National Guideline Clearinghouse
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Brief Summary

GUIDELINE TITLE

Low back disorders.

BIBLIOGRAPHIC SOURCE(S)

Low back disorders. Occupational medicine practice guidelines: evaluation and management of common health problems and functional recovery in workers. 2nd ed. Elk Grove Village (IL): American College of Occupational and Environmental Medicine (ACOEM); 2007. 366 p. [1310 references]

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Low back complaints. In: Glass LS, editor(s). Occupational medicine practice guidelines: evaluation and management of common health problems and functional recovery in workers. 2nd ed. Elk Grove Village (IL): American College of Occupational and Environmental Medicine (ACOEM); 2004. p. 286-326.

The ACOEM *Guidelines* are currently being updated on a 3-year rolling process.

** REGULATORY ALERT **

FDA WARNING/REGULATORY ALERT

Note from the National Guideline Clearinghouse: This guideline references a drug(s) for which important revised regulatory and/or warning information has been released.

- December 16, 2008 - Antiepileptic drugs: The U.S. Food and Drug Administration (FDA) has completed its analysis of reports of suicidality (suicidal behavior or ideation [thoughts]) from placebo-controlled clinical trials of drugs used to treat epilepsy, psychiatric disorders, and other conditions. Based on the outcome of this review, FDA is requiring that all manufacturers of drugs in this class include a Warning in their labeling and develop a Medication Guide to be provided to patients prescribed these drugs to inform them of the risks of suicidal thoughts or actions. FDA expects that the increased risk of suicidality is shared by all antiepileptic drugs and anticipates that the class labeling change will be applied broadly.

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RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Definitions for the strength of evidence ratings (A, B, C, and I) and the criteria for evidence-based recommendations are presented at the end of the "Major Recommendations" field.

General Summary of Recommendations

- The initial assessment of patients with low back problems focuses on detecting indications of potentially serious disease, termed "red flags" (i.e., fever or major trauma).
- In the absence of red flags, imaging and other tests are not recommended in the first 4 to 6 weeks of low back symptoms as they almost never result in a meaningful change in clinical management. Nonprescription medication or an appropriately selected nonsteroidal anti-inflammatory drug (NSAID), appropriate adjustment of physical activity if needed, and the use of thermal modalities such as heat and/or cryotherapies can safely relieve discomfort.
- In the absence of red flags, primary care and occupational physicians or other health care professionals can effectively manage low back problems conservatively.
- At the first visit, the physician should assure the patient that low back pain (LBP) is normal, has an excellent prognosis and, in most cases, is not debilitating on a long-term basis. Patients with elevated fear avoidance beliefs may require additional instructions and interventions to be reassured of this prognosis. Theoretically, this reassurance has the potential to avoid increasing the probability of the patient developing chronic pain syndrome.
- To avoid undue back irritation and debilitation from inactivity, some activity or job modification may be helpful in the acute period. However, bed rest is not recommended for essentially all LBP and radiculopathy patients other than those with unstable fractures or cauda equina syndrome with pending neurological catastrophe. Maintaining ordinary activity, as tolerated, leads to the most rapid recovery.
- All patients should be encouraged to return to work as soon as possible as evidence suggests this leads to the best outcomes. This process may be facilitated with modified duty particularly if job demands exceed patient capabilities. Full-duty work is a reasonable option for patients with low physical job demands and the ability to control such demands (e.g., alternate their posture) as well as for those with less severe presentations.
- Aerobic exercise has the best evidence of efficacy among the exercise regimens, whether for acute, subacute, or chronic LBP patients.
- Non-specific stretching is not recommended as it is not helpful for treatment of LBP. However, specific types of stretching exercises appear helpful (e.g., directional and slump stretching). Strengthening exercises, including lumbar stabilization exercises, are recommended, but not until the acute period of LBP has subsided.
- There is evidence of efficacy for manipulation for treatment of non-specific LBP, particularly for those patients who test positive for the Clinical Prediction Rule.
- Many invasive and noninvasive therapies are intended to cure or manage LBP, but no strong evidence exists that they accomplish this as successfully as therapies that focus on restoring functional ability without focusing on pain. In those cases, the traditional medical model of "curing" the patient does not work well. Furthermore, patients should be aware that returning to normal activities most often aids functional recovery.
- Patients should be encouraged to accept responsibility for managing their recovery rather than expecting the provider to provide an easy "cure." This process will promote using activity rather than pain as a guide, and it will make the treatment goal of return to occupational and non-occupational activities more obvious.
- If symptoms persist without improvement, further evaluation is recommended.
- Within the first 3 months of low back symptoms, only patients with evidence of severe spinal disease or severe debilitating symptoms and physiologic evidence of specific nerve root compromise confirmed by appropriate imaging studies, can be expected to potentially benefit from surgery.
- Quality evidence exists indicating that patient outcomes are not adversely affected by delaying surgery for weeks or a few months and continued conservative care is encouraged in patients with stable or improving deficits who desire to avoid surgery. However, patients with severe or progressive deficits that are not improving at 4 to 6 weeks may benefit from earlier surgical intervention.
- Nonphysical factors (such as psychiatric, psychosocial, workplace, or socioeconomic problems) should be investigated and addressed in cases of delayed recovery or delayed return to work.
- Physicians can greatly improve patient response to back symptoms by providing assurance, encouraging activity, and emphasizing that more than 90% of LBP complaints resolve without any specific therapies. While patients may be looking for a clear-cut diagnosis for their LBP, the risk to them of a suggested "cure" for this assumed diagnosis, resulting in failed expectations, may be worse than their symptoms.
- Physicians should be aware that "abnormal" findings on x-rays, magnetic resonance images, and other diagnostic tests are so common they *are normal* by age 40. Bulging discs continue to increase after age 40, and by age 60 will be encountered in 80% of patients. This requires that a careful history and physical examination be conducted by a

skilled physician in order to correlate historical, clinical, and imaging findings prior to assigning the finding on imaging to a patient's complaints. It is recommended that physicians unable to make those correlations, and thus properly educate patients about these complex issues, should defer ordering imaging studies to a qualified consultant in musculoskeletal disorders. Without proper education on prevalence, treatment, and prognosis, patients may become fixated on "fixing" their abnormality (which may in fact be a completely normal condition) and thus iatrogenically increase their risk of developing chronic pain.

- Significant abnormalities in hip range-of-motion may increase the probability of back disorders.

Summary Tables: Recommendations and Evidence

The following summary tables contain the recommendations of the Evidence-based Practice Spine Panel. These recommendations are based on critically appraised higher quality research evidence or, when higher quality evidence was unavailable or inconsistent, on expert consensus observing the First Principles of Clinical Logic as required in the American College of Occupational and Environmental Medicine (ACOEM) Methodology. Table 1 is a summary of the recommendations by treatment (i.e., medications). Table 2 is a summary by low back disorder. The reader is cautioned to utilize the more detailed indications, specific appropriate diagnoses, temporal sequencing, preceding testing or conservative treatment, and contraindications that are elaborated in more detail for each test or treatment in the body of this Guideline when using these recommendations in clinical practice or medical management. These recommendations are not simple "yes/no" criteria.

