Guideline Summary NGC-9520

Guideline Title

Adult acute and subacute low back pain.

Bibliographic Source(s)

Goertz M, Thorson D, Bonsell J, Bonte B, Campbell R, Haake B, Johnson K, Kramer C, Mueller B, Peterson S, Setterlund L, Timming R. Adult acute and subacute low back pain. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2012 Nov. 91 p. [133 references]

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: Institute for Clinical Systems Improvement (ICSI). Adult acute and subacute low back pain. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2012 Jan. 94 p.

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.

- August 1, 2013 – Acetaminophen: The U.S. Food and Drug Administration (FDA) notified healthcare professionals and patients that acetaminophen has been associated with a risk of rare but serious skin reactions. Acetaminophen is a common active ingredient to treat pain and reduce fever; it is included in many prescription and over-the-counter (OTC) products. These skin reactions, known as Stevens-Johnson Syndrome (SJS), toxic epidermal necrolysis (TEN), and acute generalized exanthematous pustulosis (AGEP), can be fatal. These reactions can occur with first-time use of acetaminophen or at any time while it is being taken. Other drugs used to treat fever and pain/body aches (e.g., non-steroidal anti-inflammatory drugs, or NSAIDS, such as ibuprofen and naproxen) also carry the risk of causing serious skin reactions, which is already described in the warnings section of their drug labels.

Scope

Disease/Condition(s)

- Acute and subacute low back pain
- Acute and subacute radiculopathy

Guideline Category

Diagnosis

Evaluation

Management

Rehabilitation

Treatment

Clinical Specialty

Chiropractic

Family Practice

Internal Medicine

Neurology

Obstetrics and Gynecology

Orthopedic Surgery

Physical Medicine and Rehabilitation

Radiology

Sports Medicine

Intended Users

Advanced Practice Nurses

Allied Health Personnel

Chiropractors

Health Care Providers

Health Plans

Hospitals

Managed Care Organizations

Nurses

Occupational Therapists

Physical Therapists

Physician Assistants

Physicians

Guideline Objective(s)

- To improve the evaluation and reevaluation of patients 18 years and older with acute and subacute low back pain diagnosis
- To reduce or eliminate imaging for non-specific low back pain diagnosis in patients 18 years and older in the absence of "red flag" indicators
- To delay imaging in patients with radicular pattern pain until after six weeks to allow for resolution that usually occurs within this period
- To increase the use of a core treatment plan as first-line treatment. This includes activity, heat, education, exercise and analgesics for patients 18 years and older with low back pain diagnosis
- To increase cautious and responsible use of opioids in acute or subacute low back pain
- To increase the utilization of validated pain and function scales to help differentiate treatment approaches in order to improve the patient's ability to function
- To increase the use of collaborative decision-making to allow patients to make more informed decisions about their care, focusing on shared decisions related to imaging, interventions and surgery for radicular pain diagnosis

Target Population

Adult patients age 18 and over in primary care who have symptoms of low back pain or radiculopathy including pregnant women

Note: The guideline focuses on acute (pain for up to 7 weeks) and subacute (pain for between 7 and 12 weeks) phases of low back pain. It includes the ongoing management, including indications for spine specialist referral within the first twelve weeks of onset.

Interventions and Practices Considered

Evaluation

1. History and physical examination
2. Documentation of presence/absence of "red flags"
3. Functional assessment using Oswestry Disability Questionnaire or other scale
4. Pain assessment using visual analog or other pain scale
5. Imaging (not recommended for non-specific low back pain)
6. Reevaluation as needed

Red Flags Considerations

1. Evaluation for cancer, infection, fracture
2. Ruling out cauda equina
3. Consideration of other non-spine pain origins

Treatment/Management

Core Treatment Plan

1. Reassurance
2. Patient education
3. Acetaminophen and non-steroidal anti-inflammatory drugs (NSAIDs)

3. Acetaminophen and non-steroidal anti-inflammatory drugs (NSAIDs)
4. Opioids (cautious and responsible limited use)
5. Muscle relaxants
6. Heat
7. Encouraging activity (bed rest not recommended)
8. Addressing fear-avoidance beliefs
9. Return-to-work assessment

Early Phase Treatment Considerations

1. Use of the core treatment plan
2. Consideration of spinal manipulation therapy; use of the clinical prediction rule
3. Advice on activity/exercise
4. Delayed-recovery risk assessment (not recommended)
5. Rechecking in one to two weeks

Late Acute Phase Treatment Considerations

1. Use of the core treatment plan
2. Focused review of treatment to date
3. Delayed-recovery assessment
4. Focusing on activity/function
5. Referral to medical spine specialist

Subacute Phase Treatment Considerations

1. Use of the core treatment plan
2. Delayed-recovery assessment
3. Progressive exercise plan
4. Referrals to spinal manipulation therapy, cognitive behavioral therapy, work evaluation, or medical spine specialist

Radicular Pain Treatment Considerations

1. Epidural steroid injections
2. Consideration of referral to spine specialist
3. Formal shared decision-making

Major Outcomes Considered

- Number, duration, and intensity of pain episodes and recurrences
- Change in functional status associated with low back pain
- Time required to return to work
- Utilization of health care resources
- Diagnostic accuracy of various imaging techniques including lumbar spine computed tomography, magnetic resonance imaging, and computed tomography myelography
- Patient satisfaction

Methodology

Methods Used to Collect/Select the Evidence

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

A consistent and defined process is used for literature search and review for the development and revision of Institute for Clinical Systems Improvement (ICSI) guidelines. Literature search terms for the current revision of this document include epidural steroid injections, acute low sacral dysfunction, PHQ2, conservative care for cauda equina, conservative treatment for low back pain, diagnostic imaging and low back pain, active rehabilitation, diagnostic imaging for radiculopathy, sacroiliac joint, trigger point injections, facet joint, interventional pain procedures, acupuncture, heat, cold therapy and spinal manipulative therapy in PubMed from May 2011 through June 2012.

In the Grading of Recommendations Assessment, Development and Evaluation (GRADE) process, evidence is gathered related to a specific question. Systematic reviews are utilized first. Further literature is incorporated with randomized control trials or observational studies. The evidence addresses the same population, intervention, comparisons and outcomes. The overall body of evidence for each topic is then given a quality rating.

Number of Source Documents

Not stated

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Quality of Evidence and Strength of Recommendations

Category	Quality Definitions	Strong Recommendation	Weak Recommendation
High Quality Evidence	Further research is very unlikely to change the work group's confidence in the estimate of effect.	The work group is confident that the desirable effects of adhering to this recommendation outweigh the undesirable effects. This is a strong recommendation for or against. This applies to most patients.	The work group recognizes that the evidence, though of high quality, shows a balance between estimates of harms and benefits. The best action will depend on local circumstances, patient values or preferences.
Moderate Quality Evidence	Further research is likely to have an important impact on the work group's confidence in the estimate of effect and may change the estimate.	The work group is confident that the benefits outweigh the risks, but recognizes that the evidence has limitations. Further evidence may impact this recommendation. This is a recommendation that likely applies to most patients.	The work group recognizes that there is a balance between harms and benefit, based on moderate quality evidence, or that there is uncertainty about the estimates of the harms and benefits of the proposed intervention that may be affected by new evidence. Alternative approaches will likely be better for some patients under some circumstances.
Low Quality Evidence	Further research is very likely to have an important impact on the work group's confidence in the estimate of effect and is likely to change. The estimate or any estimate of effect is very uncertain.	The work group feels that the evidence consistently indicates the benefit of this action outweighs the harms. This recommendation might change when higher quality evidence becomes available.	The work group recognizes that there is significant uncertainty about the best estimates of benefits and harms.

Supporting Literature

In addition to evidence that is graded and used to formulate recommendations, additional pieces of literature will be used to direct the reader to other topics of interest. This literature is not given an evidence grade and is instead used as a reference for the associated topic. These citations are found in the references section of this document and noted as "references."

