NATIONAL CLINICAL GUIDELINES

THE MANAGEMENT OF LOW BACK PAIN IN ADULTS

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المبادئ الإرشادية السريرية لدولة قطر
NATIONAL CLINICAL GUIDELINES FOR QATAR

وزارة الصحـــــة العامـــــة
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Abbreviations

The abbreviations used in this guideline are as follows:

CT	Computed Tomography
DEXA	Dual-energy X-ray absorptiometry scan
FABER	Flexion, Abduction, External Rotation Test
MDT	Multidisciplinary Team
MRI	Magnetic Resonance Imaging
NSAIDs	Non-Steroidal Anti-Inflammatory Drugs
PENS	Percutaneous Electrical Nerve Simulation
PLSS	Post Lumbar Surgery Syndrome
SNRIs	Serotonin–Norepinephrine Reuptake Inhibitors
SSRIs	Selective Serotonin Reuptake Inhibitors
TENS	Transcutaneous Electrical Nerve Simulation

View Pathway

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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, investigation, diagnosis, treatment, and referral of patients presenting to provider organisations in Qatar. It is intended that the guideline will be used by healthcare professionals in both primary care and specialist settings.

1.2 Scope of the Guideline

This guideline covers the following aspects of care:

- Clinical presentation, assessment, investigation, 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 practice 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 sponsored the development of the guideline, the MOPH has not influenced the specific recommendations made within it.

1.4 Sources of Evidence

The professional literature published in the English language has been systematically queried using specially developed, customised, and tested search strings. Search strategies are developed to allow 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 each guideline, all retrieved publications have been individually reviewed by a clinical editor 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 following evidence hierarchy 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):**
  - Meta-analyses.
  - Randomised controlled trials with meta-analysis.
  - Randomised controlled trials.
  - Systematic reviews.

- **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 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 best 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 Clinical Governance Group. The GDG members have reviewed and provided feedback on the draft guideline relating to the topic. Each member has completed a declaration of conflicts of interest, which has been reviewed and retained by the MOPH.

Guideline Development Group Members		
Name	**Title**	**Organisation**
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Dr Muhammad Atif Waheed	Consultant Family Medicine	Primary Health Care Corp

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- Strategic Planning & Performance Department	Ministry of Public Health
Shk Dr Mohammed Hamad J. Al Thani	Co-Chair of NCGPC, Director of Public Health	Ministry of Public Health
Prof Anthony Akobeng	Chair Clinical Practice Guidelines Committee	Sidra Medicine
Dr Alshaymaa Mohammed A. M. Al-Motawa	Consultant Family Medicine	Qatar Petroleum
Dr Basil Bashqawi	Accreditation Coordinator, Dept of Health Professions	Ministry of Public Health
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Dr Dahlia Mustafa Hassan	Consultant Family Medicine	Primary Health Care Corp
Dr Ghassan Youseph Hommos	Consultant Endocrinology	Al Emadi Hospital
Dr Egon Toft	VP and Dean	College of Medicine, Qatar University

1.8 Responsibilities of Healthcare Professionals

This guideline has been issued by the MOPH to define how 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.

The guidance does not override individual professional responsibility to take decisions which are appropriate to the circumstances of the patient concerned. Such decisions should be made in consultation with the patient, their guardians, or carers 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.

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 [1–4]:
  - Cauda equina compression.
  - Severe neurologic involvement.
  - Malignancy.
  - Spinal fracture.
  - Infection.

Investigation (*Section 6*):

- Imaging and laboratory tests are not required for most patients to diagnose LBP[2,3,5] [**L1, RGB**].
- Consider the following tests based on history and results of examination[2,4,6,7]:
  - 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.
  - Magnetic resonance imaging (MRI).
  - Densitometry by DEXA scan.
- Electromyography.
- Nerve conduction velocities.
- Facet medial branch diagnostic block.
- Other disease-appropriate laboratory studies.

Primary Care Management (*Section 8*):

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

Education and Self-Care Advice (*Section 8.1*):

- Exercise with education may be effective for the management of LBP [8] [**L2, RGB**]. All patients should receive[5,8] [**L1**]:
  - Information on the nature of LBP.
  - Self-care advice[2,3].
  - Promote a return to work, wherever possible.

Workplace Intervention (*Section 8.2*):

- Of all the workplace interventions, only exercise has a documented positive benefit in patients with LBP and can be applied in the workplace with the potential to prevent LBP[9,10][**L1, RGA**].