Recommendations are made under the following categories:

- Strongly Recommended, "A" Level
- Moderately Recommended, "B" Level
- Recommended, "C" Level
- Insufficient – Recommended (Consensus-based), "I" Level
- Insufficient – No Recommendation (Consensus-based), "I" Level
- Insufficient – Not Recommended (Consensus-based), "I" Level
- Not Recommended, "C" Level
- Moderately Not Recommended, "B" Level
- Strongly Not Recommended, "A" Level

Table 1: Summary of Recommendations for Evaluating and Managing Low Back Disorders

Clinical Measure	Treatment with Evidence Rating/Recommendation Level		
	Recommended	**No Recommendation**	**Not Recommended**
Diagnostic Testing	X-rays for acute low back pain (LBP) with red flags for fractures or systemic illness, subacute not improving, or chronic LBP as an option to rule out other conditions (I) Flexion and extension views for evaluation of symptomatic spondylolisthesis (I) Magnetic resonance imaging (MRI) for acute LBP during first 6 weeks if red flags (I) MRI for subacute or chronic radicular pain syndromes lasting at least 4 to 6 weeks (B) MRI as an option for select chronic LBP (I) Computerized tomography (CT) for acute or subacute radicular pain syndrome that has failed to improve within 4 to 6 weeks (C) Myelography, including CT myelography, for uncommon specific situations (I) Electrodiagnostic studies, which must include needle electromyography (EMG) where CT or MRI is equivocal and there are ongoing pain complaints (C)	Functional capacity evaluations for subacute or chronic stable LBP or post-operative recovery (I)	Routine x-rays for acute, nonspecific LBP (C) MRI for acute radicular pain syndromes in first 6 weeks, regardless of signs of neurological impingement, unless severe and not trending towards improvement (C) Standing or weight-bearing MRI for any back or radicular pain syndrome or condition (I) Computerized tomography (CT) for acute, subacute, chronic non-specific LBP, or radicular pain syndromes (I) Electrodiagnostic study for acute, subacute or chronic LBP patients who do not have significant leg pain or numbness (C) Routine bone scanning for LBP (I) Single proton emission computed tomography (SPECT) for acute, subacute, or chronic LBP, or radicular pain syndromes or other LBP-related conditions (I) Diagnostic ultrasound (I) Fluoroscopy for acute, subacute, or chronic LBP (I) Videofluoroscopy for acute, subacute, or chronic LBP (I) Discography for acute, subacute, or chronic LBP or radicular pain syndromes (B) MRI discography (C) Myeloscopy for acute, subacute, or chronic LBP, or spinal stenosis, radicular pain syndromes, or post-surgical back pain problems (I) Surface electromyography (I) Thermography for acute, subacute, or chronic LBP or radicular pain (I) Functional capacity evaluations for acute LBP, acute or subacute radicular pain

Clinical Measure	Treatment with Evidence Rating/Recommendation Level		
	Recommended	**No Recommendation**	**Not Recommended**
			syndromes, or post-surgical back pain within first 12 weeks of postoperative period (I)
Medications	NSAIDs for acute LBP (A) NSAIDs for subacute, chronic, or post-operative LBP (B) NSAIDs for radicular pain syndromes including sciatica (C) Cytoprotective medications for patients with contraindications for NSAIDs (C) Acetaminophen for LBP with or without radicular symptoms if contraindications for NSAIDs (C) Discuss risks/benefits of NSAID therapy with patients with known or multiple risk factors for cardiovascular disease (I) Acetaminophen or aspirin as 1st-line therapy for patients with known or multiple risk factors for cardiovascular disease (A) Norepinephrine reuptake inhibitors for chronic LBP (A) Norepinephrine reuptake inhibitors for radicular pain (C) Topiramate for limited use in select chronic LBP as 4th- or 5th-line agent (C) Carbamazepine for chronic radicular or neuropathic pain as a 4th- or 5th-line agent (I) Gabapentin for perioperative pain management (A) Gabapentin for severe neurogenic claudication with limited walking distance (C) Limited use (2 to 3 weeks) of opioids with longer periods for more invasive procedures (C) Skeletal muscle relaxants as 2nd-line treatment in moderate to severe acute LBP not adequately controlled by NSAIDs (B) Skeletal muscle relaxants as 2nd- or 3rd-line treatments for acute radicular pain syndromes or acute post-surgical situations (I) Glucocorticosteroids for acute severe radicular pain syndromes (C) Harpagoside in carefully selected patients for acute, subacute, or chronic LBP if NSAIDs contraindicated (C) Capsicum for acute and subacute LBP, or temporary flare-ups of chronic LBP (B)	Gabapentin for chronic radicular pain syndromes (I) Thiocolchicoside for acute, subacute, or chronic LBP (I) Creams and ointments for acute, subacute, chronic LBP (I) Camphora molmol, Maleluca alternifolia, Angelica sinensis, Aloe vera, Thymus officinalis, Menthe piperita, Arnica Montana, Curcuma longa, Tanacetum parthenium, Zingiber officinalis (I)	Selective serotonin reuptake inhibitors (e.g., paroxetine, bupropion, trazodone) for chronic LBP (A) Antidepressants for acute or subacute LBP (I) Topiramate for neuropathic pain, including peripheral neuropathy (I) Oral and intravenous (IV) colchicine for acute, subacute, or chronic LBP (I) Gabapentin for chronic non-neuropathic pain or LBP (C) Routine use of opioids for acute, subacute, or chronic LBP (C) Skeletal muscle relaxants for mild to moderate acute LBP or chronic use in subacute or chronic LBP (other than acute exacerbations) (I) Glucocorticosteroids for acute LBP (B) Glucocorticosteroids for subacute or chronic LBP, mild to moderate radiculopathy (I) Tumor necrosis factor-alpha inhibitors for radicular pain syndromes (C) Tumor necrosis factor-alpha inhibitors for acute, subacute, or chronic LBP (I) Vitamins for acute, subacute, or chronic LBP, or post-operative LBP or radiculopathy (I) Willow bark (salix) (I) Spiroflor (I) Complementary or alternative treatments or dietary supplements, etc., other than those discussed in chapter (I)
Orthotics and Immobilization	Bed rest for unstable spinal fractures (I) Alteration of sleep posture (I)		Bed rest for acute LBP (A) Bed rest for subacute and chronic LBP (B) Bed rest for stable spinal fractures (I) Bed rest for radicular pain syndromes including sciatica (C) Bed rest for other low back problems (I) Commercial sleeping products (e.g., pillows) for primary prevention or treatment of acute, subacute, or chronic LBP (I)