Methods Used to Analyze the Evidence

Review of Published Meta-Analyses

Systematic Review

Description of the Methods Used to Analyze the Evidence

Not stated

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

Guideline Development Process

A work group consisting of 6 to 12 members that includes physicians, nurses, pharmacists, and other healthcare professionals relevant to the topic, along with an Institute for Clinical Systems Improvement (ICSI) staff facilitator, develops each document. Ordinarily, one of the physicians will be the leader. Most work group members are recruited from ICSI member organizations, but if there is expertise not represented by ICSI members, one or two members may be recruited from medical groups, hospitals, or other organizations that are not members of ICSI. Patients on occasion are invited to serve on work groups.

The work group will meet for 7 to 8 three-hour meetings to develop the guideline. A literature search and review is performed and the work group members, under the coordination of the ICSI staff facilitator, develop the algorithm and write the annotations and literature citations.

Once the final draft copy of the guideline is developed, the guideline goes to the ICSI members for critical review.

Revision Process of Existing Guidelines

ICSI scientific documents are revised every 12 to 24 months as indicated by changes in clinical practice and literature. For documents that are revised on a 24-month schedule, ICSI checks with the work group on an annual basis to determine if there have been changes in the literature significant enough to cause the document to be revised earlier or later than scheduled.

For yearly reviewed documents, ICSI checks with every work group 6 months before the scheduled revision to determine if there have been changes in the literature significant enough to cause the document to be revised earlier than scheduled.

Literature Search

ICSI staff, working with the work group to identify any new pertinent clinical trials, systematic reviews, or regulatory statements and other professional guidelines, conduct a literature search.

Revision

The work group will meet for 1 to 2 three-hour meetings to review the literature, respond to member organization comments, and revise the document as appropriate.

A second review by members is indicated if there are changes or additions to the document that would be unfamiliar or unacceptable to member organizations. If a review by members is not needed, the document goes to the appropriate steering committee for approval according to the criteria outlined below.

Rating Scheme for the Strength of the Recommendations

See the "Rating Scheme for the Strength of the Evidence" field.

Cost Analysis

The guideline developers reviewed published cost analyses.

Method of Guideline Validation

Internal Peer Review

Description of Method of Guideline Validation

Critical Review Process

The purpose of critical review is to provide an opportunity for the clinicians in the member groups to review the science behind the recommendations and focus on the content of the guideline. Critical review also provides an opportunity for clinicians in each group to come to consensus on feedback they wish to give the work group and to consider changes necessary across systems in their organization to implement the guideline.

All member organizations are expected to respond to critical review guidelines. Critical review of guidelines is a criterion for continued membership within the Institute for Clinical Systems Improvement (ICSI).

After the critical review period, the guideline work group reconvenes to review the comments and make changes, as appropriate. The work group prepares a written response to all comments.

Document Approval

Each document is approved by the Committee for Evidence-Based Practice (CEBP). The committee will review and approve each guideline/protocol, based on the following criteria:

- The aim(s) of the document is clearly and specifically described.
- The need for and importance of the document is clearly stated.
- The work group included individuals from all relevant professional groups and had the needed expertise.
- Patient views and preferences were sought and included.
- The work group has responded to all feedback and criticisms reasonably.
- Potential conflicts of interest were disclosed and do not detract from the quality of the document.
- Systematic methods were used to search for the evidence to assure completeness and currency.
- Health benefits, side effects, risks and patient preferences have been considered in formulating recommendations.
- The link between the recommendation and supporting evidence is clear.
- Where the evidence has not been well established, recommendations based on community practice or expert opinion are clearly identified.
- Recommendations are specific and unambiguous.
- Different options for clinical management are clearly presented.
- Clinical highlights and recommendations are easily identifiable.
- Implementation recommendations identify key strategies for *health care systems* to support implementation of the document.
- The document is supported with practical and useful tools to ease *clinician* implementation.
- Where local resource availability may vary, alternative recommendations are clear.
- Suggested measures are clear and useful for quality/process improvement efforts.

Once the document has been approved, it is posted on the ICSI Web site and released to members for use.

Recommendations

Major Recommendations

Note from the National Guideline Clearinghouse (NGC) and the Institute for Clinical Systems Improvement (ICSI): For a description of what has changed since the previous version of this guidance, refer to Summary of Changes Report--November 2012. In 2011 ICSI began its transition to the Grading of Recommendations Assessment, Development and Evaluation (GRADE) system as a method of assessing the quality of evidence and writing recommendations.

The recommendations for the management of adult acute and subacute low back pain are presented in the form of a table with a list of evidence-based recommendations and three algorithms with 40 components, accompanied by detailed annotations. Algorithms and the table are provided in the original guideline document. Algorithms are provided for: Core Treatment of Non-Specific Low Back Pain, Red Flags, and Radicular Pain. Clinical highlights and selected annotations (numbered to correspond with the algorithm) follow.

Quality of evidence (Low Quality, Moderate Quality, and High Quality) and strength of recommendation (Weak or Strong)

definitions are repeated at the end of the "Major Recommendations" field.

Clinical Highlights

- Low back pain assessment should include a subjective pain rating, functional status, patient history including notation of presence or absence of "red flags," psychosocial indicators, assessment of prior treatment and response, employment status, and clinician's objective assessment. *(Annotations #2a, 2b; Aims #1, 6)*
- Reduce or eliminate imaging for diagnosis of non-specific low back pain in patients 18 years and older. *(Annotations #11; Aims #2,3)*
- First-line treatment should emphasize patient education and a core treatment plan that includes encouraging activity, use of heat, no imaging, cautious and responsible use of opioids, anti-inflammatory and analgesic over-the-counter medications and return to work assessment. *(Annotation #11; Aims #4,5)*
- Patients with acute or subacute low back pain should be advised to stay active and continue ordinary daily activity as tolerated. *(Annotations #11, 16, 17, 18; Aim #4)*
- Use opioids cautiously and responsibly in the presence of acute or subacute low back pain. *(Annotations #11, 16, 17, 18)*

Core Treatment of Non-Specific Low Back Pain Algorithm Annotations

2a. **Initial Evaluation and Data Set**

Recommendation:

- Clinicians should not recommend imaging (including computed tomography [CT], magnetic resonance imaging [MRI] and x-ray) for patients with non-specific low back pain *[Strong Recommendation, Moderate Quality Evidence]*

For all low back pain, but particularly those with non-specific low back pain, it is important to identify pain intensity and impaired function. The initial exam should document evidence that would suggest the presence or absence of findings that would influence medical decision-making (neurologic deficits, muscle weakness, mental status affecting recovery, comorbid conditions) as well as establish a baseline for future comparisons.

Two tools that have been identified for evaluating and documenting the perceived disability are the Visual Analog Scale and the Oswestry Disability Questionnaire. The Oswestry Disability Questionnaire is used to assess the patient's subjective rating of perceived disability; it helps the clinician address the limitations of function. The Visual Analog Scale quantifies the patient's perception of pain; it helps the provider address the pain and establishes a baseline for future reference. There are many other tools that are acceptable.

In addition, it is also important to consider potential risk factors for delayed recovery. Identification of these risk factors is usually limited in the first two weeks or first two months of symptoms. As symptoms persist to six weeks, this becomes more important. The identifying and quantifying tools may need to be repeated during the course of care. If symptoms are not improving, consider that there may be a wrong diagnosis, a wrong treatment, the patient is not invested in care, or there are alternative non-spine-related factors inhibiting recovery.

History and Exam

The initial history evaluation of low back pain should include the following:

- Pain characteristics – location, character, intensity, exacerbating and alleviating factors and duration – should be noted. Mechanical low back pain may radiate past the knee. This is not by definition radicular and must be correlated with other history and examination before it should be considered as such. If there is any activity associated with the onset, it should also be noted.
- Sensory changes – the specific distribution and character - should be noted.
- Strength changes should be noted. A generalized sense of weakness should be differentiated from focal change such as the ability to dorsal or plantar flex the foot or great toe.
- Job and activity associations should be considered and noted.
- History and review of systems should be sufficient to address the primary red flags as identified in "Presence or absence of red flags documented" later in this section.
- Delayed-recovery risk factors should be considered on the initial visit. Depending on the time from onset of symptoms, this becomes more or less necessary. After even two weeks of severe pain or impairment in function the examiner should start a formal delayed-recovery assessment and consider intervention. See Annotation #17, "Late Acute Phase Treatment Considerations." Prior to two weeks, a focus on fear-avoidance beliefs should be a standard at any initial visit. The Patient Health Questionnaire (PHQ)-2 and PHQ-9 are recommended as tools for screening for the risk of depression; see Appendix A, "Psychosocial Screening and Assessment Tools," in the original guideline document. The clinician may wish to consider using the PHQ-2 at the initial evaluation. Refer to the NGC summary of the ICSI guideline Major Depression in Adults in Primary Care for more information.
- Ask the patient if he or she has any specific questions or expectations from this visit.