Exercise and Physiotherapy (*Section 8.3.1*):

- Exercise therapy for patients with acute and subacute LBP is not recommended, due to insufficient evidence[1,11] [**L1, RGB**].
- Consider exercise therapy for patients with chronic LBP[1–5,11] [**L1, RGA**].

Manual Therapy (*Section 8.3.2*):

- Manual therapy may be offered as adjuvant treatment for managing acute, subacute or chronic LBP with or without sciatica[1,2,4,5,11,12] [**L1, RGB**].
- Manual therapy is not recommended in patients with severe osteoporosis or severe degenerative changes [**R-GDG**].
- Acupuncture:
    - Acupuncture is not recommended for the management of LBP due to insufficient evidence of benefit[1,5][**L1, RGB**], but may be considered in refractory cases[2,11,12].

Psychological Interventions (*Section 8.4)*:

- Using screening tools (e.g. *Örebro Musculoskeletal Pain Questionnaire* or *Central Sensitizing Inventory*) are recommended to assess psychosocial factors associated with LBP[13].
- Psychological therapies should not be offered alone. They are recommended only as part of a multimodal therapy along with physical interventions[3,5,13,14] [**L1, RGA**]. Consider the following techniques[3–5,12,15]:
    - Cognitive behavioural therapies.
    - Progressive muscle relaxation.
    - Biofeedback.
    - Acceptance and commitment therapy.
    - Mindfulness.
    - Meditation.

Pharmacological Treatment in Primary Care (*Section 8.5*):

- Pharmacological therapy should only be implemented when non-pharmacological treatments are ineffective, or insufficient, for pain management[8].
- Consider the following medications for managing LBP[1,3–5,8,12] [**L1, RGA**]:
    - Oral non-steroidal anti-inflammatory drugs (NSAIDs).
    - Weak opioids (e.g. tramadol) with or without paracetamol.
    - Paracetamol.
    - Skeletal muscle relaxants.
- Opioids are not recommended for pain management in patients with chronic LBP[5] [**L1, RGC**].
- Weak opioids may be offered for managing acute LBP only if[1,3,5,8] [**L1, RGA**]:
    - NSAIDs are contraindicated.
    - 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 [1–3,5,12]:
    - Suspected specific pathology of the spine, soft tissues or viscera.
    - Suspected radicular pain or pathology.
    - Patients presenting with any somatic warning signs or red flags (see *Section 5.4*).
    - Patients who fail to improve after 4 weeks of physiotherapy.
    - Patients who 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[3,11] [**L1,RGA**]
  - Patients at medium-risk or high-risk of a poor outcome[8].
  - Patients with chronic back pain[2,12].

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[5] [**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[2–4,9,24] [**L1, RGB**].
  - **Anticonvulsants:**
    - For LBP associated with radicular pain (sciatica), anticonvulsants may be considered under specialist supervision, as per neuropathic pain guidelines [**R-GDG**].

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[5,7,16] [**L1**] and/or spinal stenosis[7,16] [**L2**].
- 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[2]:
  - Corticosteroids[7,16,17].
  - Local anaesthetics[16].
  - Anti-tumour necrosis factor agents[16].
  - Platelet-rich plasma[17].
  - Mesenchymal stem cells[17].
  - Botulinum toxin A[2].
- The use of radiofrequency denervation may be considered in patients with moderate to severe chronic LBP if other non-surgical interventions are ineffective [1,5] [**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[2] [**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[8,12] [**L1, RGB**].

- Spinal surgery must be considered carefully in the following patients and only if they fail to respond to non-surgical treatments[5,6]:
    - Radiculopathy[2] [**L2, RGA**].
    - Spinal stenosis[2,18] [**L2, RGB**].
    - Slipped or herniated discs [19] [**L2**].
    - Spinal deformity [18] [**L2**].
    - Spinal tumours and metastatic spinal cord compression [18] [**L2**].
    - Spinal injury (e.g. fracture)[18] [**L2**].
- Spinal fusion for non-specific back pain should only be offered as part of a randomised controlled trial[5,20] [**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[7,21].

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[8]. LBP is frequently classified and treated based on:

- Symptom duration[2,11]:
  - Acute LBP lasts <6 weeks.
  - Subacute LBP lasts 6-12 weeks.
  - Chronic LBP lasts >12 weeks.
- Presence or absence of radiculopathy or sciatica[1,11].
  - Sciatic pain is radiating pain from the buttocks to the leg and is frequently associated with LBP[22].
- Corresponding anatomical or radiographic abnormalities[11].