Clinical Measure	Treatment with Evidence Rating/Recommendation Level		
	Recommended	**No Recommendation**	**Not Recommended**
Physical Treatment Methods	Shoe lifts for chronic or recurrent LBP with leg length discrepancy of >2cm (I) Shoe insoles for chronic LBP with prolonged walking requirements (C) Self-application of low-tech cryotherapies for acute LBP (I) Self-application of heat therapy including a heat wrap (C) Massage for time-limited use in subacute and chronic LBP patients without underlying serious pathology and as an adjunct to a conditioning program with both graded aerobic exercise and strengthening exercises (C) Massage for acute LBP and chronic radicular pain syndromes (I) Transcutaneous electrical neurostimulation (TENS) (single or dual channel) for select use in chronic LBP or chronic radicular pain syndrome as an adjunct for more efficacious treatments (C) Manipulation or mobilization for select acute LBP based on Clinical Prediction Rule (B) Manipulation or mobilization for acute or subacute LBP without Clinical Prediction Rule (C) Acupuncture for select use in chronic LBP as a limited course during which time there are clear objective and functional goals (C) Neuroreflexotherapy for moderate to severe chronic LBP in patients who have failed management with NSAIDs, progressive aerobic exercise program or other exercises, and manipulation (C)	Shoe insoles for spinal pain patients, including those without prolonged walking requirements (I) Mattress firmness (I) Other optimal sleeping surfaces (e.g., bedding, water beds, hammocks) (I) Infrared therapy for acute LBP (I) Infrared therapy for home use (I) Ultrasound (I) Neuroreflexotherapy for acute or subacute LBP or radicular pain syndromes (I) Interferential therapy for acute LBP with or without radicular pain (I)	Shoe insoles and lifts for acute LBP (I) Shoe insoles and lifts for subacute or chronic LBP, radicular pain syndromes or other back-related conditions other than leg length discrepancy >2cm (I) Shoe insoles and lifts for primary prevention (C) Routine use of cryotherapies in health care provider offices or home use of a high-tech device for LBP (I) Lumbar supports (C) Lumbar supports for prevention of LBP (C) Magnets (I) Diathermy for any LBP-related condition (C) Infrared therapy for subacute and chronic LBP (I) Low-level laser therapy (I) Mechanical devices for administering massage (C) Traction for acute, subacute, or chronic LBP or radicular pain syndromes (C) Decompression through traction and spinal decompressive devices for acute, subacute, chronic LBP or radicular pain syndromes (I) Interferential therapy for subacute or chronic LBP, chronic radicular pain syndromes, or other back-related conditions (C) TENS for acute or subacute LBP or acute radicular pain syndromes (I) Percutaneous electrical nerve stimulation (PENS) for acute or subacute LBP, radicular pain syndromes (I) PENS for chronic non-radicular LBP (I) Microcurrent electrical stimulation for acute, subacute, or chronic LBP or radicular pain syndrome (I) H-wave stimulation for acute, subacute, or chronic LBP or radicular pain syndromes (I) Taping or kinesiotaping for acute, subacute, or chronic LBP, radicular pain syndromes or other back-related conditions (I) Myofascial release for acute, subacute, or chronic LBP, or radicular pain syndromes or other back-related conditions (I) High-voltage galvanic for acute, subacute, or chronic LBP, or radicular pain syndromes or other back-related conditions (I) Iontophoresis for acute, subacute, or chronic LBP, or radicular pain syndromes or other back-related conditions (I) Regular or routine manipulation or mobilization (several times a month for years) (I)

Clinical Measure	Treatment with Evidence Rating/Recommendation Level		
	Recommended	**No Recommendation**	**Not Recommended**
			Manipulation for radicular pain syndromes with acute neurological deficits (I) Adjustments/manipulation of neck/cervical spine, or areas outside lumbopelvic region (I) Manipulation under anesthesia (MUA) and medication-assisted spinal manipulation (MASM) for acute, subacute, or chronic LBP (I) Acupuncture for acute or subacute LBP, radicular pain syndromes or conditions other than chronic LBP (I) Reflexology for chronic LBP (C) Reflexology for acute, or subacute LBP, or other spinal conditions (I)
Activity and Exercise	Aerobic exercise for acute, subacute, or chronic LBP (A) Aerobic exercise for post-operative patients (I) Slump stretch-related exercise or directional preference stretching exercises for acute, subacute, or chronic LBP (C) Strengthening exercises (after instituting aerobic exercises) for acute, subacute, or chronic LBP, post-operative LBP patients (C) Inclusion of Fear Avoidance Belief Training (FABT) during course of rehabilitation (I) Yoga for select highly motivated chronic LBP patients (C) Trial of aquatic therapy for subacute or chronic LBP if patient meets referral criteria for supervised exercise therapy and has co-morbidities that preclude participation in weight-bearing physical activity (I)	Yoga for acute or subacute LBP (I)	Aggressive stretching exercises (I) Stretching exercises for preventing LBP (C) Strengthening of abdominal muscles for treatment or prevention of LBP (I) Lumbar extension machines for acute, subacute, or chronic LBP, or any radicular pain syndrome (I) Aquatic therapy for all acute LBP and all other subacute and chronic LBP not meeting referral criteria (I)
Injections	Epidural glucocorticosteroid injections as option for acute or subacute radicular pain syndromes lasting at least 3 weeks after treating with NSAIDs and without evidence of trending towards spontaneous resolution (I) Epidural glucocorticosteroid injections as 2nd-line treatment of acute spinal stenosis flare-ups (I) Trigger and/or tender point injections as 2nd or 3rd option for subacute or chronic LBP that is not resolving (C) Sacroiliac joint corticosteroid injections as option for patients with specific known cause of sacroiliitis (C)	Diagnostic facet joint injections for chronic LBP (I) Botulinum injections for acute, subacute, or chronic LBP, or radicular pain syndromes or other low back problems (I)	Epidural glucocorticosteroid injections for acute, subacute, or chronic LBP in the absence of radicular signs and symptoms (C) Intradiscal steroids for acute LBP (I) Intradiscal steroids for subacute or chronic LBP (B) Trigger and/or tender point injections for acute LBP (I) Diagnostic facet joint injections for acute or subacute LBP or radicular pain syndromes (I) Therapeutic facet joint injections for acute, subacute, chronic LBP or radicular pain syndrome (B) Facet joint hyaluronic acid injections (I) Sacroiliac joint injections for acute LBP, including LBP thought to be sacroiliac joint related (I) Prolotherapy injections for acute, subacute, chronic LBP or radicular pain syndrome (C) Radiofrequency lesioning of dorsal root ganglia for chronic sciatica (B) Radiofrequency neurotomy, neurotomy,

Clinical Measure	Treatment with Evidence Rating/Recommendation Level		
	Recommended	**No Recommendation**	**Not Recommended**
			or facet rhizotomy for any spinal condition (C) Intradiscal electrothermal annuloplasty (IDET) for acute, subacute, or chronic LBP or any other back-related disorder (I) Percutaneous intradiscal radiofrequency thermocoagulation (PIRFT) for acute, subacute, or chronic LBP, including discogenic LBP (A)
Surgical Considerations	Lumbar discectomy for radiculopathy due to ongoing nerve root compression with continued significant pain and functional limitation after 4 to 6 weeks and appropriate conservative treatment (B) Decompressive surgery for symptomatic spinal stenosis (neurogenic claudication) that is intractable to conservative management (B) Lumbar fusion for isthmic spondylolisthesis (C) Lumbar fusion for degenerative spondylolisthesis (C) For 3rd lumbar discectomy on same disc, spine fusion at time of discectomy is an option (I) Vertebroplasty and kyphoplasty for select patients (I)		Percutaneous discectomy (nucleoplasty), laser discectomy, and disc coblation therapy for any back or radicular pain syndrome (B) Discectomy for acute, subacute, or chronic LBP without radiculopathy (B) Lumbar fusion for spinal stenosis unless concomitant instability or deformity proven (C) Lumbar fusion for radiculopathy from disc herniation or chronic LBP after lumbar discectomy (C) Lumbar fusion for chronic non-specific LBP (B) Artificial disc replacement for chronic non-specific LBP or other spinal pain syndrome (I) Sacroiliac joint fusion surgery and other sacroiliac joint surgical procedures for any LBP condition (I) Spinal cord stimulators for acute, subacute, or chronic LBP, or radicular pain syndromes or failed back surgery syndrome (I) Adhesiolysis for acute, subacute, or chronic LBP, or spinal stenosis, or radicular pain syndromes (I)
Rehabilitation/ Behavioral/ Education	Chronic pain management or functional restoration program for chronic pain management (I) Chronic pain management or functional restoration program for subacute LBP (I) Work conditioning and work hardening programs for chronic LBP (C) Work conditioning and work hardening programs for subacute LBP (I) Participatory ergonomic programs for highly select subacute and chronic LBP (C) Biofeedback for select chronic LBP as component of an interdisciplinary approach (I) Multidisciplinary rehabilitation programs with focus on cognitive behavioral, occupational, and activity-based approaches combined with aerobic exercise and other conditioning exercise for chronic LBP (C) Multidisciplinary rehabilitation program with participatory ergonomics team for subacute or chronic LBP with lost-time injuries (C) Smoking cessation and weight loss programs to prevent LBP (I) FABT for acute, subacute, or chronic LBP (B)		Back school for acute LBP (I) Back school and education for prevention of LBP (C) Cognitive behavioral therapy for acute LBP (I) Chronic pain management or functional restoration program for acute spinal disorders (I) Work conditioning and work hardening programs for acute LBP (I) Biofeedback for acute or subacute LBP (I) Multidisciplinary rehabilitation program with primary focus on LBP interventions (I)