Exam Components

- Observation of movements for asymmetry or inconsistency
- Palpation for localized tenderness with percussion
- Range of motion testing
- Neurologic exam focusing on sensation, strength and reflexes with emphasis on the L4, L5 and S1 nerve roots for primary dermatomal mapping and correlation of strength and reflexes and possible nerve root compromise. See Table 1, "Nerve Root Compromise Testing," in the original guideline document for more information.
- Neural tension test (straight leg raise, slump, prone knee bend, femoral stretch) performed bilaterally to assess the mechanics and physiology of the respected neural system. A positive test should reproduce symptoms or associated symptoms. This information should be compared to the opposite side along with history and other objective findings. A positive test can provide only supporting evidence for a nerve root or discogenic pathology. The absence of a positive test is useful in ruling out discogenic source of pain.

- Additional examination including respiratory, gastrointestinal or genital urinary examination recommended as indicated by history. Other examination of joints as indicated by history and initial exam.
- Additional testing such as Waddell's signs to document non-physiologic exam. See Appendix A, "Psychological Screening and Assessment Tools," in the original guideline document for further information.
- Laboratory work dependent on history and examination suggestive of red flags or specific diagnosis associated with low back pain.
- **Imaging is not recommended for non-specific low back pain**.

Presence or Absence of Red Flags Documented

At each visit, evaluate for presence or absence of red flags and document findings. Red flags include the following:

- Risk factors for cancer including age 50 years old or older with a history of cancer, unexplained weight loss and failure to improve after four to six weeks of conservative low back pain therapy. If all three of these risk factors for cancer are absent, studies suggest that cancer can be ruled out with 100% sensitivity.
- Risk factors for possible spinal infection including intravenous drug use, immunosuppression, urinary infection, fever above 38°C (100.4°F) for greater than 48 hours, and history of tuberculosis or active tuberculosis.
- Signs or symptoms of cauda equina syndrome:
  - New onset of urinary incontinence
  - Urinary retention (if no urinary retention, the likelihood of cauda equina syndrome is less than 1 in 10,000)
  - Saddle anesthesia, unilateral or bilateral sciatica, sensory and motor deficits, and abnormal straight leg raising
- Increased risk factors for fragility fracture such as these:
  - Osteoporosis
  - History of steroid use
  - Immunosuppression
  - Serious accident or injury (fall from heights, blunt trauma, motor vehicle accident) – this does not include twisting or lifting injury unless other risk factors are present (e.g., history of osteoporosis)
  - Clinical suspicion of ankylosing spondylitis
  - Drug or alcohol abuse (increased incidence of osteomyelitis, trauma, fracture)
- Unrelenting night pain or pain at rest (increased incidence of clinically significant pathology)
- Consideration of other non-spine origins

Refer to Annotation #25, "Consider Other Non-Spine Pain Origins," in the original guideline document for further information.

Function

The Oswestry Disability Questionnaire is used to assess the patient's subjective rating of perceived disability related to his or her functional limitations (e.g., work status, difficulty caring for oneself). The higher the score the more perceived disability. Using this test at the initial visit helps the examiner understand the patient's perception of how his or her back pain is affecting his or her life. There are two ways that this test aids in the treatment of back pain. A higher score is indicative of the need for more intensive treatment such as spinal manipulative therapy and education to help the patient understand the low likelihood of disability related to back pain. Understanding the low likelihood helps prevent the fear of disability from becoming a barrier to improvement. People with higher disability should be managed more aggressively with a heightened sense of urgency to avoid the negative aspect of prolonged pain and disability. The use of anticipatory guidance and early return to work with appropriate restrictions are important aspects. By tracking these scores, improvement can be documented and monitored.

Pain

The Visual Analog Scale is a numerical pain scale (usually from 0 to 10, with 10 being the worst pain imaginable) that is used to understand the patient's perception of his or her pain severity at its worst and at the current time. It is also used to make decisions regarding treatment needs and to monitor improvement. Patients with a high pain scale need to understand what is being done to improve their pain, including use of manual therapy, medications, exercise and activity restrictions. The management of the patient's pain is an important part of each visit and should be a part of the care plan for recovery. A pain drawing is also recommended to facilitate pain evaluation. Compare the pain diagram to your exam and note consistencies or inconsistencies. Use it to monitor patterns and types of pain as well as to demonstrate change and improvement.

The Roland-Morris Disability Questionnaire is another tool available for pain assessment. See Appendix B in the original guideline document.

2b. **Reevaluation**

Reevaluation of low back pain should include the following:

- Pain reassessed with a repeat Visual Analog Scale and Oswestry Disability Questionnaire
- Sensory changes
- Strength changes
- Job and activity associations considered and noted
- Presence or absence of red flags and psychosocial indicators confirmed
- After two weeks of severe pain or impairment in function, the examiner should start a formal delayed-recovery assessment and consider intervention. See Annotation #17, "Late Acute Phase Treatment Considerations."

6. **Pain Consistent with Radiculopathy by History and Exam?**

Pain radiating past the knee does not constitute radiculopathy. Radiculopathy is defined as pain which is dermatomal; it may or may not be accompanied by sensory or strength deficit or change in reflex. Diffuse or non-organic sensory or strength changes are not considered radicular, and if noted should be treated as non-specific low back pain. However, in rare cases it may represent myelopathy or higher cord lesions.

9. **Severe Pain or Limited Function as Indicated by Oswestry Questionnaire or Visual Analog Scale?**

Oswestry Disability Questionnaire

The Oswestry Disability Questionnaire is used to assess the patient's subjective perception of his or her disability. The higher the score the more perceived disability. Using this test at the initial visit helps the examiner understand the patient's perception of how his or her back pain is affecting his or her life. A higher score is indicative of the need for more intensive treatment such as spinal manipulative therapy and education to help the patient understand the low likelihood of disability related to back pain. Understanding the low likelihood helps prevent the fear of disability from becoming a barrier to improvement.

Visual Analog Scale

Patients with a high pain scale need to understand what is being done to improve their pain including use of spinal manipulative therapy, medications, exercise and activity restrictions. The scale ranges from 0 to 10, with 10 being the worst pain imaginable.

10. **Limited Intervention and Maximized Prevention**

Those individuals who have minimal limitation in function and/or minimal pain typically need education and reassurance and in general have better outcomes. For this reason, the core treatment plan is recommended in the context that intensive treatment is not necessary in this group and may in fact impair recovery. Follow-up typically is not necessary. See Annotation #11, "Core Treatment Plan."

11. **Core Treatment Plan**

Recommendations:

- Clinicians should educate patients as an adjunct to other treatment. No standardized form of education is suggested *[Strong Recommendation, Moderate Quality Evidence]*.
- Non-steroidal anti-inflammatory drugs (NSAIDs) may be used for short-term pain relief in patients with acute and subacute low back pain *[Weak Recommendation, Moderate Quality Evidence]*.
- Muscle relaxants may be used as an option in treating acute low back pain. However, possible side effects should be considered *[Weak Recommendation, Moderate Quality Evidence]*.
- Cautious and responsible use of opioids may be considered for those carefully selected patients with severe acute pain not controlled with acetaminophen and NSAIDs, at a minimum effective dose, for a limited period of time, usually less than one to two weeks *[Strong Recommendation, Low Quality Evidence]*.
- Heat should be used for pain relief *[Strong Recommendation, Moderate Quality Evidence]*.
- Cold therapy is not recommended for low back pain *[Weak Recommendation, Low Quality Evidence]*.
- Clinicians should advise patients with acute and subacute low back pain to stay active and continue activities of daily living within the limits permitted by their symptoms *[Strong Recommendation, Moderate Quality Evidence]*.
- Exercise should be recommended to reduce the recurrence of low back pain. However, no specific exercise is preferred *[Strong Recommendation, Moderate Quality Evidence]*.
- Clinicians should not recommend bed rest for patients with low back pain *[Strong Recommendation, Moderate Quality Evidence]*.
- Clinicians should not prescribe or recommend traction for the treatment of acute low back pain *[Weak Recommendation, Low Quality Evidence]*.
- Clinicians should not recommend imaging (including computed tomography [CT], magnetic resonance imaging [MRI], and x-ray) for patients with non-specific low back pain *[Strong Recommendation, Moderate Quality Evidence]*.

