Qatar. Healthcare professionals are expected to take this guidance into account when exercising their clinical judgement in the care of patients presenting to them.

This guideline does not override individual's professional responsibility to take decisions that are appropriate to the circumstances of the patient concerned. Such decisions should be made in consultation with the patient, their guardians, or caregivers and should consider the individual risks and benefits of any intervention that is contemplated in the patient's care.

2 Low Back Pain Pathway

Click on a box below to see the relevant page of the pathway:

- Information about the Guideline
- Background Information
- Key Recommendations of the Guideline
- Abbreviations used in the Guideline
- Performance Measures



3 Key Recommendations of the Guideline

The key recommendations of this guideline are as follows:

Clinical Assessment (Section 5):

- Red flags are indicators for significant pathology that if present, require an urgent evaluation of the patient⁽¹⁾:
 - Cauda equina compression.
 - Severe neurologic involvement.
 - Malignancy.
 - Spinal fracture.
 - Infection.
 - Abdominal aortic aneurysm.
 - Cystic kidney disease (not urgent, but important to consider).

Investigations (Section 6):

- Imaging and laboratory tests are not required for most patients to diagnose Lower back pain (LBP)⁽²⁻⁵⁾ **[L1, RGB]**.
- Consider the following tests based on history and results of examination⁽⁶⁻⁹⁾:
 - Complete blood cell count.
 - Erythrocyte sedimentation rate.
 - C-reactive protein.
 - Blood cultures.
 - Urinalysis.
 - Ultrasound of bladder.
 - Imaging:
 - Lumbar spine radiography may be indicated in certain people but should not be used routinely for non-specific LBP **[R-GDG]**.
 - Computed tomography (CT).
 - Single photon emission CT.
 - CT myelography (as indicated by specialist team) **[R-GDG]**.
 - Magnetic resonance imaging (MRI).
 - Densitometry by DEXA scan.
 - Electromyography.
 - Nerve conduction velocities.
 - Facet medial branch diagnostic block.
 - Other disease-appropriate laboratory studies, i.e.:
 - Serum uric acid.
 - Rheumatoid factor (RF) Quantitative.
 - Cyclic Citrullinated Peptide (CCP).
 - Vitamin D, Serum calcium, magnesium.
 - HLA-B 27.

Primary Care Management (Section 8):

- Non-pharmacological treatments should be considered as the first-line treatment in both acute and chronic LBP^(3,10) **[L1]**.
- Prevention is important in managing LBP since recurrences are common **[L2, RGA]**.

Education and Self-Care Advice (Section 8.1):

- Education may be effective for the management of LBP^(2, 10-14).
- All patients should receive **[L1]**:
 - Information on the nature of LBP.
 - Self-care advice^(3, 10, 13, 14).
 - Promote a return to work, wherever possible.

Workplace Intervention (Section 8.2):

- Workplace modification programmes aimed at risk or task modifications have no evidence of a preventive effect for LBP (2, 4, 15-17) **[L1, RGB]**.
- Assistive devices and other technologies (see Section 8.3.4) also have no evidence of a preventive effect (2, 4, 10, 16, 17) **[L1, RGB]**.
- Regarding workplace interventions, exercise has a documented positive benefit in patients with LBP and can be applied in the workplace with the potential to prevent LBP (17) **[L1, RGA]**. Additionally, work accommodations, such as modified return to work, and communication with the workplace has been found to be effective in preventing pain-related work disability (11).

Exercise and Physiotherapy (Section 8.3.1):

- Therapists may use specific trunk muscle activations for patients with acute and subacute LBP with and without leg pain (10) **[L1, RGB]**.
- Consider exercise therapy for patients with chronic LBP (10) **[L1, RGA]**.
- When choosing the type of exercise, review patient's preferences, capabilities, and specific needs.

Manual Therapy (Section 8.3.2) (5, 10):

- Manual therapy may be offered as adjuvant treatment for managing acute, subacute or chronic LBP with or without sciatica **[L1, RGB]**. Consider the following approaches:
 - Lower quarter nerve mobilization for patients with subacute and chronic LBP with sciatica **[L1, RGB]**.
 - Thrust and non-thrust mobilization for patients with acute, subacute and chronic **[L1, RGA]**.
 - Soft tissue mobilization for short-term pain relief in patients with acute and chronic LBP **[L1, RGB]**.
- Manual therapy is not recommended in patients with severe osteoporosis or severe degenerative changes (10) **[L1, RGB]**.
- Manual therapy should only be prescribed following proper subjective and objective evaluation of patients to ensure safe and effective manual therapy intervention (5).
- Traction is not recommended for neither acute, subacute nor chronic LBP (5).

Acupuncture (Section 8.3.3):

- Acupuncture is not recommended for the management of LBP due to insufficient evidence of benefit **[L1, RGB]**, but may be considered for short-term pain relief (18, 19).

Dry Needling (Section 8.3.3):

- Dry needling could be recommended, when combined with other therapies, to reduce LBP pain intensity post-intervention and in the short-term (20).
- There is no evidence that suggests improvement in disability at post-immediate or at short-term follow up, whether used alone or in conjunction with other interventions (20).
- Dry needling could be considered in cases erector spinae muscle stiffness, as it has been proven to effectively reduce stiffness (21).
- Dry needling may improve pain and functional balance, when administered in painful areas and when all the muscle groups are targeted (22).

Psychological Interventions (Section 8.4):

- Early identification of psychosocial risk factors (i.e., yellow flags) is recommended, to assess risk of persistent pain and/or disability and to establish risk-based management (2).
- The use of screening tools is recommended to assess psychosocial factors associated with LBP. Examples of screening tools for patients with LBP are (23):
 - *Central Sensitizing Inventory (CSI)*.
 - *STarT Back Screening Tool*.
 - *Pain catastrophizing scale (PCS)*.
 - *Pain Self-Efficacy Questionnaire (PSEQ)*.

- Psychological therapies should not be offered alone. They are recommended only as part of a multimodal therapy along with physical interventions **[L1, RGA]**^(14, 23). Consider the following psychotherapeutic approaches and techniques^(2, 12-14, 23):
 - Patient-clinician relationship and clinician's attitude, particularly rapport building.
 - Re-assurance.
 - Encouragement of self-management (including self-efficacy belief, goal-setting, and pacing).
 - Cognitive behavioural therapies.
 - Progressive muscle relaxation.
 - Biofeedback.
 - Acceptance and commitment therapy.
 - Mindfulness.
 - Meditation.

Pharmacological Treatment in Primary Care (Section 8.5):

- Pharmacological therapy may be recommended initially in conjunction with non-pharmacological treatments **[R-GDG]** or may be recommended if non-pharmacological treatments are ineffective or insufficient for severe acute pain management^(11,24,25).
- Consider the following medications for managing LBP^(24,25) **[L1, RGA]**:
 - Oral non-steroidal anti-inflammatory drugs (NSAIDs) **[L1, RGA]**.
 - Paracetamol for acute and chronic LBP.
 - Skeletal muscle relaxants **[L1, RGA]**.
- Opioids are not recommended for pain management in patients with chronic LBP^(24,25) **[L1, RGC]**.
- Weak opioids with or without paracetamol may be offered for managing acute LBP only if^(24,26) **[L1, RGA]**:
 - NSAIDs are contraindicated, i.e. in patients with systematic co-morbidities.
 - NSAIDs are not tolerated.
 - NSAIDs provide insufficient pain management (consider referral to a specialist).