Clinical Measure	Treatment with Evidence Rating/Recommendation Level		
	Recommended	**No Recommendation**	**Not Recommended**
	Back school and education for select chronic LBP and chronic radicular pain syndromes (B) Cognitive behavioral therapy as component of interdisciplinary program for chronic LBP and subacute LBP when combined with other indicated therapies with parameters described in "Rehabilitation for Delayed Recovery" section (C)		

Table 2: Summary of Recommendations by Low Back Disorders

Low Back Disorder	Treatment with Evidence Rating/Recommendation Level		
	Recommended	**No Recommendation**	**Not Recommended**
Acute Low Back Pain	NSAIDs (A) Cytoprotective medications particularly if contraindications for NSAIDs (C) Acetaminophen if contraindications for NSAIDs (C) Discuss risks/benefits of NSAID therapy with patients with known or multiple risk factors for cardiovascular disease (I) Acetaminophen or aspirin as 1st-line therapy for patients with known or multiple risk factors for cardiovascular disease (A) Limited use (2 to 3 weeks) of opioids with longer periods for more invasive procedures (C) Skeletal muscle relaxants as 2nd-line treatment in select cases of moderate to severe acute LBP (B) Harpagoside in carefully selected patients if NSAIDs contraindicated (C) Capsicum (B) Alteration of sleep posture (I) Self-application of low-tech cryotherapies (I) Self-application of heat therapy including a heat wrap (C) Massage (I) Manipulation or mobilization for select patients based on Clinical Prediction Rule (B) Manipulation or mobilization for LBP without Clinical Prediction Rule (C) Aerobic exercise (A) Slump stretch-related exercise or directional preference stretching exercises (C) Strengthening exercises after aerobic exercises instituted (C) Fear Avoidance Belief Training (FABT) (B) Inclusion of FABT during course of rehabilitation (I)	Thiocolchicoside (I) Creams and ointments (I) Camphora molmol, Maleluca alternifolia, Angelica sinensis, Aloe vera, Thymus officinalis, Menthe piperita, Arnica Montana, Curcuma longa, Tanacetum parthenium, Zingiber officinalis (I) Mattress firmness (I) Other optimal sleeping surfaces (e.g., bedding, water beds, hammocks) (I) Infrared therapy (I) Infrared therapy for home use (I) Interferential therapy–with or without radicular pain (I) Ultrasound (I) Neuroreflexotherapy (I) Yoga (I) Botulinum injections (I)	Antidepressants (I) Anti-epileptic agents including carbamazepine (I) Oral and IV colchicine (I) Routine use of opioids (C) Skeletal muscle relaxants for mild to moderate acute LBP pain (I) Glucocorticosteroids (B) Tumor necrosis factor-alpha inhibitors (I) Vitamins (I) Willow bark (salix) (I) Spiroflor (I) Complementary or alternative treatments or dietary supplements, etc., other than those discussed in chapter (I) Bed rest (A) Commercial sleeping products for primary prevention or treatment (I) Shoe insoles and lifts (I) Reflexology (I) Lumbar supports (C) Magnets (I) Routine use of cryotherapies in health care provider offices or home use of high-tech device (I) Diathermy (C) Low-level laser therapy (I) Mechanical devices for administering massage (C) Traction (C) Decompression through traction and spinal decompressive devices (I) TENS (I) PENS (I) Microcurrent electrical stimulation (I) H-wave stimulation (I) Taping and kinesiotaping (I) Myofascial release (I)

Low Back Disorder	Treatment with Evidence Rating/Recommendation Level		
	Recommended	**No Recommendation**	**Not Recommended**
			High-voltage galvanic (I) Iontophoresis (I) Adjustments/manipulation of neck/cervical spine or areas outside lumbopelvic region (I) Manipulation under anesthesia (MUA) and medication-assisted spinal manipulation (MASM) (I) Acupuncture (I) Strengthening of abdominal muscles (I) Aggressive stretching (I) Aquatic therapy (I) Lumbar extension machines (I) Epidural glucocorticosteroid injections in absence of radicular signs and symptoms (C) Intradiscal steroids (I) Trigger and/or tender point injections (I) Diagnostic facet joint injections (I) Therapeutic facet joint injections (B) Facet joint hyaluronic acid injections (I) Sacroiliac joint injections (I) Prolotherapy injections (C) Radiofrequency neurotomy, neurotomy, or facet rhizotomy (C) IDET (I) PIRFT particularly including discogenic LBP (A) Spinal cord stimulators (I) Discectomy for acute LBP without radiculopathy treatment (B) Adhesiolysis (I) Back school (I) Cognitive behavioral therapy (I) Chronic pain management or functional restoration program (I) Work conditioning and work hardening programs (I) Biofeedback (I)
Subacute Low Back Pain	NSAIDs (B) Cytoprotective medications particularly if contraindications for NSAIDs (C) Acetaminophen if contraindications for NSAIDs (C) Discuss risks/benefits of NSAID therapy with patients with known or multiple risk factors for cardiovascular disease (I) Acetaminophen or aspirin as 1st-line therapy for patients with known or multiple risk factors	Thiocolchicoside (I) Creams and ointments (I) Camphora molmol, Maleluca alternifolia, Angelica sinensis, Aloe vera, Thymus officinalis, Menthe piperita, Arnica Montana, Curcuma longa, Tanacetum parthenium, Zingiber officinalis (I) Mattress firmness (I) Other optimal sleeping surfaces, e.g., bedding, water beds, hammocks (I)	Antidepressants (I) Anti-epileptic agents including carbamazepine (I) Oral and IV colchicine (I) Gabapentin (I) Routine use of opioids (C) Skeletal muscle relaxants (I) Glucocorticosteroids (I)

Low Back Disorder	Treatment with Evidence Rating/Recommendation Level		
	Recommended	**No Recommendation**	**Not Recommended**
	for cardiovascular disease (A) Harpagoside in carefully selected patients if NSAIDs contraindicated (C) Capsicum (B) Alteration of sleep posture (I) Self-application of low-tech cryotherapies (I) Self-application of heat therapy including a heat wrap (C) Massage for time limited use in subacute LBP patients without underlying serious pathology and as an adjunct to a conditioning program that has both graded aerobic exercise and strengthening exercises (C) Manipulation or mobilization for LBP without Clinical Prediction Rule (C) Aerobic exercise (A) Slump stretch-related exercise or directional preference stretching exercises (C) Strengthening exercises after aerobic exercises instituted (C) Trial of aquatic therapy if patient meets referral criteria for supervised exercise therapy and has co-morbidities that preclude participation in weight-bearing physical activity (I) Trigger and/or tender point injections as 2nd or 3rd option for subacute LBP that is not resolving (C) Chronic pain management or functional restoration program (I) Work conditioning and work hardening programs (I) Participatory ergonomic programs for highly select subacute LBP (C) Multidisciplinary rehabilitation program with a participatory ergonomics team for subacute LBP with lost-time injuries (C) Inclusion of FABT during course of rehabilitation (I) FABT (B) Cognitive behavioral therapy as component of interdisciplinary program (C)	Infrared therapy for home use (I) Ultrasound (I) Neuroreflexotherapy (I) Yoga (I) Botulinum injections (I)	Tumor necrosis factor-alpha inhibitors (I) Vitamins (I) Willow bark (salix) (I) Spiroflor (I) Complementary or alternative treatments or dietary supplements, etc., other than those discussed in chapter (I) Bed rest (B) Commercial sleeping products for primary prevention or treatment (I) Shoe insoles and lifts except if leg length discrepancy >2cm (I) Reflexology (I) Lumbar supports (C) Magnets (I) Routine use of cryotherapies in health care provider offices or home use of high-tech device (I) Diathermy (C) Infrared therapy (I) Low-level laser therapy (I) Mechanical devices for administration of massage (C) Traction (C) Decompression through traction and spinal decompressive devices (I) Interferential therapy (C) TENS (I) PENS (I) Microcurrent electrical stimulation (I) H-wave stimulation (I) Taping and kinesiotaping (I) Myofascial release (I) High-voltage galvanic (I) Iontophoresis (I) Adjustments/manipulation of neck/cervical spine or areas outside lumbopelvic region (I) MUA and MASM (I) Acupuncture (I) Strengthening of abdominal muscles (I) Aggressive stretching (I) Aquatic therapy for all other subacute LBP (I) Lumbar extension machines (I) Epidural glucocorticosteroid