The core treatment plan addresses the need for patient education, reassurance and expectations. Patient satisfaction is dependent on a clear diagnosis with information and instructions on how to handle their low back pain. A care plan should include the following:

- Answers to questions addressed by the patient. In general, this should include discussion of causation and the natural history of low back pain. It may need to include reasons for not ordering tests such as laboratory or imaging.
- Instructions on pain and activity management. Include positional and exercise components as well as work recommendations or limitations.
- Instructions on treatment recommendations including medications and/or therapy recommendations.
- Follow-up and contact information in response to desire for further reassurance or education, and descriptions of specific warning signs, which may require earlier evaluation.

Provide patients with brochures and information that place a greater emphasis on reducing fear and anxiety, promote active self-management and incorporate the following components of care. See Appendix C, "Patient Brochure Example," in the original guideline document.

Reassure

There is a good prognosis for low back pain. The majority of patients experience significant improvements in two to four weeks. Most patients who seek attention for their back pain will improve within two weeks and most experience significant improvement within four weeks.

Approximately two-thirds of the people who recover from a first episode of acute low back symptoms will have another episode within 12 months. Unless the back symptoms are very different from the first episode or the patient has a new medical condition, expect improvement to be similar for each episode.

All patients recovering from back pain should understand that episodes of back pain may recur but can be handled

All patients recovering from back pain should understand that episodes of back pain may recur but can be handled similarly to the one from which they are recovering.

Educate

Clinicians in clinic systems are encouraged to provide primary education through other community education institutions/businesses to develop and make available patient education materials concerning back pain prevention and care of the healthy back. Emphasis should be on patient responsibility, workplace ergonomics, and home self-care treatment of acute low back pain. Employer groups should also make available reasonable accommodations for modified duties or activities to allow early return to work and minimize the risk of prolonged disability. Education is recommended for frontline supervisors in occupational strategies to facilitate an early return to work and to prevent prolonged disabilities. Identify and manage stressors.

Acetaminophen and Non-steroidal Anti-inflammatory Medication

All medications have potential benefits and risks that patients should be aware of. Short-term use of medications (less than two weeks) may reduce some of the risks.

Use over-the-counter short-term acetaminophen or non-steroidal anti-inflammatory drugs (NSAIDs) to help ease the pain and/or inflammation in the lower back. Patients need to be aware that all NSAIDs have a risk of gastritis and gastrointestinal bleed, and possible cardiovascular implications. Acetaminophen has the risk of serious liver disease.

Muscle Relaxants

Muscle relaxants may be useful for short-term relief of acute low back pain. The use of muscle relaxants is an option that needs to be weighed against the possible side effects and contraindications.

Cautious and Responsible Use of Opioids

The consensus opinion of the work group is that the cautious and responsible use of opioids for severe acute and subacute low back pain in carefully selected patients, for limited periods of time (usually less than one to two weeks) may be considered. Clinicians may consider using low potency opioids, using the lowest daily dose possible. Extended release opioids should be avoided if possible in acute back pain patients, especially in opioid naïve patients. Clinicians should always assess risk before ordering opioids. Risk to the patient, but also to the community, should be considered. Opioids should be used only as one part of a comprehensive care plan for the patient with acute and subacute low back pain.

Heat

Apply heat as preferred on the sore area for a short duration in a position of comfort to assist with pain management. Cold therapy is not recommended.

Encourage Activity; Bed Rest Is Not Recommended

Carefully introduce activities as the patient begins to recover from the worst of the back pain episode. Light-duty activities and regular walking are good ways to get back into action. Participate in activity that does not worsen symptoms. Advise to stay active and to continue ordinary activity as normally as tolerated to give faster return to work, less chronic disability and fewer recurrent problems. Patients should also be provided information about effective self-care options. Exercise over no intervention is useful for reducing the rate of low back pain recurrence. Bed rest is not recommended. A gradual return to normal activities is more effective and leads to more rapid improvement with less chronic disability.

Refer to the original guideline document for more information on the above topics and for information about addressing fear-avoidance beliefs (fear of activity) and return-to-work assessment.

No Imaging

The use of imaging including CT, MRI and x-ray is not recommended for non-specific low back pain.

12. **Reassess as Needed**

Instruct the patient to return for the following reasons:

- Pain that doesn't seem to be getting better after two to three weeks
- Pain and weakness traveling down the leg below the knee
- Leg, foot, groin or rectal area feeling numb
- Unexplained fever, nausea/vomiting, stomachaches, weakness or sweating
- Loss of control of urine or stool
- Pain is so intense you can't move around or get comfortable
- Redness or swelling on the back or spine
- Desire for further reassurance or education

16. **Early Acute Phase Treatment Considerations**

Recommendations:

Recommendations in this phase include those found in Annotation #11, "Core Treatment Plan," in addition to the following:

- Spinal manipulative therapy should be considered in the early intervention of low back pain *[Strong Recommendation, Moderate Quality Evidence]*.
- At this point evidence is not sufficient to strongly recommend the clinical prediction rule. However, studies are currently underway which may add further support. Therefore, the work group suggests consideration of the clinical prediction rule in the category of early low back pain patients *[Weak Recommendation, Low Quality Evidence]*.

For those patients who are seen within the first two weeks from onset of symptoms and have severe pain or physical impairment, the following approaches are recommended:

Core Treatment Plan

Refer to Annotation #11, "Core Treatment Plan," for more information.

Consider Spinal Manipulative Therapy: Use Clinical Prediction Rule

The clinical prediction rule is used to identify a subgroup of patients by several criteria (see Table 2, "Clinical Prediction Rule," in the original guideline document). The rule projects successful treatment of low back pain with spinal manipulative therapy at greater than 90%. Although much work has been done related to the clinical prediction rule, at this point, evidence is not sufficient to strongly recommend it. However, studies currently underway may add further support. Therefore, the work group suggests consideration of this rule in this category of early low back pain patients.

No Delayed-Recovery Risk Assessment

Delayed-recovery risk assessment is not typically productive in the first two weeks from onset of symptoms.

Refer to the original guideline document for information about advice on activity/exercise and follow-up.

17. **Late Acute Phase Treatment Consideration**

Recommendation:

Recommendations in this phase include those found in Annotation #11, "Core Treatment Plan," in addition to the following:

- Delayed-recovery assessment is not fully developed; however, much progress has been made and it is recommended that the clinician use one or more approaches to identify a patient who is at risk and intervene with specific interventions *[Weak Recommendation, Low Quality Evidence]*.

Core Treatment Plan

Incorporate core treatment plan into plan of care. See Annotation #11, "Core Treatment Plan," for more information.

If the patient presents with low back pain symptoms for two to six weeks of severe limits in function and/or severe pain, add the following care to the core treatment plan.

Focused Review of Treatment to Date

Complete a focused review of treatment to date to determine successes and failures in treatment modalities thus far.

Delayed-Recovery Assessment

Because the majority of acute low back pain sufferers improve within the first two weeks from onset, it is difficult to identify before this time the 10% to 15% who will experience chronic pain or disability. The period from two to six weeks is a key time to assess for risk factors and if possible, to begin approaches to manage them. Though progress has been made over the last 20 years, this is still an imprecise process. The chart in the original guideline document (page 24) describes three approaches – structured self report, open questions and observation – that can be used to assess risk. Each approach can increase focus and in many situations trigger an intervention plan to address the risk early in the continuum of disability and pain.