Referral Criteria to Specialist Care (Section 9):

Referral to a specialist is recommended for the following^(1,5,27) reasons:

- If specific pathology of the spine, soft tissues or viscera is suspected.
- If radicular pain or pathology is suspected.
- If patients present with any somatic warning signs or red flags (see Section 5.4).
- If patients fail to improve after 4 weeks of physiotherapy.
- If patients require any of the following:
 - Imaging studies.
 - Pharmacotherapy for longer than 4 weeks.
 - Pain management with opioids, antidepressants or anticonvulsants.
 - Management of comorbidities or psychosocial support.
 - Surgical or interventional treatments.

Specialist Management (Section 10):

- A multidisciplinary assessment may be required in^(2,3,13,28) **[L1, RGA]**:
 - Patients at medium-risk or high-risk of a poor outcome⁽²⁾.
 - Patients with chronic back pain^(1,2,14,23).

Specialist Pharmacotherapy (Section 10.2):

- In addition to the medication described in Section 8.5, that may be prescribed in a primary care setting, additional medication that may be considered in a specialist setting include:
 - **Opioids:**
 - Opioids are not recommended for pain management in patients with chronic LBP⁽¹¹⁾ **[L1, RGC]** but can be prescribed in a specialist setting under the supervision of a pain specialist **[R-GDG]**.
 - **Antidepressants:**
 - May be considered for use, under specialist supervision, in certain cases to treat neuropathic pain (also known as 'radiculagia')⁽²⁹⁾ **[L1, RGB]**.

- **Anticonvulsants:**
 - Anticonvulsants are generally not recommended for LBP treatment with/without radicular pain (sciatica), and should only be considered under the care of the specialist ^(21,27) **[L1, RGA]**.

Spinal Interventional Therapies (Section 10.3):

- Spinal interventional therapies such as spinal injections and radiofrequency modulation or denervation therapies, should only be performed by appropriately trained and privileged specialist physicians after due diagnostic evaluation **[R-GDG]**.
- Spinal injections may be considered in patients with radiculopathy^(1,5,14) **[L1]** and/or spinal stenosis^(1,5,14) **[L2]**, and/or facet joint pain and/or sacroiliac joint related pain **[R-GDG]**.
- In caudal stenosis with deficits, careful evaluation is required if caudal epidural injections are considered and Percutaneous Nucleoplasty and Annuloplasty (e.g. Bicuplasty) could be considered by a qualified practitioner **[R-GDG]**.

The following therapies may be considered by a specialist after evaluation of the patient to determine the appropriate treatment, according to patient-specific factors and the risk/benefit profile of the intervention:

- Epidural corticosteroids ⁽³⁰⁾.
- Local anaesthetics ⁽³⁰⁾.
- Anti-tumour necrosis factor agents (limited evidence, consider with caution) ⁽³¹⁾.
- Botulinum toxin A ⁽⁹⁾.
- The use of radiofrequency denervation may be considered in patients with moderate to severe chronic LBP if other non-surgical interventions are ineffective after a positive response to a diagnostic medial branch block ⁽⁵⁾ **[L1, RGB]**.
- Spinal cord stimulation (SCS) is indicated in patients failing to respond to conservative and other interventional therapies after a thorough evaluation by expert practitioners; such as in refractory PLSS or intractable “back and leg syndrome”. SCS is no way a treatment for “non-specific” LBP ⁽³⁰⁾ **[L1, RGB]**.
- Intrathecal pump (ITP) implants are also an option provided, a thorough expert assessment and multidisciplinary team (MDT) evaluation has been done. Such implants require an organized team led by an expert practitioner. ITP is no way a treatment for “non-specific” LBP ⁽³¹⁾ **[L1, RGB]**.

Spinal Surgery (Section 10.4):

- Spinal decompression is indicated as an emergency for patients with acute cauda equina syndrome and/or motor deficits ^(9, 32) **[L2, RGA]**.
- For all other patients, spinal surgery should be reserved as the last-choice treatment option and is not recommended for patients with non-specific pain ⁽¹⁾ **[L1, RGB]**.
- Spinal surgery must be considered carefully in the following patients and only if they fail to respond to non-surgical treatments ⁽⁵⁾ :
 - Radiculopathy ⁽⁹⁾ **[L2, RGA]**.
 - Spinal stenosis ⁽³³⁾ **[L2, RGB]**.
 - Slipped or herniated discs ⁽³³⁾ **[L2]**.
 - Spinal deformity ⁽³³⁾ **[L2]**.
 - Spinal tumours and metastatic spinal cord compression ⁽³³⁾ **[L2]**.
 - Spinal injury (e.g. fracture) ⁽³³⁾ **[L2]**.
 - Spinal instabilities, spondylolysis (with/without spondylolisthesis), and neurological claudication **[R-GDG]**.
 - Spinal fusion for non-specific back pain should only be offered as part of a randomised controlled trial ⁽⁵⁾ **[L1, RGB]**.
 - Disc replacement is not recommended ⁽⁵⁾ **[L1, RGC]**.
 - Post-Lumbar Surgery Syndrome (PLSS) is one of the most common causes of back pain after surgery ⁽³⁴⁾.

4 Background Information

4.1 Definition and Classification

Low back pain (LBP) is pain localised to the area below the costal margin and above the inferior gluteal folds ⁽²⁾, which may also extend into the back of the thigh area ⁽¹²⁾. LBP is frequently classified and managed based on:

- Symptom duration ^(10,28):
 - Acute LBP lasts <6 weeks.
 - Subacute LBP lasts 6-12 weeks. There is, however, inconsistency around the definitions of subacute LBP ⁽¹⁰⁾.
 - Chronic LBP lasts >12 weeks.
- Presence or absence of radiculopathy or sciatica ^(1,4,25,28):
 - Sciatic pain is radiating pain from the buttocks to the leg and is frequently associated with LBP ⁽²⁵⁾ due to disc degeneration, herniation, stenosis, and facet arthropathy,
 - There may also be associated neurological symptoms such as weakness, neurological claudication, paresthesia and dysesthesia in the lower limbs ⁽¹⁰⁾.
- Corresponding anatomical or radiographic abnormalities ^(12,28).

4.2 Epidemiology

LBP is common in the general adult population ^(16,18), with 50-80% of all adults experiencing LBP at some point in their lifetimes ^(16,35). LBP is considered the most common public health problem and the leading cause of sick leave and activity limitation ^(16,35).

The prevalence of LBP in Qatar has been previously estimated to be approximately 60% ^(36,37).

The global lifetime prevalence of LBP from different studies is approximately 40% ⁽¹¹⁾ and LBP more prevalent in high-income than in low-income countries ^(11,16,38).