Low Back Disorder	Treatment with Evidence Rating/Recommendation Level		
	Recommended	**No Recommendation**	**Not Recommended**
			injections in absence of radicular signs and symptoms (C) Intradiscal steroids (B) Diagnostic facet joint injections (I) Therapeutic facet joint injections (B) Facet joint hyaluronic acid injections (I) Prolotherapy injections (C) Radiofrequency neurotomy, neurotomy, facet rhizotomy (C) IDET (I) PIRFT particularly including discogenic LBP (A) Spinal cord stimulators (I) Discectomy for subacute LBP without radiculopathy treatment (B) Adhesiolysis (I) Biofeedback (I)
Chronic Low Back Pain	NSAIDs (B) Cytoprotective medications if contraindications for NSAIDs (C) Acetaminophen if contraindications for NSAIDs (C) Discuss risks/benefits of NSAID therapy with patients with known or multiple risk factors for cardiovascular disease (I) Acetaminophen or aspirin as the 1st-line therapy for patients with known or multiple risk factors for cardiovascular disease (A) Norepinephrine reuptake inhibitors (A) Opioid trial – both function and pain must improve to continue (I) Topiramate for limited use as 4th- or 5th-line agent (C) Harpagoside in carefully selected patients if NSAIDs contraindicated (C) Capsicum for temporary flare-ups (B) Alteration of sleep posture (I) Neuroreflexotherapy for moderate to severe chronic LBP in patients who have failed management with NSAIDs, progressive aerobic exercise program or other exercise and manipulation (C) Shoe insoles if prolonged walking requirements (C) Shoe lifts for chronic or recurrent LBP patients with leg length discrepancy of >2cm (I) Self-application of low-tech cryotherapies (I) Self-application of heat therapy including a heat wrap (C) Massage for time limited use in chronic LBP patients without underlying serious pathology and as an adjunct to a conditioning program that has both graded aerobic exercise and strengthening exercises (C)	Thiocolchicoside (I) Creams and ointments (I) Camphora molmol, Maleluca alternifolia, Angelica sinensis, Aloe vera, Thymus officinalis, Menthe piperita, Arnica Montana, Curcuma longa, Tanacetum parthenium, Zingiber officinalis (I) Mattress firmness (I) Other optimal sleeping surfaces (e.g., bedding, water beds, hammocks) (I) Infrared therapy for home use (I) Ultrasound (I) Diagnostic facet joint injections (I) Botulinum injections (I)	Selective serotonin reuptake inhibitors (e.g., paroxetine, bupropion, trazodone) (A) Anti-epileptic agents including carbamazepine (I) Oral and IV colchicine (I) Gabapentin (C) Routine use of opioids (C) Skeletal muscle relaxants (I) Systemic glucocorticosteroids (I) Tumor necrosis factor-alpha inhibitors (I) Vitamins (I) Willow bark (salix) (I) Spiroflor (I) Complementary or alternative treatments or dietary supplements, etc., other than those discussed in chapter (I) Bed rest (B) Commercial sleeping products for primary prevention or treatment (I) Reflexology (C) Shoe insoles and lifts for chronic LBP other than for lg length discrepancy >2cm (I) Lumbar supports (C) Magnets (I) Routine use of cryotherapies in health care provider offices or home use of high-tech device (I) Diathermy (C) Infrared therapy (I)

Low Back Disorder	Treatment with Evidence Rating/Recommendation Level		
	Recommended	**No Recommendation**	**Not Recommended**
	TENS for chronic LBP as an adjunct for more efficacious treatments (C) Acupuncture for select use as a limited course during which there are clear objective and functional goals (C) Aerobic exercise (A) Slump stretch-related exercise or directional preference stretching exercises (C) Strengthening exercises after aerobic exercises instituted (C) Inclusion of FABT during course of rehabilitation (I) Yoga for select highly motivated patients (C) Trial of aquatic therapy if referral criteria met for supervised exercise therapy and co-morbidities that preclude participation in weight-bearing physical activity (I) Trigger and/or tender point injections as 2nd or 3rd option for chronic LBP that is not resolving (C) Chronic pain management and functional restoration program (I) Work conditioning and work hardening programs (C) Participatory ergonomic programs for highly select chronic LBP (C) Biofeedback for select chronic LBP as component of an interdisciplinary approach (I) Multidisciplinary rehabilitation programs with focus on cognitive behavioral, occupational, and activity-based approaches combined with aerobic exercise and other conditioning exercise (C) Multidisciplinary rehabilitation program with a participatory ergonomics team for chronic LBP with lost-time injuries (C) FABT (B) Back school and education (B) Cognitive behavioral therapy as component of interdisciplinary program (C)		Low-level laser therapy (I) Mechanical devices for administering massage (C) Traction (C) Decompression through traction and spinal decompressive devices (I) Interferential therapy (C) PENS for chronic nonradicular LBP (I) Microcurrent electrical stimulation (I) H-wave stimulation (I) Taping and kinesiotaping (I) Myofascial release (I) High-voltage galvanic (I) Iontophoresis (I) Regular or routine manipulation or mobilization (several times a month for years) (I) Adjustments/manipulation of neck/cervical spine or areas outside lumbopelvic region (I) MUA and MASM (I) Aggressive stretching exercises (I) Strengthening of abdominal muscles (I) Aquatic therapy for all other chronic LBP (I) Lumbar extension machines (I) Epidural glucocorticosteroid injections in absence of radicular signs and symptoms (C) Intradiscal steroids (B) Therapeutic facet joint injections (B) Facet joint hyaluronic acid injections (I) Prolotherapy injections (C) Radiofrequency neurotomy, neurotomy, facet rhizotomy (C) IDET (I) PIRFT particularly including discogenic LBP (A) Lumbar fusion for chronic LBP after lumbar discectomy (C) Lumbar fusion for chronic nonspecific LBP (B) Artificial disc replacement for chronic nonspecific LBP (I) Spinal cord stimulators (I) Sacroiliac joint fusion surgery and other sacroiliac joint surgical procedures (I) Percutaneous discectomy