Individual risk factors with stronger predictive ability include the following:

- Fear-avoidance beliefs
- Catastrophizing
- Somatization
- Depressed mood
- Distress and anxiety
- Early disability or decreased function
- High initial pain levels
- Increased age
- Radiation of pain
- Poor general health status
- Non-organic signs

Consider Referral to Medical Spine Specialist

Choice of the trained professional will be determined by availability and preference of individual medical providers and organization systems. The patient and/or clinician should request a trained non-surgical spine specialist who demonstrates competency in providing therapies for patients with low back pain based on effective techniques supported by literature, as outlined in this guideline. These therapies include education, exercise programs and appropriate use of manipulative therapies. The specialist should also be conversant in risk assessment and intervention as well as the process of shared decision-making. See Annotation #18, "Subacute Phase Treatment Considerations," for more information.

Refer to the original guideline document for additional information on late acute phase treatment considerations.

18. **Subacute Phase Treatment Consideration**

Recommendations:

Recommendations in this phase include those found in Annotation #11, "Core Treatment Plan," in addition to the following:

- Delayed-recovery risk assessment is not fully developed; however, much progress has been made and it is recommended that the clinician use one or more approaches to identify a patient who is at risk and intervene with specific interventions *[Weak Recommendation, Low Quality Evidence]*.
- Exercise is recommended in the treatment of subacute low back pain *[Strong Recommendation, Moderate Quality*

Evidence].

- Spinal manipulative therapy should be considered in the early intervention of low back pain *[Strong Recommendation, Moderate Quality Evidence]*.
- Clinicians should consider cognitive behavioral therapy in the treatment of subacute low back pain *[Weak Recommendation, Moderate Quality Evidence]*.
- Acupuncture may be used as an adjunct treatment for subacute low back pain *[Weak Recommendation, Low Quality Evidence]*.

Core Treatment Plan

Initiate or continue the core treatment plan. See Annotation #11, "Core Treatment Plan," for further information.

Delayed-Recovery Assessment

Refer to Annotation #17, "Late Acute Phase Treatment Considerations," above and in the original guideline document for further information.

Progressive Exercise Plan

The use of a progressive exercise program in the treatment of subacute low back pain is supported. Progressive exercise is based on a number of variables that include but are not limited to increasing physical activity, education regarding pain and an exercise program that is graded with a de-emphasis on pain.

Consider Referrals

- Spinal manipulative therapy
- Cognitive behavioral therapy
- Work evaluation
- Medical spine specialist

Refer to the original guideline document for more information on the above topics.

19. **Chronic Low Back Pain**

The treatment of chronic back pain falls out of this guideline. See the NGC summary of the ICSI Assessment and Management of Chronic Pain guideline for more information.

Red Flags Algorithm Annotations

20. **Evaluate for Infection**

Uncommon but serious causes for back pain include infection. A spinal infection such as vertebral osteomyelitis or spinal epidural abscess can give chronic back pain with fever. Plain spinal films and MRI may be necessary for diagnosis. Tuberculosis of the spine is well known but uncommon (in the West) as a cause for back pain. Pyelonephritis causes back pain, which is localized to the affected side. Risk factors for infectious causes for back pain include immunocompromised status, diabetes, human immunodeficiency virus (HIV) infection, tuberculosis and intravenous drug abuse history. Clues to the diagnosis include fever and a gradual onset of symptoms as well as symptoms unrelated to mechanical movement.

Specific treatments exist for all bacterial causes for back pain. Consider blood work if infection is suspected. Consultation with a surgeon may be indicated for suspected bony infection.

21. **Evaluate for Cancer**

Recurrent metastatic cancer must be considered in all cases of back pain in cancer survivors. Cancers frequently metastatic to the spine include breast, lung, gut, prostate, renal and thyroid. Clues to the diagnosis include a gradual onset of symptoms and a history of cancer.

22. **Evaluate for Fracture**

Recommendation:

- Imaging may be considered for low back pain when fracture is suspected *[Strong Recommendation, Moderate Quality Evidence]*.

Fracture of a vertebral body is an uncommon cause of back pain, which is seen in only a few settings. Fracturing a vertebra in an otherwise healthy person requires major incidents such as a fall from a height or a motor vehicle accident. Conversely, in a person whose bones are compromised due to steroid use or osteoporosis, minimal (or even unrecognized) trauma is sufficient to cause fracture and back pain. An x-ray is a diagnostic tool that can rule out fracture.

24. **Rule Out Cauda Equina**

All patients with back pain should be asked about urinary retention. Those reporting this symptom should be examined for bilateral leg weakness, depressed leg deep tendon reflexes and perineal numbness. These patients may report bowel, bladder and sexual dysfunction, and severe pain. This syndrome is rare but catastrophic and requires urgent surgical consultation.

25. **Consider Other Non-Spine Pain Origins**

Two percent of low back pain is due to visceral disease including but not limited to the following:

- Disease of pelvic organs (prostatitis, endometriosis, chronic pelvic inflammatory disease)
- Renal disease (nephrolithiasis, pyelonephritis, perinephric abscess)
- Aortic aneurysm
- Gastrointestinal disease
- Pancreatitis

- Cholecystitis
- Penetrating ulcer
- Cardiac or pericardial disease
- Pulmonary or pleural disease

Pregnancy

Low back pain, alone or in combination with pelvic pain, is a common problem suffered by women during pregnancy. The typical course of low back pain during pregnancy is that it generally begins in the mid-late second trimester, resolves during the postpartum period and, unfortunately, is likely to return in subsequent pregnancies.

The clinical history and physical examination should include elements that focus on the mother and the fetus, and the medical care provider should consider a broad differential. The physical examination is similar to non-pregnant patients with low back pain, although lumbar flexion will be limited as the pregnancy progresses. The gravid abdominal examination can be challenging.

Lumbar radiographs are routinely avoided during pregnancy due to concern for fetal health. Magnetic resonance imaging is the test of choice for severe pregnancy-related low back pain.

According to a Cochrane review, effective treatment of pregnancy-related low back pain, as measured by pain reduction and back-pain-related sick leave, included strengthening exercises, sitting pelvic tilt exercises and water gymnastics.

Radicular Pain Algorithm Annotations

28. **No Imaging First Six Weeks with Radicular Pain; Use Core Treatment Plan**

Recommendation:

- Clinicians should not recommend imaging (including CT, MRI or x-ray) for patients in the first six weeks of radicular pain *[Strong Recommendation, Moderate Quality Evidence]*.

Most patients with radiculopathy supported by exam findings consistent with history will recover within several weeks of onset. The majority of disc herniations regress or reabsorb by eight weeks from onset. In the absence of red flags or progressive neurologic deficit there is no evidence that the delaying surgery worsens outcomes. The use of the core treatment plan is recommended. Refer to Annotation #11, "Core Treatment Plan."

With this in mind, in the face of radiculopathy there is no benefit and there is possible harm in obtaining an MRI prior to six weeks. The exception to this is a progressing neurologic deficit or persistent disabling pain.

If the patient has demonstrable leg weakness that is disabling or is worsening, further evaluation with imaging and consultation with a spine specialist would also be indicated.

31. **Additional Reevaluation as Needed; Use Shared Decision-Making Tools in Discussing Options of Imaging, Epidurals of Continuing Core Treatment Plan**

Recommendations:

- Imaging should be done to rule out underlying pathology or for those who are considering surgery including epidural steroid injections *[Strong Recommendation, Moderate Quality Evidence]*.
- Epidural steroid injections may be used for acute low back pain with a radicular component to assist with short-term pain relief *[Weak Recommendation, Moderate Quality Evidence]*.

For selection of type of imaging please see Appendix G, "Magnetic Resonance Imaging (MRI) and Computed Tomography (CT) Guidelines," in the original guideline document.

When further evaluation options such as imaging and epidurals can be considered, a clinician/surgeon-centric approach to the recommendation of and decision about having these done should be discussed collaboratively through shared decision-making. Shared decision-making is the process by which a health care clinician communicates to the patient personalized information about available treatment options, their outcomes and potential benefits and harms. The patient communicates his or her values and the relative importance he or she places on benefits and harms. With this sharing of information the clinician and patient have a better basis for communication, and the result is a high quality decision with better patient investment. There are now a variety of resources (see Appendix H, "Shared Decision-Making Tools and Resources," in the original guideline document for more information) that can help facilitate a high-quality decision matched to patient preferences. The expected benefit is that of higher patient satisfaction with the quality of the decision made.