4.2 Epidemiology

LBP is common in the adult population[4,23,24], especially among women[2,23]. The global lifetime prevalence of LBP from different studies ranges from 40% [8] to 84%[2,4,25] and is more prevalent in high-income than in low-income countries[8]. LBP is considered the most common public health problem and the leading cause of sick leave and activity limitation [26].

The prevalence of LBP in Qatar is estimated to be approximately 60%[24,27]:

- Non-specific LBP accounts for 90–95%[1,8].
- Radicular involvement is less common, up to 43%[28].
- Chronic LBP is present in about 23% of cases[25].

4.3 Risk Factors

Risk factors for back pain include[2,3,7,8,23]:

- Older age.
- Female gender.
- Family history.
- Anatomical deformity of the spine or lower limbs [**R-GDG**].
- Obesity (body mass index ≥30kg/m^2).
- Occupational and ergonomic factors[29]:
  - Sedentary lifestyle at home or work with prolonged sitting or standing.
  - Heavy lifting or lifting with poor technique, e.g. in nursing care.
  - Certain sport activities.
- Psychological factors:
  - Distress.
  - Depression.
  - Expectation of harm.
- Smoking.
- Pregnancy.

4.4 Prognosis

Many patients with acute LBP do not to seek medical care[2,11]. When discussing treatment options with patients who do seek medical care, consider that:

- Most patients with acute *musculoskeletal* LBP will experience spontaneous improvement within 2-4 weeks[2,11].
- Episodes of acute radicular LBP tend to be self-limiting.
    - These episodes will typically resolve within 6-8 weeks without treatment[2].

Up to 30% of patients with LBP report persistent low back pain of at least moderate intensity one year after an acute episode[11]. 20% of patients experience substantial limitations in activity[11].

The following 'flags' are indicators of a poor outcome for LBP[1,8]:

- Black flags:
    - Societal obstacles to recovery.
- Blue flags:
    - Negative workplace beliefs.
- Yellow flags:
    - 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.
    - Avoidance behaviour.
    - Lack of social support.
- Orange flags:
    - Psychiatric symptoms.

5 Clinical Assessment

5.1 Clinical Presentation

Presenting features that may be associated with LBP include[2]:

- Pain, may be:
  - Poorly localised in the lower lumbar region.
  - Deep ache, sharp, burning, or needle-like in nature.
  - Constant or pulsatile.
  - 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, hypoaesthesia 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[1–3]:

- Location, duration, nature, and severity of the pain.
- Diurnal variation and presence of early morning stiffness.
- Precipitating factors (e.g. sitting, standing, 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 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*[30].
- History of recent strenuous physical activity, significant trauma or fall.
- Past medical and surgical history (e.g. osteoporosis, tuberculosis, HIV, malignancy).
- 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

Physical examination of patients with LBP should include the following components[1,2,22,31]:

- 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 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.
  - Evaluation for cauda equina compression
    - Rectal tone.
    - Anal wink reflex.
    - Saddle anaesthesia.
  - Range of movement of the spine and lower limbs.
    - Straight leg raise is recommended to identify radiculopathy in L4 to S1.
    - Consider variations of this test, e.g. crossed straight-leg raising test for disc herniation.
  - 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 detect 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[2]:
    - 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.

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 [1–4]:

- **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:
  - Prior history of malignancy (e.g. cancer, neoplasm)[32].
  - 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 develop fever, e.g. epidural abscess[2]).
  - Recent infection.
  - Spinal procedure within the last 12 months.
  - Presence of other infections (e.g. HIV).
  - Immunosuppression.
  - Intravenous drug use.

6 Investigation

Imaging and laboratory tests are not required for most patients to diagnose LBP[2,3,5] [**L1, RGB**].

Consider the following tests based on history and results of examination[2,4,6,7]:

- 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.
  - Magnetic resonance imaging (MRI).
  - Densitometry by DEXA scan.
- Electromyography.
- Nerve conduction velocities.
- Facet medial branch diagnostic block.
- Other disease-appropriate laboratory studies.

Further diagnostic tests should only be considered in specialist settings of care for the following patients[2,5,8] [**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 investigation is likely to influence 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. However the more common diagnoses associated with LBP include[4,5,7,11]:

- Muscular pain.
  - Lumbosacral muscle strains/sprains.
- Osteoarthritis of the lumbar spine.
- Spinal trauma:
  - Fracture.
  - Vertebral compression fracture.
- Disc herniation.
- Ankylosing spondylitis.
- Lumbar spondylosis.
- 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 sacroiliitis.
  - Epidural abscess.
  - Paraspinal muscle abscess.
- Lumbar instability.
- Sacroiliac joint disease.
- Post lumbar surgery syndrome.
- Pregnancy.