Low Back Disorder	Treatment with Evidence Rating/Recommendation Level		
	Recommended	**No Recommendation**	**Not Recommended**
			(nucleoplasty), laser discectomy, and disc coblation therapy (B) Discectomy for chronic LBP without radiculopathy treatment (B) Adhesiolysis (I)
Post-operative Low Back Pain	NSAIDs (B) Cytoprotective medications if contraindications for NSAIDs (C) Acetaminophen if contraindications for NSAIDs (C) Discuss risks/benefits of NSAID therapy with patients with known or multiple risk factors for cardiovascular disease (I) Acetaminophen or aspirin as 1st-line therapy for patients with known or multiple risk factors for cardiovascular disease (A) Gabapentin for perioperative pain management (A) Limited use (2 to 3 weeks) of opioids with longer periods for more invasive procedures (C) Skeletal muscle relaxants as 2nd- or 3rd-line agents for acute post-surgical situations (I) Alteration of sleep posture (I) Aerobic exercise (I) Strengthening exercises after aerobic exercises instituted (C) Stretching exercises to regain normal range of motion (I) Inclusion of FABT during course of rehabilitation (I)	Camphora molmol, Maleluca alternifolia, Angelica sinensis, Aloe vera, Thymus officinalis, Menthe piperita, Arnica Montana, Curcuma longa, Tanacetum parthenium, Zingiber officinalis (I) Shoe insoles (I) Mattress firmness (I) Other optimal sleeping surfaces (e.g., bedding, water beds, hammocks) (I) Infrared therapy for home use (I) Ultrasound (I) Botulinum injections (I)	Vitamins (I) Willow bark (salix) (I) Spiroflor (I) Complementary or alternative treatments or dietary supplements, etc., other than those discussed in chapter (I) Bed rest (I) Reflexology (I) Lumbar supports (C) Magnets (I) Routine use of cryotherapies in health care provider offices or home use of high-tech device (I) Diathermy (C) Low-level laser therapy (I) Mechanical devices for administering massage (C) Interferential therapy (C) Taping and kinesiotaping (I) Myofascial release (I) High-voltage galvanic (I) Iontophoresis (I) Adjustments/manipulation of neck/cervical spine or areas outside lumbopelvic region (I) Acupuncture (I) Aggressive stretching (I) Strengthening of abdominal muscles (I) Radiofrequency neurotomy, neurotomy, facet rhizotomy (C) IDET (I) Spinal cord stimulators for failed back surgery syndrome (I)
Radicular Pain Syndromes *(including "sciatica")*	NSAIDs (C) Cytoprotective medications if contraindications for NSAIDs (C) Acetaminophen if contraindications for NSAIDs (C) Discuss risks/benefits of NSAID therapy with patients with known or multiple risk factors for cardiovascular disease (I) Acetaminophen or aspirin as 1st-line therapy for patients with known or multiple risk factors for cardiovascular disease (A) Norepinephrine reuptake inhibitors (e.g., tricyclic anti-depressants) (C)	Camphora molmol, Maleluca alternifolia, Angelica sinensis, Aloe vera, Thymus officinalis, Menthe piperita, Arnica Montana, Curcuma longa, Tanacetum parthenium, Zingiber officinalis (I) Gabapentin for chronic radicular pain syndromes (I) Shoe insoles (I) Mattress firmness (I) Other optimal sleeping surfaces (e.g., bedding, water beds, hammocks) (I) Infrared therapy for home use (I)	Glucocorticosteroids for mild to moderate radiculopathy (I) Tumor necrosis factor-a inhibitors (C) Willow bark (salix) (I) Spiroflor (I) Vitamins (I) Complementary or alternative treatments or dietary supplements, etc., other than those discussed in chapter (I) Bed rest (C)

Low Back Disorder	Treatment with Evidence Rating/Recommendation Level		
	Recommended	**No Recommendation**	**Not Recommended**
	Opioid trial – both function and pain must improve to continue (I) Carbamazepine as 4th- or 5th-line treatment (I) Skeletal muscle relaxants as 2nd- or 3rd-line agents for acute radicular pain (I) Glucocorticosteroids for acute, severe radicular pain syndromes (C) Alteration of sleep posture (I) Massage for chronic radicular pain syndromes (I) TENS for chronic radicular pain syndrome as an adjunct for more efficacious treatments (C) Epidural glucocorticosteroid injections for acute or subacute radicular pain syndromes lasting at least 3 weeks after treatment with NSAIDs and without evidence of trending towards spontaneous resolution (I) Back school and education for chronic radicular pain syndromes (B) Lumbar discectomy for patients with radiculopathy due to ongoing nerve root compression who continue to have significant pain and functional limitation after 4 to 6 weeks and appropriate conservative treatment (B) For 3rd lumbar discectomy on same disc, spine fusion at time of discectomy is an option (I)	Ultrasound (I) Neuroreflexotherapy (I) Botulinum injections (I)	Reflexology (I) Shoe insoles and lifts except if leg length discrepancy >2 cm (I) Lumbar supports (C) Magnets (I) Routine use of cryotherapies in health care provider offices or home use of high-tech device (I) Lumbar extension machines (I) Diathermy (C) Low-level laser therapy (I) Mechanical devices for administering massage (C) Traction (C) Decompression through traction and spinal decompressive devices (I) Interferential therapy for chronic radicular pain (C) TENS for acute radicular pain (I) PENS (I) Microcurrent electrical stimulation (I) H-wave stimulation (I) Taping and kinesiotaping (I) Myofascial release (I) High-voltage galvanic (I) Iontophoresis (I) Manipulation for radicular pain syndromes with acute neurological deficits (I) Adjustments/manipulation of neck/cervical spine or areas outside lumbopelvic region (I) Acupuncture (I) Diagnostic facet joint injections (I) Therapeutic facet joint injections (B) Facet joint hyaluronic acid injections (I) Prolotherapy injections (C) Radiofrequency neurotomy, neurotomy, facet rhizotomy (C) IDET (I) Lumbar fusion for radiculopathy from disc herniation (C) Percutaneous discectomy (nucleoplasty), laser discectomy, and disc coblation therapy (B) Spinal cord stimulators (I) Artificial disc replacement (I) Sacroiliac joint fusion surgery and other sacroiliac joint surgical

Low Back Disorder	Treatment with Evidence Rating/Recommendation Level		
	Recommended	**No Recommendation**	**Not Recommended**
			procedures (I) Adhesiolysis (I)
Spinal Stenosis	Cytoprotective medications if contraindications for NSAIDs (C) Acetaminophen if contraindications for NSAIDs (C) Discuss risks/benefits of NSAID therapy with patients with known or multiple risk factors for cardiovascular disease (I) Acetaminophen or aspirin as 1st-line therapy for patients with known or multiple risk factors for cardiovascular disease (A) Gabapentin for severe neurogenic claudication with limited walking distance from spinal stenosis (C) Opioid trial–both function and pain must improve to continue (I) Alteration of sleep posture (I) Epidural glucocorticosteroid injections as 2nd-line treatment of acute flare-ups (I) Decompressive surgery for symptomatic spinal stenosis that is intractable to conservative management (B)	Camphora molmol, Maleluca alternifolia, Angelica sinensis, Aloe vera, Thymus officinalis, Menthe piperita, Arnica Montana, Curcuma longa, Tanacetum parthenium, Zingiber officinalis (I) Shoe insoles (I) Mattress firmness (I) Other optimal sleeping surfaces (e.g., bedding, water beds, hammocks) (I) Infrared therapy for home use (I) Ultrasound (I) Botulinum injections (I)	Willow bark (salix) (I) Spiroflor (I) Complementary or alternative treatments or dietary supplements, etc., other than those discussed in chapter (I) Bed rest (I) Shoe insoles and lifts except if leg length discrepancy >2 cm (I) Reflexology (I) Shoe insoles and lifts for primary prevention (C) Lumbar supports (C) Magnets (I) Routine use of cryotherapies in health care provider offices or home use of high-tech device (I) Diathermy (C) Low-level laser therapy (I) Mechanical devices for administering massage (C) Interferential therapy (C) Taping and kinesiotaping (I) Myofascial release (I) High voltage galvanic (I) Iontophoresis (I) Adjustments/manipulation of neck/cervical spine or areas outside lumbopelvic region (I) Acupuncture (I) Radiofrequency neurotomy, neurotomy, facet rhizotomy (C) IDET (I) Lumbar fusion unless concomitant instability or deformity proven (C) Artificial disc replacement (I)
Spinal Fractures	Bed rest for unstable spinal fractures (I) Vertebroplasty and kyphoplasty for vertebral body compression fractures among those with chronic or severe pain (I) NSAIDs (I) Acetaminophen for patients with contraindications for NSAIDs (C) Gabapentin for perioperative pain management (A) Limited use (2 to 3 weeks) of opioids with longer periods for more severe fractures (C) Skeletal muscle relaxants as 2nd- or 3rd-line agents for more severe pain (I) Alteration of sleep posture (I)	Gabapentin for chronic radicular pain syndromes (I) Mattress firmness (I) Other optimal sleeping surfaces (e.g., bedding, water beds, hammocks) (I) Infrared therapy for home use (I) Ultrasound (I) Neuroreflexotherapy (I) Botulinum injections (I)	Sacroiliac joint fusion surgery and other sacroiliac joint surgical procedures (I) Percutaneous discectomy (nucleoplasty), laser discectomy, and disc coblation therapy (B) Adhesiolysis (I) Bed rest for stable spinal fractures (I) Vitamins (I) Willow bark (salix) (I) Spiroflor (I) Complementary or alternative treatments or dietary supplements,