Epidural Steroid Injections

Consider epidural steroid injections after initial appropriate conservative treatment program. How long to wait until offering an injection is a matter of clinical judgment. For instance, in cases of severe symptoms, injections are often performed earlier in the treatment course. If the patient responds to the epidural steroid injection it may allow him or her to advance in a non-surgical treatment program and avoid surgery. It is generally agreed that if possible, epidural steroid injections should not be used as a monotherapy. Patients should be made aware of the general risks of short-term and long-term use of steroids – particularly temporary alterations in glucose control.

It is now considered standard of care to perform the injections under image guidance and with contrast in order to deliver the injectate as close to the disc herniation, area of stenosis, or nerve root impingement as determined by advanced imaging.

There are three approaches to the epidural space: interlaminar, transforaminal and caudal. The different approaches allow the treatment to be tailored to the needs of the individual.

Procedural morbidity is extremely low and also varies with each approach. With interlaminar injections there is a potential risk of intrathecal injection. If this occurs, a small fraction (<1%) of patients may develop a post-procedural dural leak headache. These nearly always resolve spontaneously with conservative treatment within 48 hours. In the past there was also concern about arachnoiditis with this approach. It is believed that this occurred due to preservatives formerly used in the steroid and saline preparations. Preservative-free preparations should be used to avoid this potential complication. With the transforaminal approach, patients may report worsening of radicular symptoms for several days after the injection. This is believed to occur from either the volume of injectate

symptoms for several days after the injection. This is believed to occur from either the volume of injectate compressing an already inflamed nerve or a reaction to the steroid. There is no risk of post dural puncture headache with this approach. There is, however, an extremely small but very real risk of spinal cord infarction leading to permanent spinal cord injury. With each of the three approaches – caudal, transforaminal and interlaminar – there is the typical risk of bleeding, infection, and nerve damage. Again, the risk is much less one in ten thousand. Patients should be informed of the possible risks that could occur using each of the three approaches.

Patient Selection for Epidurals

- Patients typically have symptoms of radicular pain. Examination findings for radiculopathy (reflex changes, possible motor weakness, and root tension signs) need not be present. In addition, the pain should be of a severity that significantly limits function and quality of life, and that has not responded to oral analgesic medications and other conservative care measures.
- Advanced imaging is required – either magnetic resonance imaging or computerized tomography to rule out other causes of pain (e.g., infection, cancer).
- Steroid injections should not be given for two weeks following the flu vaccine. Also wait for one month after a steroid injection to receive the flu vaccine. Therapeutic corticosteroid injections may temporarily suppress the body's immune response and may compromise the ability to develop the expected immune protection from a flu vaccine. This is based on recommendations from the Centers for Disease Control and Prevention and the International Spine Intervention Society.
- Patients should have no contraindications to an injection, including these:
  - No signs or symptoms of active infection either systemically or locally.
  - No history of bleeding disorders or current use of anticoagulants such as warfarin or clopidogrel. Epidural injections carry a higher risk of bleeding. Patients taking antithrombotics have an increased risk, and the standard of care should be followed. Guidelines have been developed to limit the risk. Assessment of the risk versus benefit should be done prior to the procedure. Consult with the individual performing the procedure for appropriate anticoagulation guidelines.
- Patients with non-anaphylactic reaction to iodine-based contrast may still be treated. Consult with the provider performing the procedure. Those with documented anaphylaxis to iodine-based contrast can be treated with a non-iodine based contrast such as gadolinium.
- No allergies to local anesthetic agents, contrast agents, or corticosteroids.
- No prior complications to corticosteroid injections.
- Pregnancy is a contraindication due to the use of fluoroscopy.
- Use caution in diabetic patients because of altered glycemic control, which is typically transient. Patients with diabetes need to be informed and aware that their blood glucose levels will rise and alterations in sliding scales will likely be needed.
- Patients with congestive heart failure need to be aware of steroid-induced fluid retention.
- Though NSAID use is not a contraindication to injections, some practitioners discontinue NSAIDs several days prior to injection.

37. **Reevaluate Biomechanics and Treatment**

Continue to stress a progressive exercise program, appropriate body mechanics and general healthy lifestyle (see Annotation #11, "Core Treatment Plan," for more information).

38. **Recurring Symptoms?**

No Recurrence

If there is no recurrence of symptoms, advise patient to continue the core treatment plan with emphasis on exercise as a preventive measure.

Less Than 12 Weeks since Onset of Symptoms

Individuals with more severe functionally limiting recurrence may require additional diagnostic and therapeutic measures including referral to a specialist. See Annotation #40, "Consider Referral to Spine Specialist; Initiate Formal Shared Decision-Making," for more information.

Greater Than 12 Weeks since Onset of Symptoms

Recurrent low back pain persisting beyond three months falls outside of this guideline. Please see the NGC summary of the ICSI Assessment and Management of Chronic Pain guideline for more information.

40. **Consider Referral to Spine Specialist; Initiate Formal Shared Decision-Making**

Shared Decision-Making

Shared decision-making is a process still being explored for low back pain. Many communities have limited resources for referral, and tools for the primary care clinician may not be readily available. For this reason the committee recommends this integrative and collaborative approach with the understanding that the concept is still in development and does not have a sufficient evidence base for a strong recommendation. Please see Appendix I, "ICSI Shared Decision-Making Model," in the original guideline document for further information. Referral to a medical spine specialist for discussion about potential surgery is suggested.

Medical Spine Specialist

Indications for referral include these:

- Failure to make improvement with the core treatment plan after two weeks
- Severe incapacitating and disabling back or leg pain
- Significant limitation of functional or job activities
- Elevated delayed-recovery risk

- Elevated delayed recovery risk
- Situations where collaborative or shared decision-making is appropriate, e.g., persistent neuromotor deficit after four to six weeks of conservative treatment (this does not include minor sensory changes or reflex changes).

Refer to the original guideline document for indications for specialty referral and the surgical spine specialist.

Definitions:

Quality of Evidence and Strength of Recommendations

Category	Quality Definitions	Strong Recommendation	Weak Recommendation
High Quality Evidence	Further research is very unlikely to change the work group's confidence in the estimate of effect.	The work group is confident that the desirable effects of adhering to this recommendation outweigh the undesirable effects. This is a strong recommendation for or against. This applies to most patients.	The work group recognizes that the evidence, though of high quality, shows a balance between estimates of harms and benefits. The best action will depend on local circumstances, patient values or preferences.
Moderate Quality Evidence	Further research is likely to have an important impact on the work group's confidence in the estimate of effect and may change the estimate.	The work group is confident that the benefits outweigh the risks, but recognizes that the evidence has limitations. Further evidence may impact this recommendation. This is a recommendation that likely applies to most patients.	The work group recognizes that there is a balance between harms and benefit, based on moderate quality evidence, or that there is uncertainty about the estimates of the harms and benefits of the proposed intervention that may be affected by new evidence. Alternative approaches will likely be better for some patients under some circumstances.
Low Quality Evidence	Further research is very likely to have an important impact on the work group's confidence in the estimate of effect and is likely to change. The estimate or any estimate of effect is very uncertain.	The work group feels that the evidence consistently indicates the benefit of this action outweighs the harms. This recommendation might change when higher quality evidence becomes available.	The work group recognizes that there is significant uncertainty about the best estimates of benefits and harms.

Supporting Literature

In addition to evidence that is graded and used to formulate recommendations, additional pieces of literature will be used to direct the reader to other topics of interest. This literature is not given an evidence grade and is instead used as a reference for the associated topic. These citations are found in the references section of the original guideline document and noted as "references."

Clinical Algorithm(s)

Detailed and annotated clinical algorithms are provided in the original guideline document for:

- Core Treatment of Non-Specific Low Back Pain
- Red Flags
- Radicular Pain

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for selected recommendations (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

Appropriate medical evaluation, treatment, and management of low back pain in adults, including:

- Increased use of a core treatment plan as a first-line approach
- Reduced use of imaging
- Improved evaluation and reevaluation of adult patients with acute and subacute low back pain
- Cautious and responsible use of opioids
- Increased utilization of validated pain and function scales
- Increased use of collaborative decision-making

Potential Harms

Acetaminophen and Non-steroidal Anti-inflammatory Medication

- All non-steroidal anti-inflammatory drugs (NSAIDs) have a risk of gastritis and gastrointestinal bleed, and possible cardiovascular implications.
- Acetaminophen has the risk of serious liver disease.