Prevalence of LBP increases with age, with a peak rate observed at approximately 85 years of age ^(11,16).

LBP is also more prevalent among the general female adult population ⁽¹⁶⁾.

Non-specific LBP accounts for 90–95% of all cases of acute and chronic LBP ⁽¹⁶⁾. Chronic LBP develops in about 10-23% of cases ^(16,25,38).

4.3 Risk Factors

Modifiable and non-modifiable risk factors for LBP include ^(3,8,11,14,16,38):

- Older age.
- Female gender.
- Family history ⁽¹¹⁾.
- Anatomical deformity of the spine or lower limbs [**R-GDG**].
- Overweight and Obesity (body mass index $\geq 25\text{kg/m}^2$) ⁽¹⁶⁾.
- Occupational and ergonomic factors ⁽¹⁶⁾:
 - Sedentary lifestyle at home or work with prolonged sitting and standing.
 - Sustained positions i.e. prolonged bending.
 - Heavy lifting or lifting with poor technique, e.g. in nursing care ⁽¹¹⁾.
 - Forceful movements.
 - Vibration.
- Psychological factors ⁽²³⁾:
 - Distress ⁽¹¹⁾.
 - Depression.
 - Expectation that pain indicates bodily harm or injury ⁽¹¹⁾.

- Smoking ⁽¹⁶⁾.
- Pregnancy ⁽³⁵⁾.
- High energy sports and contact sports.

4.4 Prognosis

Many patients with acute LBP do not seek medical care ^(14,28). When discussing treatment options with patients who do seek medical care, consider that:

- Most patients with acute musculoskeletal LBP will experience spontaneous improvement within 6 weeks or less ⁽¹⁴⁾. Episodes of acute radicular LBP tend to be self-limiting. These episodes will typically resolve within 6-8 weeks without treatment ⁽³⁹⁾.
- Up to 30% of patients with LBP report persistent low back pain of at least moderate intensity one year after an acute episode. Twenty percent (20%) of patients with LBP experience substantial limitations in activity ^(14,28).

The following 'flags' are indicators of a poor outcome for LBP ^(1,2,4,11,14).

- Black flags ⁽²⁾:
 - Societal obstacles to recovery.
 - Employer policy preventing gradual reinstatement or change of position.
 - Criteria of the compensation system.
 - Duration of sick leave.
 - Financial insecurity.
 - Financial incentives.
 - Lack of contact with the workplace .
- Blue flags ⁽²⁾:
 - Negative workplace beliefs.
 - High physical workload.
 - High demand for work and low control over work.
 - Lack of ability to modify one's work.
 - Little hope of returning to work.
- Yellow flags ^(2, 14, 23):
 - Negative beliefs (e.g. beliefs that pain and activity are harmful).
 - Treatment preferences that do not fit with the best practice (e.g. preference of passive treatments)
 - Negative emotions.
 - Fear avoidance behaviour (e.g., significant worry about aggravating low back pain by engaging in normal activities) and other avoidance behaviour.
 - Lack of social/family support.
 - Stress.
 - Anxiety.
 - Depression.
 - Catastrophizing.
 - Passive or maladaptive coping strategies.
 - Job dissatisfaction.
 - Higher levels of disability.
 - Somatization.
 - Disputed compensation claims.
- Orange flags:
 - Psychiatric symptoms ⁽¹¹⁾.

5 Clinical Assessment

5.1 Clinical Presentation

Presenting features that may be associated with LBP include ^(1,14,40):

- Pain, may be:
 - Poorly localised in the lower lumbar region.
 - Deep ache, sharp, burning, or needle-like in nature.
 - Constant or intermittent.
 - May radiate to one or both legs.
 - Exacerbated by prolonged sitting, prolonged standing, movement, coughing or sneezing.
 - Associated with nausea or vomiting, if severe.
- Anomalies in posture.
- Pain on walking.
- Difficulty standing from a seated position.
- Difficulty ascending and descending stairs.
- Altered sensation, including hyperaesthesia, hypoesthesia or saddle anaesthesia.
- Muscle spasms, cramps or weakness in the lower back, pelvis, or legs.
- Bladder or bowel dysfunction.

5.2 History

A thorough history is required to assess the pain, identify red flags (see Section 5.4) and assist in formulation of the diagnosis.

Important points in the history to elicit from the patient and caregiver include ^(1,14):

- Location, duration, nature, and severity of the pain.
- Diurnal variation and presence of early morning stiffness.
- Precipitating factors (e.g. sitting, standing, and walking).
- Relieving factors (e.g. standing for a short period of time, lying supine or movement).
- Details of any previous back pain:
 - How current symptoms compare with previous back pain.
 - Therapies attempted.
 - History of failed previous treatments.
- Presence of neurological symptoms:
 - Walking distance (differentiate neurological causes from intermittent vascular claudication).
 - Reduced power.
 - Altered sensation.
- Presence of constitutional symptoms (e.g. unintentional weight loss, fever, night sweats).
- Symptoms of depression:
 - See MOPH National Clinical Guideline on the *Diagnosis and Management of Depression* ⁽⁴¹⁾.
- History of recent strenuous physical activity, significant trauma or fall.
- Past medical history (e.g. osteoporosis, tuberculosis, scoliosis, malignancy, etc.), surgical history (e.g. previous spine surgery) and traumatic spine and pelvis injuries
- Medication history (e.g. corticosteroids).
- Substance use disorder.
- Social or psychological distress (e.g. receiving or pursuing compensation for injury).
- Family history of LBP.

5.3 Physical Examination

Depending on the context, the physical examination of patients with LBP should include the following components ^(1, 5, 42):

- General examination, including:
 - Vital signs and temperature.

- Palpation of the abdomen to identify signs of intra-abdominal pathology.
- Examination for peripheral vascular disease (if supported by history).
- Examination of the back, hip and knees:
 - Inspection of active movement and posture.
 - Inspection and palpation of skin and soft tissue (e.g. wounds, herpetic lesions, tufts of hair in the sacral region).
 - Palpation and percussion of the spine.
 - Passive physiological and passive accessory intervertebral movement.
 - Evaluation for cauda equina compression⁽⁴³⁾:
 - Rectal tone.
 - Anal wink reflex.
 - Saddle anaesthesia.
 - Range of movement of the spine and lower limbs.
 - Lumbar and hip range of movement.
 - Straight leg raise is recommended to identify radiculopathy in L4 to S1⁽⁴⁴⁾.
 - Consider variations of this test, e.g. crossed straight-leg raising test for disc herniation.
 - Low back and abdominal muscle strength and endurance.
 - Femoral stretch test may be used to identify pathology in L2 to L3.
 - Patrick test (flexion, abduction, external rotation (FABER) test) may be used to screen for pathology in hip or sacroiliac joint.
 - Gaenslen test to detect sacroiliac pathology.
 - Thigh thrust test to detect sacroiliac pathology.
- Neurological examination:
 - For patients with suspected radiculopathy, a comprehensive neurological examination should be conducted in both lower limbs including^(9,43):
 - Muscle tone.
 - L2 to S1 for motor strength.
 - L2 to S4 for sensory assessment.
 - Reflexes including knee, ankle, plantar, and clonus.
- Examination of lymph nodes, breast, prostate.
- Examination for peripheral vascular disease.