Low Back Disorder	Treatment with Evidence Rating/Recommendation Level		
	Recommended	**No Recommendation**	**Not Recommended**
	Gradual introduction of aerobic exercises during and to facilitate recovery (I) Strengthening exercises after aerobic exercises instituted and after healed (I) Stretching exercises to regain normal range of motion (I) Inclusion of FABT during course of rehabilitation (I)		etc., other than those discussed in chapter (I) Reflexology (I) Lumbar supports (I) Magnets (I) Routine use of cryotherapies in health care provider offices or home use of high-tech device (I) Diathermy (I) Low-level laser therapy (I) Mechanical devices for administering massage (I) Interferential therapy (I) Taping and kinesiotaping (I) Myofascial release (I) High-voltage galvanic (I) Iontophoresis (I) Adjustments/manipulation (I) Acupuncture (I) Aggressive stretching (I) Strengthening of abdominal muscles (I)
Sacroiliitis	Sacroiliac joint corticosteroid injections for specific known cause of sacroiliitis (C) NSAIDs (I) Acetaminophen if contraindications for NSAIDs (I) Skeletal muscle relaxants as 2nd- or 3rd-line agents for more severe pain (I) Alteration of sleep posture (I) Aerobic exercises (I) Strengthening exercises after aerobic exercises instituted (I) Stretching exercises to regain normal range of motion (I) Inclusion of FABT during course of rehabilitation (I)	Gabapentin (I) Mattress firmness (I) Other optimal sleeping surfaces (e.g., bedding, water beds, hammocks) (I) Infrared therapy for home use (I) Ultrasound (I) Neuroreflexotherapy (I) Botulinum injections (I)	Sacroiliac joint fusion surgery and other sacroiliac joint surgical procedures (I) Bed rest for stable spinal fractures (I) Vitamins (I) Willow bark (salix) (I) Spiroflor (I) Complementary or alternative treatments or dietary supplements, etc., other than those discussed in chapter (I) Reflexology (I) Lumbar supports (I) Magnets (I) Routine use of cryotherapies in health care provider offices or home use of high-tech device (I) Diathermy (I) Low-level laser therapy (I) Mechanical devices for administering massage (I) Interferential therapy (I) Taping and kinesiotaping (I) Myofascial release (I) High-voltage galvanic (I) Iontophoresis (I) Adjustments/manipulation (I)

Low Back Disorder	Treatment with Evidence Rating/Recommendation Level		
	Recommended	**No Recommendation**	**Not Recommended**
			Acupuncture (I) Aggressive stretching (I) Strengthening of abdominal muscles (I)
Spondylolisthesis	Lumbar fusion for isthmic spondylolisthesis (C) Lumbar fusion for degenerative spondylolisthesis (C) NSAIDs (I) Acetaminophen if contraindications for NSAIDs (I) Skeletal muscle relaxants as 2nd- or 3rd-line agents for more severe pain (I) Alteration of sleep posture (I) Aerobic exercises (I) Strengthening and stabilization exercises after aerobic exercises instituted (I) Inclusion of FABT during course of rehabilitation (I)	Gabapentin (I) Mattress firmness (I) Other optimal sleeping surfaces (e.g., bedding, water beds, hammocks) (I) Infrared therapy for home use (I) Ultrasound (I) Neuroreflexotherapy (I) Botulinum injections (I)	Bed rest (I) Vitamins (I) Willow bark (salix) (I) Spiroflor (I) Complementary or alternative treatments or dietary supplements, etc., other than those discussed in chapter (I) Reflexology (I) Lumbar supports (I) Magnets (I) Routine use of cryotherapies in health care provider offices or home use of high-tech device (I) Diathermy (I) Low-level laser therapy (I) Mechanical devices for administration of massage (I) Interferential therapy (I) Taping and kinesiotaping (I) Myofascial release (I) High-voltage galvanic (I) Iontophoresis (I) Adjustments/manipulation (I) Acupuncture (I) Aggressive stretching (I) Strengthening of abdominal muscles (I)

Definitions:

Strength of Evidence Ratings

A: Strong evidence-base: Two or more high-quality studies.[1]

B: Moderate evidence-base: At least one high-quality study or multiple moderate-quality studies[2] relevant to the topic and the working population.

C: Limited evidence-base: At least one study of moderate quality.

I: Insufficient evidence: Evidence is insufficient or irreconcilable.

[1]For therapy and prevention, randomized controlled trials (RCTs) with narrow confidence intervals and minimal heterogeneity. For diagnosis and screening, cross sectional studies using independent gold standards. For prognosis, etiology or harms, prospective cohort studies with minimal heterogeneity.

[2]For therapy and prevention, a well-conducted review of cohort studies. For prognosis, etiology or harms, a well-conducted review of retrospective cohort studies or untreated control arms of RCTs.

Recommendation Category	Evidence Rating	Description of Category
Strongly Recommended	**A**	The intervention is strongly recommended for appropriate* patients. The intervention improves important health and functional outcomes based on high quality evidence, and the Evidence-based Practice Panel (EBPP) concludes that benefits substantially outweigh harms and costs.
Moderately Recommended	**B**	The intervention is recommended for appropriate patients. The intervention improves important health and functional outcomes based on moderate quality evidence that benefits substantially outweigh harms and costs.
Recommended	**C**	The intervention is recommended for appropriate patients. There is limited evidence that the intervention may improve important health and functional benefits.

Recommendation Category	Evidence Rating	Description of Category
Insufficient - Recommended (Consensus-based)	**I**	The intervention is recommended for appropriate patients and has nominal costs and essentially no potential for harm.** The EBPP feels that the intervention constitutes best medical practice to acquire or provide information in order to best diagnose and treat a health condition and restore function in an expeditious manner. The EBPP believes based on the body of evidence, first principles, and/or collective experience that patients are best served by these practices, although the evidence is insufficient for an evidence-based recommendation.
Insufficient - No Recommendation (Consensus-based)	**I**	The evidence is insufficient to recommend for or against routinely providing the intervention. The EBPP makes no recommendation. Evidence that the intervention is effective is lacking, of poor quality, or conflicting and the balance of benefits, harms, and costs cannot be determined.
Insufficient – NOT Recommended (Consensus-based)	**I**	The evidence is insufficient for an evidence-based recommendation. The intervention is not recommended for appropriate patients because of high costs/high potential for harm to the patient.
NOT Recommended	**C**	Recommendation against routinely providing the intervention. The EBPP found at least moderate evidence that harms and costs exceed benefits based on limited evidence.
Moderately NOT Recommended	**B**	Recommendation against routinely providing the intervention to eligible patients. The EBPP found at least moderate evidence that the intervention is ineffective, or that harms or costs outweigh benefits.
Strongly NOT Recommended	**A**	Strong recommendation against providing the intervention to eligible patients. The EBPP found high quality evidence that the intervention is ineffective, or that harms or costs outweigh benefits.