Epidural Steroid Injection

- Caution should be used in diabetic patients because of altered glycemic control which is typically transient. Patients with diabetes need to be informed and aware that their blood glucose levels will rise and alterations in sliding scales will likely be needed.
- Patients with congestive heart failure need to be aware of steroid-induced fluid retention.
- Epidural injections carry a higher risk of bleeding. Patients taking antithrombotics have an increased risk, and the standard of care should be followed. Assessment of the risk versus benefit should be done prior to the procedure.
- With interlaminar injections there is a risk of intrathecal injection and subsequent post-procedural dural leak headaches. In the past there was also concern about arachnoiditis with this approach. It is believed that this occurred due to preservatives formerly used in the steroid and saline preparations. Preservative-free preparations should be used to avoid this potential complication. With the transforaminal approach, patients may report worsening of radicular symptoms for several days after the injection. This is believed to occur from either the volume of injectate compressing an already inflamed nerve or a reaction to the steroid. There is also an extremely small but very real risk of spinal cord infarction leading to permanent spinal cord injury. With each of the three approaches – caudal, transforaminal and interlaminar – there is the typical risk of bleeding, infection, and nerve damage. The risk is much less than one in ten thousand.
- Steroid injections should not be given for two weeks following the flu vaccine. Also wait for one month after a steroid injection to receive the flu vaccine. Therapeutic corticosteroid injections may temporarily suppress the body's immune response and may compromise the ability to develop the expected immune protection from a flu vaccine.

Computed Tomography (CT)

CT myelography is invasive, and invokes the risk of allergic reaction to contrast and post-myelographic headache.

Contraindications

Contraindications

- Contraindications to fluoroscopy include pregnancy.
- Contraindications to steroid injections include patients with signs and symptoms of active infection either systemically or locally; history of bleeding disorders or current use of anticoagulants such as warfarin or clopidogrel; allergies to local anesthetic agents, contrast agents, or corticosteroids; prior complications to corticosteroid injections.
- Though non-steroidal anti-inflammatory drug (NSAID) use is not a contraindication to injections, some practitioners discontinue NSAIDs several days prior to injection.

Qualifying Statements

Qualifying Statements

- The information contained in this Institute for Clinical Systems Improvement (ICSI) Health Care Guideline is intended primarily for health professionals and other expert audiences.
- This ICSI Health Care Guideline should not be construed as medical advice or medical opinion related to any specific facts or circumstances. Patients and families are urged to consult a health care professional regarding their own situation and any specific medical questions they may have. In addition, they should seek assistance from a health care professional in interpreting this ICSI Health Care Guideline and applying it in their individual case.
- This ICSI Health Care Guideline is designed to assist clinicians by providing an analytical framework for the evaluation and treatment of patients, and is not intended either to replace a clinician's judgment or to establish a protocol for all patients with a particular condition.
- The Adult Acute and Subacute Low Back Pain guideline work group has listed advantages for both computed tomography (CT) and magnetic resonance imaging (MRI) and a list of conditions for each. This list is not meant to be comprehensive but to aid the clinician in making a decision.

Implementation of the Guideline

Description of Implementation Strategy

Once a guideline is approved for general implementation, a medical group can choose to concentrate on the implementation of that guideline. When four or more groups choose the same guideline to implement and they wish to collaborate with others, they may form an action group.

In the action group, each medical group sets specific goals they plan to achieve in improving patient care based on the particular guideline(s). Each medical group shares its experiences and supporting measurement results within the action group. This sharing facilitates a collaborative learning environment. Action group learnings are also documented and shared with interested medical groups within the collaborative.

Currently, action groups may focus on one guideline or a set of guidelines such as hypertension, lipid treatment, and tobacco cessation.

Detailed measurement strategies are presented in the original guideline document to help close the gap between clinical practice and the guideline recommendations. Summaries of the measures are provided in the National Quality Measures Clearinghouse (NQMC).

Implementation Tools

Chart Documentation/Checklists/Forms

Clinical Algorithm

Patient Resources

Quality Measures

Quick Reference Guides/Physician Guides

Resources

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Related NQMC Measures

- Adult acute and subacute low back pain: percentage of patients with low back pain diagnosis who have all of the following at the initial visit with the physician: pain assessment using the Visual Analog Scale, pain diagram or other assessment tool; functional status using the Oswestry Disability Questionnaire or other assessment tool; patient history, including notation of presence or absence of "red flags"; assessment of prior treatment and response; job and activity association; and psychosocial screening that includes depression and chemical dependency screening.
- Adult acute and subacute low back pain: percentage of patients with low back pain diagnosis who have a reassessment at each follow-up visit that includes: pain assessment using the Visual Analog Scale, pain diagram or other assessment tool; functional status using the Oswestry Disability Questionnaire or other assessment tool; clinician's objective assessment; and psychosocial screening that includes depression and chemical dependency screening.
- Adult acute and subacute low back pain: percentage of patients with a diagnosis of non-specific back pain for whom the physician ordered imaging studies during the six weeks after pain onset, in the absence of "red flags."
- Adult acute and subacute low back pain: percentage of patients with non-specific back pain diagnosis who received inappropriate repeat imaging studies in the absence of "red flags" or progressive symptoms.
- Adult acute and subacute low back pain: percentage of patients with radicular pain for whom the clinician ordered imaging studies during the six weeks after pain onset.
- Adult acute and subacute low back pain: percentage of patients with low back pain diagnosis who are prescribed opioids.
- Adult acute and subacute low back pain: percentage of patients with low back pain diagnosis who have their functional status assessed using the Oswestry Disability Questionnaire or other assessment tool.
- Adult acute and subacute low back pain: percentage of patients with low back pain diagnosis who have their pain status assessed using the Visual Analog Scale, pain diagram or other assessment tool.
- Adult acute and subacute low back pain: percentage of patients with non-specific low back pain diagnosis who have had collaborative decision-making with regards to referral to a specialist.
- Adult acute and subacute low back pain: percentage of patients with radicular pain diagnosis who have had collaborative decision-making with regards to imaging, intervention and/or surgery.
- Adult acute and subacute low back pain: percentage of patients who were advised on maintenance or resumption of activities, against bed rest, use of heat, education on importance of active lifestyle and exercise, and recommendation to take anti-inflammatory or analgesic medication in the first six weeks of pain onset in the absence of "red flags."

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

Living with Illness

IOM Domain

Effectiveness

Patient-centeredness

Identifying Information and Availability

Bibliographic Source(s)

Goertz M, Thorson D, Bonsell J, Bonte B, Campbell R, Haake B, Johnson K, Kramer C, Mueller B, Peterson S, Setterlund L, Timming R. Adult acute and subacute low back pain. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2012 Nov. 91 p. [133 references]

Adaptation

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

Date Released

1994 Jun (revised 2012 Nov)

Guideline Developer(s)

Institute for Clinical Systems Improvement - Nonprofit Organization

Guideline Developer Comment

Organizations participating in the Institute for Clinical Systems Improvement (ICSI): Affiliated Community Medical Centers; Allina Medical Clinic; Aspen Medical Group; Baldwin Area Medical Center; Brown Clinic; Center for Diagnostic Imaging/Medical Scanning Consultants; CentraCare; Central Lakes Medical Clinic; Chippewa County – Montevideo Hospital & Clinic; Cuyuna Regional Medical Center; Essentia Health; Fairview Health Services; Family HealthServices Minnesota; Family Practice Medical Center; Fergus Falls Medical Clinic; Gillette Children's Specialty Healthcare; Grand Itasca Clinic and Hospital; Hamm Clinic; HealthEast Care System; HealthPartners Central Minnesota Clinics; HealthPartners Medical Group & Regions Hospital; Hennepin County Medical Center; Hennepin Faculty Associates; Howard Young Medical Center; Hudson Physicians; Hutchinson Area Health Care; Hutchinson Medical Center; Integrity Health Network; Lake Region Healthcare Corporation; Lakeview Clinic; Mankato Clinic; MAPS Medical Pain Clinics; Marshfield Clinic; Mayo Clinic; Mercy Hospital and Health Care Center; Midwest Spine Institute; Minnesota Association of Community Health Centers; Minnesota Gastroenterology; Multicare Associates; New Richmond Clinic; North Central Heart Institute; North Clinic; North Memorial Health Care; Northwest Family Physicians; Obstetrics and Gynecology Specialists; Olmsted Medical Center; Park Nicollet Health Services; Planned Parenthood Minnesota, North Dakota, South Dakota; Quello Clinic; Raiter Clinic; Rice Memorial Hospital; Ridgeview Medical Center; River Falls Medical Clinic; Riverwood Healthcare Center; South Lake Pediatrics; Southside Community Health Services; Stillwater Medical Group; University of Minnesota Physicians; Winona Health

ICSI, 8009 34th Avenue South, Suite 1200, Bloomington, MN 55425; telephone, (952) 814-7060; fax, (952) 858-9675; e-mail: icsi.info@icsi.org; Web site: www.icsi.org.