NB: Consider requesting a psychological evaluation if the patient is suspected to be malingering [R-GDG].

5.4 Red Flags

Red flags are indicators for significant pathology that if present, require an urgent evaluation of the patient^(1,3,43,45):

- **Cauda equina compression**, indicated by:
 - Saddle anaesthesia.
 - Bowel/bladder disturbances.
 - Anal sphincter atonia.
 - Bilateral asymmetric lower limb sensory and/or motor deficits.
- **Severe neurologic involvement**, indicated by:
 - Progressive or severe neurologic deficits.
 - Multilevel or bilateral involvement.
 - Prominent motor weakness (e.g. foot drop or hip flexion weakness).
- **Malignancy**, indicated by^(43,46):
 - Prior history of malignancy (e.g. cancer, neoplasm).
 - Unexplained weight loss.
 - Night sweats or fever.
- **Spinal fracture**, indicated by:
 - Major or significant trauma.
 - Presence of a contusion or abrasion.
 - Sudden back pain with spinal tenderness.
 - Known osteoporosis.
 - Chronic corticosteroid use without bone protective supplementation.

- **Infection**, indicated by:
 - Fever (note that some infections do not always develop fever, e.g. epidural abscess⁽⁹⁾).
 - Spinal procedure within the last 12 months.
 - Presence of other infections (e.g. HIV).
 - Immunosuppression.
 - Intravenous drug use.
- **Abdominal aortic aneurysm**, indicated by⁽⁴⁷⁾:
 - Abnormal width of aortic or iliac arterial pulses.
 - Presence of a bruit in the central epigastric area upon auscultation.
 - Absence of palpable pulse.
 - Cystic kidney disease (although not urgent, still important to clear), indicated by^(45,46):
 - Positive fist percussion test over the kidney.

6 Investigations

Imaging and laboratory tests are not required for most patients to diagnose LBP⁽²⁻⁵⁾ **[L1, RGB]**.

Consider the following tests based on history and results of examination⁽⁶⁻⁹⁾:

- Complete blood cell count.
- Erythrocyte sedimentation rate.
- C-reactive protein.
- Blood cultures.
- Urinalysis.
- Ultrasound of bladder.
- Imaging depending on context:
 - Lumbar spine radiography may be indicated in certain patients but should not be used routinely for non-specific LBP **[R-GDG]**.
 - Computed tomography (CT).
 - Single photon emission CT.
 - CT myelography (as indicated by specialist team) **[R-GDG]**.
 - Magnetic resonance imaging (MRI).
 - Densitometry by DEXA scan.
- Electromyography.
- Nerve conduction velocities.
- Facet medial branch diagnostic block.
- Other disease-appropriate laboratory studies.
 - Serum uric acid.
 - Rheumatoid Factor (RF) Quantitative.
 - Cyclic Citrullinated Peptide (CCP).
 - Vitamin D, Serum calcium, magnesium.
 - HLA-B 27.

Further diagnostic tests should only be considered for the following patients^(4,5,11) **[L1, RGA]**:

- With red flags (see Section 5.4).
- Suspected of a specific disease or systemic disorder.
- Patient is being considered for invasive procedures (injections or surgery).
- Where the result of the investigations is likely to influence management.
- Persistent severe pain despite initial management.
- Pain lasting beyond expected duration (despite conservative management).

7 Differential Diagnosis of Low Back Pain

LBP is a symptom rather than a diagnosis and an underlying cause for the pain should always be sought [R-GDG]. The possible causes of LBP comprise a long list which can be attributed to conditions related to spinal tissues and other related conditions related to disorders outside spinal tissues.

7.1 Spinal Conditions Associated with LBP:

There are many spinal conditions can cause LBP and the most common diagnosis associated with LBP include ^(5,8,28,40):

- Muscular pain.
 - Lumbosacral muscle strains/sprains.
- Osteoarthritis of the lumbar spine.
- Spinal trauma:
 - Fracture.
 - Vertebral compression fracture.
- Disc herniation.
- Ankylosing spondylitis.
- Lumbar spondylolysis with or without spondylolisthesis.
- Spinal stenosis.
- Radiculitis (chronic).
- Malignancy:
 - Malignancy of the spinal tissues.
 - Metastatic spread from a primary tumour e.g. lung.
- Infection:
 - Vertebral osteomyelitis.
 - Discitis e.g. tuberculosis.
 - Septic sacroilitis.
 - Epidural abscess.
 - Paraspinal muscle abscess.
- Lumbar instability.
- Sacroiliac joint disease.
- Post lumbar surgery syndrome.

7.2. Other Disorders (Non-Spinal Conditions):

Many disorders that are not directly related to the spinal structures, may present with LBP. These may include, but are not limited to ⁽¹¹⁾:

- Biliary colic.
- Pneumonia.
- Aortic aneurysms.
- Cholecystitis.
- Pancreatitis.
- Urolithiasis.
- Prostatitis
- Obstructive or infectious renal disease.
- Inflammatory bowel disease
- Rheumatoid arthritis
- Renal tumours.
- Endometriosis.
- Ovarian cysts.
- Perinephric abscesses.
- Psychologic distress.
- Depression and other psycho-cognitive disorders.

8 Primary Care Management

8.1 Education, Self-Care Advice and Preventative Measures

Education may be effective for the management of LBP ^(2,10,11,13,14) and is the main management for patients with LBP together with exercise, as well as for secondary prevention [**L2, RGB**]. Prevention is important in managing LBP since recurrences are very common, with estimates suggesting that up to 70% of individuals will experience at least one recurrence of LBP, within a 12-month period ⁽⁴⁸⁾ [**L2, RGA**].

All patients with LBP should receive [**L1**]:

- Information on the nature, aetiology, prognosis, reoccurrence rate, course of LBP from sources such as:
 - The patient information leaflet developed by the MOPH on Low Back Pain; or
 - *Low Back Pain by the Arthritis Research Society* of the UK.
- Self-care advice ^(2,3,10,13,14):
 - Encouragement to continue normal physical activity within pain tolerance.
 - Encourage minimizing bed rest.
 - Advise against medical aids, orthotics, and appliances ⁽¹³⁾
- Promote a return to work, wherever possible ⁽²⁾.
- Patients should be instructed to avoid opioids unless indicated and prescribed by a specialist for acute and severe pain only that is unresponsive to more conservative medications ⁽¹⁴⁾.
- Education that is patient-centred and fosters a positive mind-set, and coaching people to optimise their physical and mental health (such as engaging in physical activity and exercise, social activities, healthy sleep habits and body weight, and remaining in employment) ⁽⁴⁹⁾ [**L1, RGA**].

Exercise alone and exercise combined with education can prevent episodes of LBP and LBP-related absenteeism ⁽⁵⁰⁾ [**L1, RGB**]. “Other interventions, including education alone, back belts, and shoe insoles, do not appear to prevent LBP. Whether education, training, or ergonomic adjustments prevent sick leave is uncertain because the quality of evidence is low.” ⁽⁵¹⁾ [**L1, RGA**].