* "Appropriate" means meeting screening or preventive method entry criteria without contraindications, or having the appropriate diagnosis, indication, time frame, prior conservative testing or treatment, and lack of contraindications for the specific test or treatment.

** For example, would include acetaminophen and self-administered cold or heat treatments. Excludes all interventional treatments, manual adjustment, and prescriptions medications. Aggregate and individual harms and costs are considered.

CLINICAL ALGORITHM(S)

The following clinical algorithms are provided in the original guideline document:

- Master low back algorithm
- Initial evaluation of acute and subacute low back and radicular pain
- Initial and follow-up management of acute and subacute low back and radicular pain
- Evaluation of subacute or slow-to-recover patients with low back pain unimproved or slow to improve (symptoms >4 weeks)
- Surgical considerations for patients with anatomic and physiologic evidence of nerve root compression and persistent low back symptoms
- Further management of subacute low back pain
- Further management of chronic low back pain

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EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

Where there was not quality evidence, guidance represents a consensus of the Evidence-based Practice Spine Panel.

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IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Low back disorders. Occupational medicine practice guidelines: evaluation and management of common health problems and functional recovery in workers. 2nd ed. Elk Grove Village (IL): American College of Occupational and Environmental Medicine (ACOEM); 2007. 366 p. [1310 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1997 (revised 2007)

GUIDELINE DEVELOPER(S)

American College of Occupational and Environmental Medicine - Medical Specialty Society

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American College of Occupational and Environmental Medicine

GUIDELINE COMMITTEE

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Research Grants/Other Support—NIOSH (CDC) Training grants and research grants primarily on the epidemiology of musculoskeletal disorders (e.g., CTS, shoulder tendinosis, LBP) and truck driver safety; and a grant from the Utah Labor Commission studying cancers among firefighters and police officers

Financial/Non-Financial Conflict of Interest—Honoraria: Teaching honoraria from various courses, mostly ACOEM-related; Consultations: Consulting with companies regarding how to reduce work-related injuries, causation and apportionment of injuries and consultations with unions regarding return to work, work restrictions and work-relatedness on injuries; Clinical: Primary, secondary and tertiary clinical management of occupational injuries and diseases

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Research Grants/Other Support—None

Financial/Non-Financial Conflict of Interest—None

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National, Regional, Local Committee Affiliations—International Association of Injury and Accident Boards and Commissions Committee on Occupational Health and Disability Management; Bylaws Revision Committee, Committee on Workers' Compensation, Committee on Evidence Based Medicine, Steering Committee for Revision of ACOEM Guidelines, ACOEM; Task Force on Chronic Pain, Task Force Complex Regional Pain Syndrome/Reflex Sympathetic Dystrophy, Upper Extremity Task Force on Carpal Tunnel, Cumulative Trauma Disorder and Thoracic Outlet Syndrome, Task Force on Lumbar and Cervical Spine and Lower Extremity, Colorado Division of Workers' Compensation; Workers' Compensation Personal Injury and Workers' Compensation Committee, Colorado Medical Society; Preventive Medicine Residency Advisory Committee, Occupational Medicine Residency Advisory Committee, MSPH Policy Committee, MSPH Curriculum Committee, University of Colorado School of Medicine

Guidelines Related Professional Activities—Section Editor, AMA Guides to Evaluation of Permanent Impairment, 6th Edition; LBP Guideline Subcommittee, American Pain Society/American College of Physicians; Guidelines for State of Colorado; Editorial Board, AMA Guides Newsletter; Adviser/Reviewer, Medical Disability Advisor, 3rd Edition

Research Grants/Other Support—NIOSH Training Grant for Occupational Medicine Residencies, University of Colorado Health Sciences Department of Preventive Medicine

Financial/Non-Financial Conflict of Interest—Received less than $2,000 in honorarium for teaching engagements for ACOEM

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National, Regional, Local Committee Affiliations—Chair, Research Committee of the Canadian Institute for the Relief of Pain and Disability (CIRPD)

Guidelines Related Professional Activities—Member, Guidelines Committee, ACOEM (2nd Edition); Ontario Government Occupational Disease Panel for the Workplace Safety and Insurance Board; and Chair, Standards Committee, Canadian Society of Medical Evaluators

Research Grants/Other Support—None

Financial/Non-Financial Conflict of Interest—None

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Guidelines Related Professional Activities—Chair, Spine Panel, Occupational Medicine Practice Guidelines; (update to 2nd Edition); Associate Editor, APG Insights, ACOEM; Associate Editor, AMA Guides Newsletter; Section Editor, Medical Disability Advisor, 3rd, 4th, 5th Editions; Reviewer, Guides to the Evaluation of Permanent Impairment, 5th Ed.

Research Grants/Other Support—None

Financial/Non-Financial Conflict of Interest—None

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National, Regional, Local Committee Affiliations—Board of Directors, American Academy of Disability Evaluating Physicians; Task Force on Health Care and Access and Affordability, Commonwealth of Kentucky; Board of Directors, Kentucky Foundation for Medical Care; Committee on Professional Liability Insurance, Committee on National Legislative Activities, Committee on Medical Insurance and Prepayment Plans, Kentucky Medical Association; Regional Translational Research Committee and Co-chair Selection Committee for Endowed Research Chair; Board of Directors, Kentucky Medical Insurance Company; Joint Washington Committee of Neurosurgery; Joint Section on Disorders of the Spine and Peripheral Nerves and Spine Task Force

Guidelines Related Professional Activities—Chapter Work Group, AMA's Guides to the Evaluation of Permanent Impairment, 6th Ed.; Editorial Advisory Board, Official Disability Guidelines, ODG Treatment; Advisory Board, ACOEM's APG Insights

Research Grants/Other Support—None

Financial/Non-Financial Conflict of Interest—None

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National, Regional, Local Committee Affiliations—Board, Northwest Occupational and Environmental Medical Association; Resident Advisory Committee, University of Washington, Department of Environmental and Occupational Medicine

Guidelines Related Professional Activities—None

Research Grants/Other Support—None

Financial/Non-Financial Conflict of Interest—None

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Low back complaints. In: Glass LS, editor(s). Occupational medicine practice guidelines: evaluation and management of common health problems and functional recovery in workers. 2nd ed. Elk Grove Village (IL): American College of Occupational and Environmental Medicine (ACOEM); 2004. p. 286-326.

The ACOEM *Guidelines* are currently being updated on a 3-year rolling process.

GUIDELINE AVAILABILITY

Print copies are available from ACOEM, 25 Northwest Point Boulevard, Suite 700, Elk Grove Village, IL 60007; Phone: 847-818-1800. To order a subscription to the online version, call 800-441-9674 or visit http://www.acoempracguides.org/.

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on May 31, 2006. The information was verified by the guideline developer on November 3, 2006. This summary was updated by ECRI Institute on July 29, 2008. The updated information was verified by the guideline developer on August 7, 2008. This summary was updated by ECRI Institute on May 1, 2009 following the U.S. Food and Drug Administration advisory on antiepileptic drugs.

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