Many disorders that are not directly related to the spinal structures, may present with LBP. These may include, but are not limited to[2,4,12]:

- Biliary colic.
- Pneumonia.
- Aortic aneurysms.
- Cholecystitis.
- Pancreatitis.
- Urolithiasis.
- Obstructive or infectious renal disease.
- Renal tumours.
- Endometriosis.
- Ovarian cysts.
- Perinephric abscesses.
- Psychologic distress.
- Depression.

8 Primary Care Management

8.1 Education and Self-Care Advice

Exercise with education may be effective for the management of LBP [8] [**L2, RGB**]. All patients should receive[5,8] [**L1**]:

- Information on the nature of LBP.
    - Provide information, 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]:
    - Encouragement to continue normal physical activity within pain tolerance.
    - Short periods of bed rest (1- 2 h maximum) if pain is severe.
    - Avoiding heavy lifting.
    - Lumbar support pillow for travel.
- Promote a return to work, wherever possible.

8.2 Workplace Intervention

Risk factors for occupational back pain include[9,33]:

- 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[9] [**L1, RGB**]. Assistive devices and other technologies (see *Section 8.3.4*) also have no evidence of a preventive effect[9,10,33] [**L1, RGB**].

Of all the workplace interventions, only exercise has a documented positive benefit in patients with LBP and can be applied in the workplace with the potential to prevent LBP[9,10][**L1, RGA**].

8.3 Non-Pharmacological Treatments

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

8.3.1 Exercise and Physiotherapy

Exercise therapy for patients with acute and subacute LBP is not recommended, due to insufficient evidence[1,11] [**L1, RGB**]. Consider exercise therapy for patients with chronic LBP[1–5,11] [**L1, RGA**]. When choosing the type of exercise, review patient's preferences, capabilities, and specific needs.

Focus on[1,5,34]:

- Stretching.
- Strength training exercises.
- Aquatic exercises.
- Aerobic exercise.
- Motor control exercises.
- Clinical pilates.

8.3.2 Manual Therapy

Manual therapy may be offered as adjuvant treatment for managing acute, subacute or chronic LBP with or without sciatica[1,2,4,5,11,12] [**L1, RGB**]. Consider the following approaches:

- Spinal manipulation.
- Mobilisation.
- Soft tissue techniques (e.g. massage).

Manual therapy is not recommended in patients with severe osteoporosis or severe degenerative changes [**R-GDG**].

8.3.3 Acupuncture and Dry Needling

Acupuncture is not recommended for the management of LBP due to insufficient evidence of benefit[1,5][**L1, RGB**], but may be considered in refractory cases[2,11,12]. Dry Needling (of muscular trigger points may also be beneficial in certain patients [35,36].

8.3.4 Assistive Devices

The following assistive aids and devices are **not** recommended for managing LBP[3,18,19,20] [**L1, RGB**]:

- Belts or corsets.
- Braces.
- Lumbar supports.
- Insoles and foot orthotics.
- Rocker sole shoes.
- Traction and traction devices.

8.3.5 Other Treatments

The following approaches have insufficient evidence to justify their routine use in managing LBP [5,11,12] [**L1, RGB**], but may be considered in refractory cases, as long as there is no evidence of causing harm [2,12]:

- 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 Interventions

Using screening tools (e.g. *Örebro Musculoskeletal Pain Questionnaire* or *Central Sensitizing Inventory*) are recommended to assess psychosocial factors associated with LBP[13].

Psychological therapies should not be offered alone. They are recommended only as part of a multimodal therapy along with physical interventions[3,5,13,14] [**L1, RGA**]. Consider the following techniques[3–5,12,15]:

- Cognitive behavioural therapies.
- Progressive muscle relaxation.
- Biofeedback.
- Acceptance and commitment therapy.
- Mindfulness.
- Meditation.

Psychological therapies should aim at restructuring the negative cognition, improving pain acceptance, and reducing psychological symptoms such as[13]:

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

8.5 Pharmacological Treatment in Primary Care

Pharmacological therapy should only be implemented when non-pharmacological treatments are ineffective, or insufficient, for pain management[8].