By prescribing exercise to patients the overall risk in developing NCD's, including musculoskeletal diseases such as LBP, can be reduced. [**L2, RGA**]. Exercise prescription is a suitable primary prevention method for all age groups. In primary prevention, patient education and exercise prescription might be indicated in patients with low physical activity levels. WHO recommends that “all adult patients should have their physical activity levels assessed and monitored regularly and systematically” for disease prevention and management ^(52, 53) [**L2, RGA**].

8.2 Workplace Intervention

Risk factors for occupational back pain include ^(2,4,10,16,17):

- Heavy lifting.
- Repetitive work.
- Static posture.
- Frequent bending and twisting.
- Driving or prolonged sitting.
- Exposure to vibration of the whole body.
- Psychological aspects (e.g. monotonous work, job dissatisfaction, pressure of time).

Workplace modification programmes aimed at risk or task modifications have no evidence of a preventive effect for LBP ^(24, 10,15,17,29) [**L1, RGB**]. Assistive devices and other technologies (see Section 8.3.4) also have no evidence of a preventive effect ^(2,4,10,16,17) [**L1, RGB**].

Regarding workplace interventions, exercise has a documented positive benefit in patients with LBP and can be applied in the workplace with the potential to prevent LBP ⁽¹⁷⁾ [**L1, RGA**]. Additionally, work accommodations, such as modified return to work, and communication with the workplace has been found to be effective in preventing chronic LBP ⁽¹¹⁾.

8.3 Non-Pharmacological Treatments

Non-pharmacological treatments should be considered first-line treatment in both acute and chronic LBP ^(3,10) **[L1]**.

8.3.1 Exercise and Physiotherapy

Therapists may use specific trunk muscle activations for patients with acute and subacute LBP with and without leg pain ⁽¹⁰⁾ . Consider exercise therapy for patients with chronic LBP ⁽¹⁰⁾ **[L1, RGA]**. When choosing the type of exercise, review patient's preferences, capabilities, and specific needs.

Focus on ^(5,10):

- Trunk mobility exercises.
- Muscles strengthening and endurance exercises **[L1, RGA]**.
- Trunk muscle activation exercises.
- Aquatic exercises.
- Aerobic exercise.
- Motor control exercises.
- Multimodal exercise interventions.

8.3.2 Manual Therapy

Manual therapy may be offered as adjuvant treatment for managing acute, subacute or chronic LBP with or without sciatica ^(5,10) **[L1, RGB]**. Consider the following approaches after proper evaluation including adequate investigations if indicated:

- Lower quarter nerve mobilization for patients with subacute and chronic LBP with sciatica **[L1, RGB]** ⁽¹⁰⁾.
- Thrust and non-thrust mobilization for patients with acute, subacute and chronic **[L1, RGA]** ⁽¹⁰⁾.
- Soft tissue mobilization or massage for short term pain relief in patients with acute and chronic LBP **[L1, RGB]** ⁽¹⁰⁾.

Manual therapy is not recommended in patients with severe osteoporosis or severe degenerative changes **[L1,RGB]** ⁽¹⁰⁾.

- Manual therapy should only be prescribed following subjective and objective screening of patients to ensure safe and effective manual therapy intervention ⁽⁵⁾.
- Traction is not recommended for neither acute, subacute or chronic LBP ⁽⁵⁾.

8.3.3 Acupuncture and Dry Needling

Acupuncture

Acupuncture is not recommended for the management of LBP due to insufficient evidence of benefit **[L1, RGB]**, but may be considered for short-term pain relief ^(18, 19).

Dry Needling

- Dry needling could be recommended, when combined with other therapies, to reduce LBP pain intensity post-intervention and in the short-term ⁽²⁰⁾.
- There is no evidence that suggests improvement in disability at post-immediate or at short-term follow up whether used alone or in conjunction with other interventions ⁽²⁰⁾.
- Dry needling could be considered in cases erector spinae muscle stiffness, as it has been proven to effectively reduce stiffness ⁽²¹⁾ .
- Dry needling may improve pain and functional balance, when administered in painful areas and when all the muscle groups are targeted ⁽²²⁾.

8.3.4 Assistive Devices

The following assistive aids and devices are not recommended for managing LBP ^(2,10,12-14) **[L1, RGB]**, unless indicated by specialist under certain circumstances i.e. fracture with instability, infections, etc. **[R-GDG]**:

- Belts or corsets ^(11, 51) .
- Braces.
- Lumbar supports.
- Insoles and foot orthotics ^(11, 51) .
- Traction devices.

8.3.5 Other Treatments

The following approaches have insufficient evidence to justify their routine use in managing LBP^(5,10,25,28) **[L1, RGB]**, but may be considered in refractory cases, as long as there is no evidence of causing harm⁽¹⁰⁾:

- Percutaneous electrical nerve simulation (PENS).
- Transcutaneous electrical nerve simulation (TENS).
- Interferential therapy.
- Therapeutic ultrasound.
- Short-wave diathermy.
- Laser therapy.
- Magnetic field therapy.
- Kinesiotaping.

8.4 Psychological Assessment and Interventions

Early identification of psychosocial risk factors (i.e. yellow flags) is recommended to assess the risk of persistent pain and/or disability and to establish risk-based management. Some elements (fears and beliefs, psychological and social contexts) need to be early assessed⁽²⁾.

Using screening tools are recommended to assess psychosocial factors associated with LBP. Examples of these screening tools for patients with LBP are⁽²³⁾:

- *Central Sensitizing Inventory (CSI)*.
- *STarT Back Screening Tool*.
- *Pain catastrophizing scale (PCS)*.
- *Pain Self-Efficacy Questionnaire (PSEQ)*.

Psychological therapies should aim at restructuring the negative cognition, improving pain acceptance, and reducing psychological symptoms such as⁽²³⁾:

- Fear-avoidance behaviour.
- Low mood.
- Withdrawal.
- Expectation of passive treatment.
- Feeling of injustice.
- Negative pain beliefs (e.g. catastrophising).

Psychological therapies should not be offered alone. They are recommended only as part of a multimodal therapy along with physical interventions^(14,23) **[L1, RGA]**. Consider the following techniques^(2,12,14,23):

- Patient-clinician relationship and clinician's attitude, particularly rapport building⁽²³⁾.
- Re-assurance⁽²³⁾.
- Encouragement of self-management (including self-efficacy belief, goal-setting, and pacing⁽²³⁾).
- Cognitive behavioural therapies^(2,12,14,23).
- Progressive muscle relaxation^(2,14).
- Biofeedback⁽¹⁴⁾.
- Acceptance and commitment therapy⁽²³⁾.
- Mindfulness^(2,23).
- Meditation⁽²⁾.

8.5 Pharmacological Treatment in Primary Care

Pharmacological therapy may be recommended initially in conjunction with non-pharmacological treatments **[R-GDG]** or may be recommended if non-pharmacological treatments are ineffective or insufficient for acute LBP management^(11,24,25). A medical history of the characteristics of pain is required to guide treatment prescription. Outcome measures, such as the visual analogue scale (VAS) or numeric rating system (NRS) should be used to monitor pain intensity and therapy efficacy⁽²⁶⁾. Laboratory tests may be required depending on molecules used, but not every patient would need blood test to start and monitor short-term therapy unless background justifies⁽²³⁾.

Consider the following medications for managing LBP^(11,24,25):

- Oral non-steroidal anti-inflammatory drugs (NSAIDs) [L1, RGA].
- Paracetamol for acute and chronic LBP [L1, RGB].
- Skeletal muscle relaxants for acute LBP [L1, RGA].

Oral NSAIDs can be used for pain management in patients with either acute and chronic LBP⁽²⁴⁾ [L1]. They should however be prescribed at the lowest effective dose for the shortest possible period of time [L1, RGA]. Before prescribing NSAIDs, the following aspects should be assessed and a plan for monitoring the patient, implemented^(11,24,25):

- Gastrointestinal conditions - Gastroprotective treatment should be implemented if required.
- Liver and cardio-renal toxicity.
- Patient's risk factors (e.g. age).
- Patient preferences.

NB: Opioids are not recommended for pain management in patients with chronic LBP^(24,25) [L1, RGC].

Weak opioids may be offered for managing acute LBP only if^(24,26) [L1, RGA]:

- NSAIDs are contraindicated.
- NSAIDs are not tolerated.
- NSAIDs provide insufficient pain management (consider referral to a specialist).
- Risks and benefits were discussed with the patient.
- Potential benefits outweigh the risks.
- Should be cautiously limited and restricted to short duration or avoided whenever trend to addiction is suspected.

Skeletal muscle relaxants may be considered in certain cases, for short-term pain relief in patients with acute LBP⁽²⁴⁾ [L1, RGB]. Adverse effects, especially sedation and addictive potential, should be reviewed before prescribing^(24,28).

Consider prescribing one of the following skeletal muscle relaxants⁽¹²⁾:

- Tizanidine.
- Baclofen.
- Benzodiazepines (e.g. diazepam or tetrazepam):
 - Benzodiazepines have significant addictive potential and should be prescribed in low doses for no longer than one week at a time to prevent dependency [R-GDG].

The following medications are not recommended for managing LBP^(24,26,54) [L1, RGB]:

- Systemic steroids.
- Lidocaine patches.
- Benzodiazepines.
- Anticonvulsants.
- Antibiotics.

9 Referral Criteria to Specialist Care

Referral to a specialist is recommended for the following^(1,5,27) reasons:

- If specific pathology of the spine, soft tissues or viscera is suspected.
- If radicular pain or pathology is suspected.
- If patients present with any somatic warning signs or red flags (see Section 5.4).
- If patients fail to improve after 4 weeks of physiotherapy.
- If patients require any of the following:
 - Imaging studies.
 - Pharmacotherapy for longer than 4 weeks.
 - Pain management with opioids, antidepressants or anticonvulsants.
 - Management of comorbidities or psychosocial support.
 - Surgical or interventional treatments.

10 Specialist Management

10.1 Multidisciplinary Team Management

A multidisciplinary assessment may be required in ^(2,3,13,28) **[L1, RGA]**:

- Patients at medium-risk or high-risk of a poor outcome ⁽²⁾.
- Patients with chronic back pain ^(1,2,14,23).

The Multidisciplinary Team (MDT) should include professionals from the following disciplines ^(11,14):

- Pain Specialist.
- Nurse practitioner in Pain Management.
- Spinal surgeon.
- Neurologist.
- Physiotherapist.
- Psychologist.
- Dietitian.

Consultation with, or referral to, an appropriate specialist is required if management of comorbidities, mental health concerns, or significant functional deficits, is necessary ^(3,14) **[L1, RGA]**.

10.2 Specialist Pharmacological Treatment

In addition to the medication described in Section 8.5, that may be prescribed in a primary care setting, medication that may be considered in a specialist setting, include:

- **Opioids:**
 - Opioids are not recommended for pain management in patients with chronic LBP ⁽¹¹⁾ **[L1, RGC]** but can be prescribed in a specialist setting under the supervision of a pain specialist **[R-GDG]**.
- **Antidepressants:**
 - May be considered for use, under specialist supervision, in certain cases to treat neuropathic pain (also known as ‘radiculagia’) ⁽²⁹⁾ **[L1, RGB]**.
 - **Options include:**
 - Serotonin–norepinephrine reuptake inhibitors (SNRIs).
 - Selective serotonin reuptake inhibitors (SSRIs).
 - Tricyclic antidepressants.
- **Anticonvulsants:**
 - Anticonvulsants are generally not recommended for LBP treatment with/without radicular pain (sciatica), and should only be considered under the care of the specialist ^(24,55) **[L1, RGA]**.

10.3 Spinal Interventional Therapies

Spinal interventional therapies such as spinal injections and radiofrequency modulation or denervation therapies, should only be performed by appropriately trained and privileged specialist physicians after due diagnostic evaluation **[R-GDG]**.

Spinal injections may be considered in patients with radiculopathy ^(1,5,14) **[L1]** and/or spinal stenosis ^(1,5,14) **[L2]**, and/or facet joint pain and/or sacroiliac joint related pain **[R-GDG]**.

In caudal stenosis with deficits, careful evaluation is required if caudal epidural injections are considered and Percutaneous Nucleoplasty and Annuloplasty (e.g. Bicuoplasty) could be considered by a qualified practitioner **[R-GDG]**.

The following injection therapies may be considered by a specialist after evaluation of the patient to determine the appropriate treatment, according to patient-specific factors and the risk/benefit profile of the intervention:

- Corticosteroids Corticosteroid spinal injections (such as in peri-neural; epidural; facets joints, sacroiliac joint) ⁽³⁰⁾, preferring non-particulate steroid products over particulate one ^(56,57).
- Local anaesthetics ⁽³⁰⁾.
- Anti-tumour necrosis factor agents (limited evidence, consider with caution) ⁽²⁹⁾
- Botulinum toxin A usually for superficial paraspinal muscles ⁽⁹⁾.

The use of radiofrequency denervation may be considered in patients with moderate to severe chronic LBP if other non-surgical interventions are ineffective after a positive response to a diagnostic medial branch block ⁽⁵⁾ **[L1, RGB]**.

Spinal cord stimulation (SCS) is indicated in patients failing to respond to conservative and other interventional therapies after thorough evaluation by expert practitioners; such as in refractory PLSS or intractable “back and leg syndrome”. SCS is no way a treatment for “non-specific” LBP ⁽³³⁾ **[L1, RGB]**.

Intrathecal pump (ITP) implants are also an option provided through expert assessment and multidisciplinary team (MDT) evaluation has been done. Such implants require an organized team lead by expert practitioner. ITP is no way a treatment for “non-specific” LBP ⁽³⁴⁾ **[L1, RGB]**.

10.4 Spinal Surgery

Spinal decompression is indicated as an emergency for patients with acute cauda equina syndrome and/or motor deficits ^(9,32) **[L2, RGA]**. For all other patients, spinal surgery should be reserved as the last-choice treatment option and is not recommended for patients with non-specific low back pain ⁽¹⁾ **[L1, RGB]**.