Consider the following medications for managing LBP[1,3–5,8,12] [**L1, RGA**]:

- Oral non-steroidal anti-inflammatory drugs (NSAIDs).
- Weak opioids (e.g. tramadol) with or without paracetamol.
- Paracetamol.
- Skeletal muscle relaxants.

Oral NSAIDs can be used for pain management in patients with either acute and chronic LBP [1] [**L1**]. They should however be prescribed at the lowest effective dose for the shortest possible period of time[5,12] [**L1, RGA**]. Before prescribing NSAIDs, the following aspects should be assessed and a plan for monitoring the patient, implemented[1,5,11,12]:

- 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[5] [**L1, RGC**].

Weak opioids may be offered for managing acute LBP only if[1,3,5,8] [**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.

Skeletal muscle relaxants may be considered in certain cases[1,2,3,4,9,24,26], for short-term pain relief in patient with acute LBP[37] [**L1, RGB**]. Adverse effects, especially sedation and addictive potential, should be reviewed before prescribing[11].

Consider prescribing one of the following[11,37]:

- 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[2,4,5] [**L1, RGB**]:

- Systemic steroids.
- Lidocaine patches.

9 Referral Criteria to Specialist Care

Referral to a specialist is recommended for the following [1–3,5,12]:

- Suspected specific pathology of the spine, soft tissues or viscera.
- Suspected radicular pain or pathology.
- Patients presenting with any somatic warning signs or red flags (see *Section 5.4*).
- Patients who fail to improve after 4 weeks of physiotherapy.
- Patients who 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[3,11] [**L1,RGA**]

- Patients at medium-risk or high-risk of a poor outcome[8].
- Patients with chronic back pain[2,12].

The Multidisciplinary Team should include professionals from the following disciplines [4,12]:

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

Consultation with, or referral to, an appropriate specialist is required if management of comorbidities, mental health concerns, or significant functional deficits, is necessary [3] [**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[5] [**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[2–4,9,24] [**L1, RGB**].
  - Options include:
    - Serotonin–norepinephrine reuptake inhibitors (SNRIs).
    - Selective serotonin reuptake inhibitors (SSRIs).
    - Tricyclic antidepressants.
- **Anticonvulsants:**
  - For LBP associated with radicular pain (sciatica), anticonvulsants may be considered under specialist supervision, as per neuropathic pain guidelines [**R-GDG**].

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[5,7,16] [**L1**] and/or spinal stenosis[7,16] [**L2**]. Pain management and regenerative therapies with injections are not recommended for routine use[2,5] [**L1**] but may be considered if conservative therapy has failed[17] [**L1, RGB**].

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[2]:

- Corticosteroids[7,16,17].
- Local anaesthetics[16].
- Anti-tumour necrosis factor agents[16].
- Platelet-rich plasma[17].
- Mesenchymal stem cells[17].
- Botulinum toxin A[2].

The use of radiofrequency denervation may be considered in patients with moderate to severe chronic LBP if other non-surgical interventions are ineffective [1,5] [**L1, RGB**].

10.4 Spinal Surgery

Spinal decompression is indicated as an emergency for patients with acute cauda equina syndrome and/or motor deficits[2] [**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[8,12] [**L1, RGB**].

Spinal surgery must be considered carefully in the following patients and only if they fail to respond to non-surgical treatments[5,6]:

- Radiculopathy[2] [**L2, RGA**]:
  - With rapidly progressive or severe neurologic deficits.
  - With milder deficits associated with a structural lesion or active denervation.
- Spinal stenosis[2,18] [**L2, RGB**].
- Slipped or herniated discs [19] [**L2**].
- Spinal deformity [18] [**L2**].
- Spinal tumours and metastatic spinal cord compression [18] [**L2**].
- Spinal injury (e.g. fracture)[18] [**L2**].

Note:

- Spinal fusion for non-specific low back pain should only be offered as part of a randomised controlled trial[5,20] [**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[7,21].

Recurrent or continuing symptoms in PLSS, may be caused by[7,21]:

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

Treatment options for PLSS include[38] [**L1**]:

- Specialist pharmacotherapy.
- Exercise, physiotherapy, and behavioural rehabilitation.
- Interventional procedures (e.g. peri-neural release or epidural adhesiolysis).
- Neuromodulation and implantable technologies (e.g. spinal cord stimulation and intrathecal drug delivery systems).
- 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[21,38] [**L1, RGB**].

10.5 Follow-Up

Periodic clinical visits should be carried out for[3] [**L1, RGA**]:

- Revaluation 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[6] [**L2**].