Spinal surgery must be considered carefully in the following patients and only if they fail to respond to non-surgical treatments ⁽⁵⁾:

- Radiculopathy ⁽⁹⁾ **[L2, RGA]**:
 - With rapidly progressive or severe neurologic deficits.
 - With milder deficits associated with a structural lesion or active denervation.
- Spinal stenosis ⁽³³⁾ **[L2, RGB]**.
- Slipped or herniated discs ⁽¹⁾ **[L2]**.
- Spinal deformity ⁽³³⁾ **[L2]**.
- Spinal tumours and metastatic spinal cord compression ⁽³³⁾ **[L2]**.
- Spinal injury (e.g. fracture) ⁽³³⁾ **[L2]**.
- Spinal instabilities, spondylolisthesis, spondylolysis and neurological claudication **[R-GDG]**.

- NB:**
- Spinal fusion for non-specific low back pain should only be offered as part of a randomised controlled trial ⁽⁵⁾ **[L1, RGB]**.
 - Disc replacement is not recommended ⁽⁵⁾ **[L1, RGC]**.

10.4.1 Post Lumbar Surgery Syndrome

Post Lumbar Surgery Syndrome (PLSS) is one of the most common causes of back pain after surgery ⁽³⁴⁾.

Recurrent or continuing symptoms in PLSS, may be caused by ^(58,59):

- Degeneration of the spine.
- Extensive epidural scars (epidural fibrosis).
- New or recurrent spinal pathology.
- Formation of new bone.
- Thickened ligaments.
- Muscular hypertrophy/atrophy.
- Psychosocial factors.

Treatment options for PLSS include ⁽⁵⁸⁾ **[L1]**:

- Specialist pharmacotherapy ⁽⁵⁸⁾ **[L1]**.
- Exercise, physiotherapy, and behavioural rehabilitation ⁽¹⁰⁾ **[L1, RGB]**.
- Interventional procedures (e.g. peri-neural release or epidural adhesiolysis) ⁽⁶⁰⁾ **[L1, RGB]**.
- Neuromodulation and implantable technologies (e.g. spinal cord stimulation and intrathecal drug delivery systems ^(58,61) **[L1]**.
- Surgical revision and reoperation.
 - Surgical revision should be avoided and considered a last resort due to the associated high morbidity, and low rates of success ^(58,61) **[L1, RGB]**.

10.5 Follow-Up

Periodic clinical visits should be carried out for ^(10,12,25) [L1, RGA]:

- Reevaluation of the patient.
- Monitoring concordance with self-management strategies.
- Discouraging dependence on passive treatment.
- Evaluation and documentation of side effects of pharmacotherapy.

If LBP resolves with non-surgical treatment, follow-up may be on an as-needed basis ⁽¹⁰⁾ [L2].

After surgery, follow-up depends on the type of procedure ⁽²⁾ [L2]. Note that:

- Comorbid conditions should be assessed.
- Postoperative physiotherapy may be required.
- PLSS should be assessed (if present) (see Section 10.4.1).

11 Key Considerations for Patient Preferences

Patient preferences refer to patient perspectives, beliefs, expectations, and goals for health and life, and to the steps employed by individuals in assessing the potential benefits, harms, costs, and limitations of the management options in relation to one another. Patients may have preferences when it comes to defining their problems, identifying the range of management options, and selecting or ranking the outcomes used to compare these options.

It is important for healthcare professionals to develop an understanding of the patient as an individual and the unique way in which each person experiences a condition and its impact on their life.

The following recommendations are therefore suggested for physicians and other healthcare professionals regarding general principles of patient care in Qatar:

- **Respect Patients:** Treat patients with respect, kindness, dignity, courtesy and honesty regardless the patient dresses or appears. Ensure that the environment is conducive to discussion and that the patient's privacy is respected, particularly when discussing sensitive, personal issues. Ask the patient how they wish to be addressed and ensure that their choice is respected and used.
- **Maintain Confidentiality:** Respect the patient's right to confidentiality and avoid disclosing or sharing patients' information without their informed consent. In this context, students and anyone not directly involved in the delivery of care should first be introduced to the patient before starting consultations or meetings, and let the patient decide if they want them to stay.
- **Clarify Third-Party Involvement:** Clarify with the patient at the first point of contact whether and how they like their partner, family members or carers to be involved in key decisions about their care or management and review this regularly. If the patient agrees, share information with their partner, family members or carers.
- **Obtain Informed Consent:** Obtain and document informed consent from patients, in accordance with MOPH policy and guidance.
- **Encourage Shared Decision Making:** Ensure that patients are involved in decision making about their own care, or their dependent's care, and that factors that could impact the patient's participation in their own consultation and care including physical or learning disabilities, sight, speech or hearing impairments and problems with understanding, reading or speaking English are addressed.
- **Disclose Medical Errors:** Disclose errors when they occur and show empathy to patients.
- **Ensure Effective Communication:** Explore ways to improve communication including using pictures, symbols or involving an interpreter or family members. Avoid using medical jargon. Use words the patient will understand and confirm understanding by asking questions.
- **Ensure Continuity of Care:** Provide clear and timely sharing of patient information between healthcare professionals especially at the point of any transitions in care.

12 Performance Measures

A list of potential performance measures is given below in *Table 12.1*.

Number	Numerator	Denominator
LBP01	The number in the denominator who are provided with advice and information to self-manage their condition.	The number of adult patients who are diagnosed with LBP in the last 12 months.
LBP02	The number in the denominator who are referred for specialist assessment.	The number of adult patients who are diagnosed with LBP in the last 12 months.
LBP03	The number in the denominator who undergo spinal surgery.	The number of adult patients who are diagnosed with LBP in the last 12 months.

Table 12.1: Performance Measures.

13 References

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Appendix: Detailed Description of the Literature Search

A systematic search for existing literature on the low back pain was performed in the period March 12th –April 15th, 2019. An updated search of the guideline literature was conducted in May 2023 for more recent evidence.

The search for clinical practice guidelines on low back pain diagnosis and/or management was performed in the PubMed database and websites of relevant organisations and societies including the *American Society of Interventional Pain Physicians (ASIPP)*, *American College of Physicians*, *Canadian Chiropractic Guideline Initiative*, *The American Association of Neurological Surgeons (AANS)* and other. The present guideline is primarily based on UK NICE, German Disease Management, and Canadian Chiropractic Initiative guidelines and is supplemented with other relevant studies.

In the initial search, peer-reviewed scientific publications were found in PubMed and via Google Scholar Internet search engine. Non-peer reviewed studies were also identified in *bioRxiv* and books were checked on PubMed. Information published on medical websites and drug prescribing information sheets were found via Google search engine. For the updated search however, non-peer reviewed studies and books in *bioRxiv* were not searched or included. Books were checked on PubMed, but inclusion was limited, and only when necessary. Information published on medical websites and drug prescribing information sheets from Google/Google Scholar searches were also not included as this is not possible to reproduce.