After surgery, follow-up depends on the type of procedure[6] [**L2**]. Note that:

- Comorbid conditions should be assessed[3].
- Postoperative physiotherapy may be required[6].
- 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 made 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. 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.

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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.

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.

Peer-reviewed scientific publications were found in PubMed and via *Google Scholar* Internet search engine. Non-peer reviewed studies were identified in *bioRxiv*. Books were checked on PubMed. Information published on medical websites and drug prescribing information sheets were found via Google search engine.

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.

Figure A.1 on the next page demonstrates graphically the results of the search and application of exclusion criteria.

View Pathway

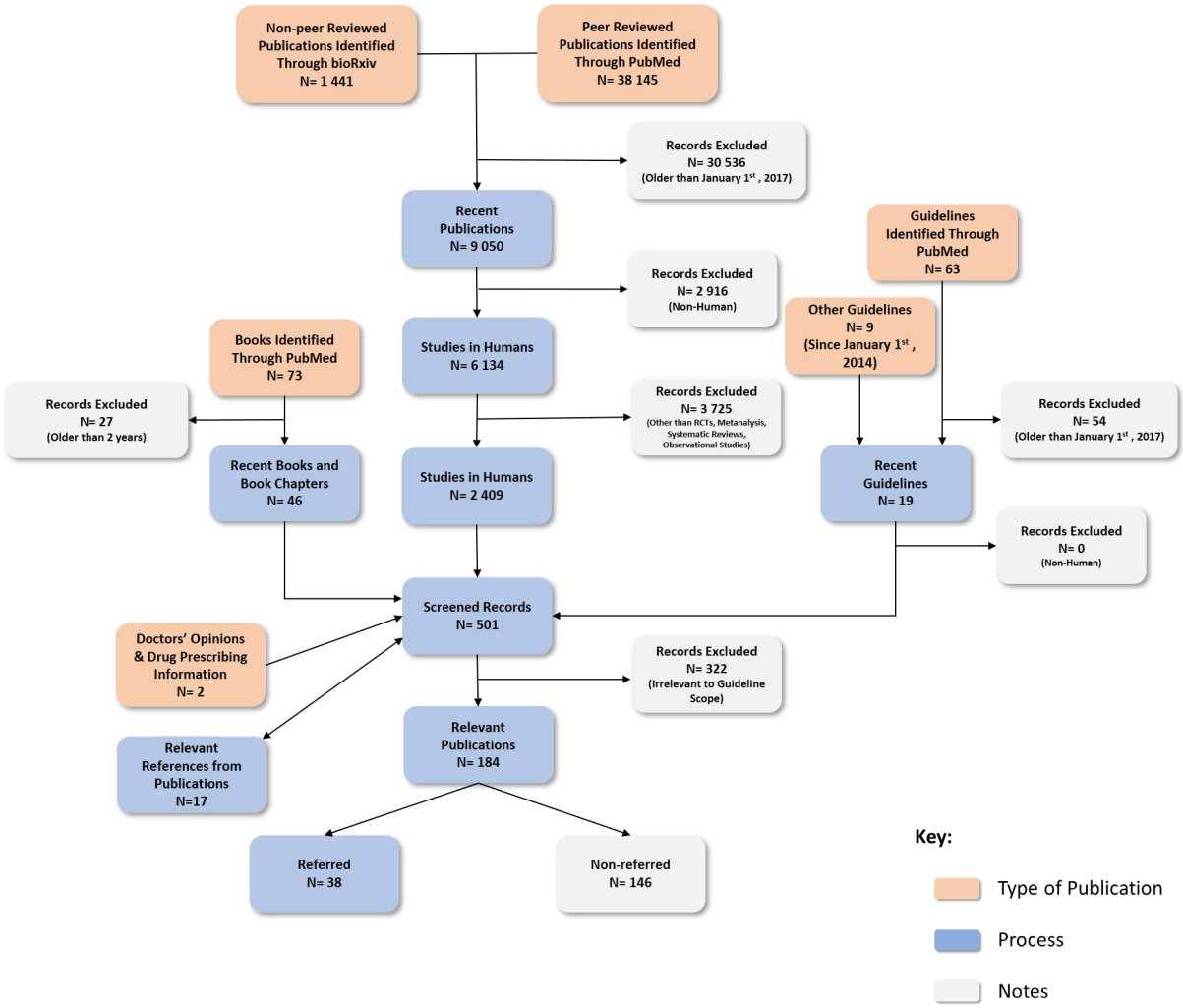

Fig A.1: Literature search results and application of exclusion criteria.

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