The included publications were identified using the term “low back pain” and specified with the following terms in combinations:

Management, radiculopathy, chronic/acute, causes, risk factors, depression, aetiology, epidemiology, prognosis, presentation, symptoms, examination, imaging, flags, differential diagnosis, self-management, meditation, workplace/work, exercise, physical activity, acupuncture, massage, physiotherapy, manual therapy, psychological, cognitive behavioural therapy, screening, pharmacological treatment/pharmacotherapy, opioids, paracetamol, acetaminophen, muscle relaxants, primary/secondary care, referral criteria, multidisciplinary, spinal surgery/injection, corticosteroids, anaesthetics, regenerative therapy, radiofrequency denervation, laminectomy/laminotomy/foraminotomy/laminoplasty/discectomy, spinal fusion, failed back surgery syndrome, epidural scars, recovery, follow-up. Combinations of the same key terms were used in the updated search.

For the update, a search in PubMed and on Guideline clearing houses was conducted for latest information updates.

Modifications to the search strategy were necessary. PubMed was searched, as well as clinical guideline clearinghouses, WHO website, AANS, AHRQ and NICE. Limitations were set for the following date (publications from 2018-May 2023), type of publications (systematic reviews with or without meta-analyses, RCTs, clinical practice guidelines, books), full text articles only (due to time constraints on updating period). The literature was searched and included as described in the below mentioned diagram fig A.1:

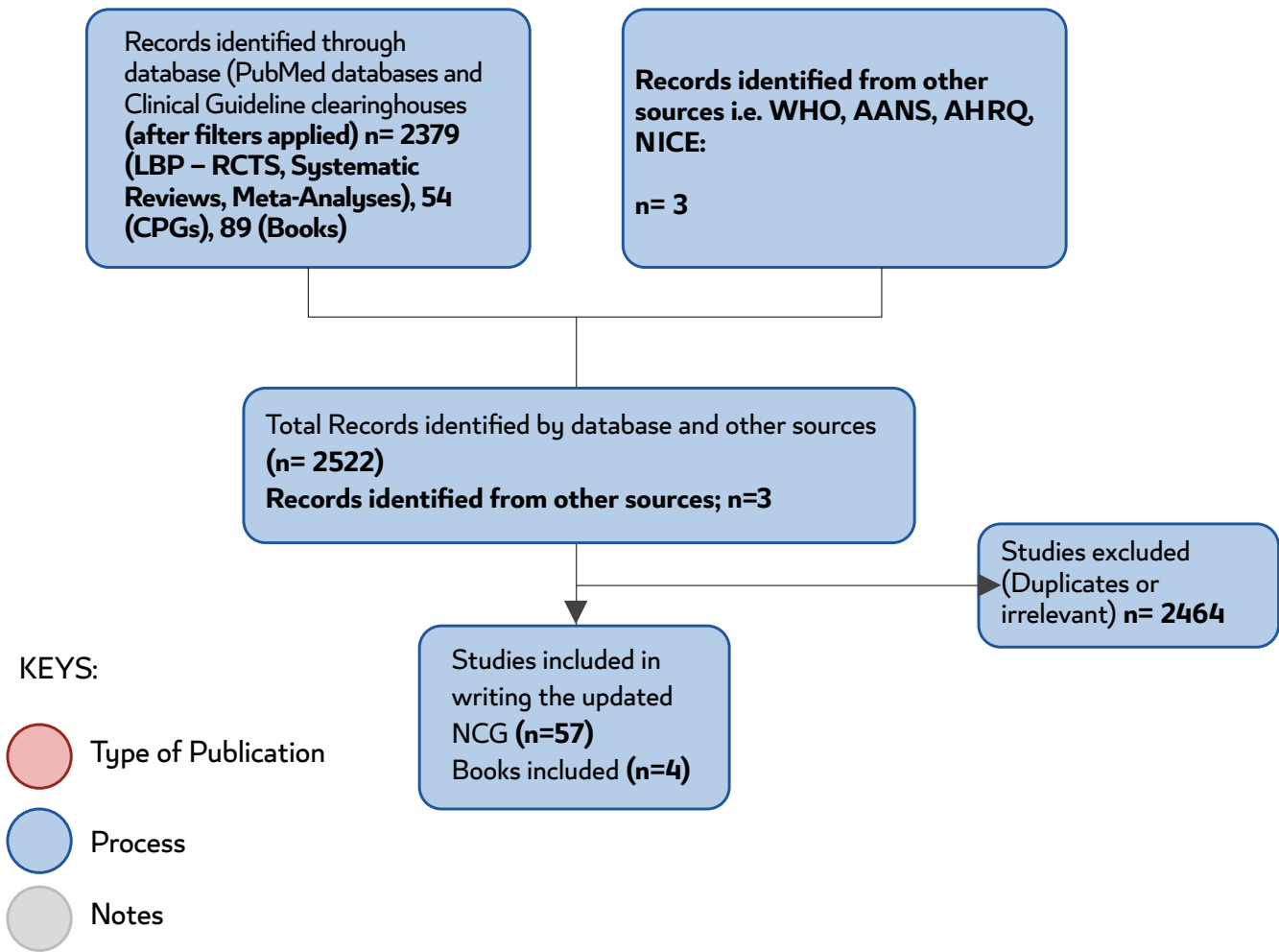


Fig A.1: Flow diagram related to Literature search results for NCG update (2023).

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وزارة الصحة العامة في دولة قطر 2020.

جميع حقوق الطبع محفوظة وهذا يشمل كلاً من الوسائط الإلكترونية والمطبوعة من هذه الوثيقة كذلك الأعمال المشتقة بجميع اللغات وفي جميع وسائط التعبير المعروفة الآن أو التي تم تطويرها في وقت لاحق.

تتيح وزارة الصحة العامة المبادئ الإرشادية السريرية الوطنية وما ينتج عنها من وثائق ومشتقات للاستخدام الشخصي والتعليمي فقط. ولا تجوز وزارة الصحة العامة استخدام هذا المحتوى تجارياً، حيث لا يجوز بأي حال من الأحوال استخدام المحتوى للترويج لأي شركة تجارية أو منتجات أو خدمات طرف ثالث.

لا يجوز ترجمة أو نسخ أي من المبادئ الإرشادية، أو المسارات الخاصة بها أو نشرات معلومات المرضى سواء بشكل كامل أو جزء منها بأي شكل من الأشكال دون الحصول على إذن خطي من وزارة الصحة العامة.

للحصول على هذا الإذن يرجى التواصل عن طريق البريد الإلكتروني: ClinicalGuidelines@moph.gov.qa للاستفادة من آخر التحديثات والمصادر الإضافية للمعلومات، توصي وزارة الصحة العامة استخدام الرابط الإلكتروني إلى وثيقة المبدأ الإرشادي ذو الصلة.

تسمح وزارة الصحة العامة بتوزيع المبادئ الإرشادية السريرية الوطنية أو نشرات معلومات المرضى ذات الصلة، على أن يتضمن ذلك إشعار حقوق الطبع والنشر أعلاه والاقتباس المناسب.

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