Source(s) of Funding

- The Institute for Clinical Systems Improvement (ICSI) provided the funding for this guideline. The annual dues of the member medical groups and sponsoring health plans fund ICSI's work. Individuals on the work group are not paid by ICSI, but are supported by their medical group for this work.
- ICSI facilitates and coordinates the guideline development and revision process. ICSI, member medical groups, and sponsoring health plans review and provide feedback but do not have editorial control over the work group. All recommendations are based on the work group's independent evaluation of the evidence.

Guideline Committee

Adult Acute and Subacute Low Back Pain Work Group

Composition of Group That Authored the Guideline

Work Group Members: Michael Goertz, MD, MPH (*Work Group Leader*) (HealthPartners Medical Group) (Preventive and Occupational Medicine); David C. Thorson, MD (*Work Group Leader*) (Entira Family Clinics) (Sports Medicine and Family Medicine); Robb Campbell, MD, MPH (3M) (Occupational Medicine); Becky Mueller, DO (CentraCare) (Family Medicine and Sports Medicine); Jeff Bonsell, DC (HealthPartners Medical Group and Regions Hospital) (Chiropractic Medicine); Bret Haake, MD (HealthPartners Medical Group and Regions Hospital) (Neurology); Richard Timming, MD (HealthPartners Medical Group and Regions Hospital) (Physical Medicine and Rehabilitation); Brian Bonte, DO (Hutchinson Medical Center) (Family Medicine); Steve Peterson, PT (Orthopaedic Sports, Inc.) (Physical Therapy); Chris Kramer, PT, DPT, OCS, FAAOMPT (Park Nicollet Health Services) (Physical Therapy); Kari Johnson, RN (Institute for Clinical Systems Improvement [ICSI]) (Clinical Systems Improvement Facilitator); Linda Setterlund, MA, CPHQ (ICSI) (Clinical Systems Improvement Facilitator)

Financial Disclosures/Conflicts of Interest

The Institute for Clinical Systems Improvement (ICSI) has long had a policy of transparency in declaring potential conflicting and competing interests of all individuals who participate in the development, revision and approval of ICSI guidelines and protocols.

In 2010, the ICSI Conflict of Interest Review Committee was established by the Board of Directors to review all disclosures and make recommendations to the board when steps should be taken to mitigate potential conflicts of interest, including recommendations regarding removal of work group members. This committee has adopted the Institute of Medicine Conflict of Interest standards as outlined in the report Clinical Practice Guidelines We Can Trust (2011).

Where there are work group members with identified potential conflicts, these are disclosed and discussed at the initial work group meeting. These members are expected to recuse themselves from related discussions or authorship of related recommendations, as directed by the Conflict of Interest committee or requested by the work group.

The complete ICSI policy regarding Conflicts of Interest is available at the ICSI Web site.

Disclosure of Potential Conflicts of Interest

Jeffrey Bonsell, DC (Work Group Member)

Chiropractor, Preferred Chiropractic, HealthPartners Medical Group and Regions Hospital

National, Regional, Local Committee Affiliations: None

Guideline Related Activities: Counsel for Chiropractic Guideline and Practice Parameters Acute and Chronic Low Back Pain guideline Task Force member

Research Grants: None

Financial/Non-Financial Conflicts of Interest: None

Brian Bonte, DO (Work Group Member)

Physician, Family Medicine, Hutchinson Medical Center

National, Regional, Local Committee Affiliations: None

Guideline Related Activities: None

Guideline Related Activities: None

Research Grants: None

Financial/Non-Financial Conflicts of Interest: None

Robb Campbell, MD, MPH (Work Group Member)

Senior Occupational Physician, Occupational Medicine, 3M

National, Regional, Local Committee Affiliations: None

Guideline Related Activities: None

Research Grants: None

Financial/Non-Financial Conflicts of Interest: Owns stock with GlaxoSmithKline and Intuitive Surgical

Michael Goertz, MD, MPH (Work Group Co-Leader)

Physician, Preventive Medicine and Occupational Medicine, HealthPartners Medical Group and Regions Hospital

National, Regional, Local Committee Affiliations: Serves on the advisory committee for American College of Occupational and Environmental Medicine

Guideline Related Activities: ICSI Management of Chronic Pain Guideline

Research Grants: None

Financial/Non-Financial Conflicts of Interest: None

Bret Haake, MD (Work Group Member)

Neurology Department Head, Assistant Medical Director of Neuroscience, HealthPartners Medical Group and Regions Hospital

National, Regional, Local Committee Affiliations: None

Guideline Related Activities: None

Research Grants: None

Financial/Non-Financial Conflicts of Interest: None

Chris Kramer, PT, DPT, OCS, FAAOMPT (Work Group Member)

Physical Therapist, Park Nicollet Health Systems

National, Regional, Local Committee Affiliations: None

Guideline Related Activities: None

Research Grants: None

Financial/Non-Financial Conflicts of Interest: Payment for development of education presentation from the University of Minnesota Physical Therapy program and St. Kate's Physical Therapy program for the topic of spinal manipulation

Becky Mueller, DO (Work Group Member)

Physician, Family Medicine/Sports Medicine, CentraCare

National, Regional, Local Committee Affiliations: None

Guideline Related Activities: None

Research Grants: None

Financial/Non-Financial Conflicts of Interest: None

Steve Peterson, PT (Work Group Member)

Clinic Manager, OSI Physical Therapy

National, Regional, Local Committee Affiliations: None

Guideline Related Activities: ICSI Headache Guideline work group

Research Grants: None

Financial/Non-Financial Conflicts of Interest: None

Dave Thorson, MD (Work Group Co-Leader)

Medical Director, Sports Medicine and Family Medicine, Entira Family Clinics

National, Regional, Local Committee Affiliations: Board member for the Minnesota Medical Association Trustees and the Midwest Medical Insurance Company.

Guideline Related Activities: American Academy of Family Practice Commission of Health of Public and Science guideline group.

Research Grants: None

Financial/Non-Financial Conflicts of Interest: None

Richard Timming, MD (Work Group Member)

Physician, Physical Medicine and Rehabilitation, HealthPartners Medical Group and Regions Hospital

National, Regional, Local Committee Affiliations: None

Guideline Related Activities: ICSI Management of Chronic Pain Guideline work group

Research Grants: None

Financial/Non-Financial Conflicts of Interest: None

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: Institute for Clinical Systems Improvement (ICSI). Adult acute and subacute low back pain. Bloomington (MN): Institute for Clinical Systems Improvement (ICSI); 2012 Jan. 94 p.

Guideline Availability

Electronic copies: Available from the Institute for Clinical Systems Improvement (ICSI) Web site.

Print copies: Available from ICSI, 8009 34th Avenue South, Suite 1200, Bloomington, MN 55425; telephone, (952) 814-7060; fax, (952) 858-9675; Web site: www.icsi.org; e-mail: icsi.info@icsi.org.

Availability of Companion Documents

The following is available:

- Adult acute and subacute low back pain. Executive summary. Bloomington (MN): Institute for Clinical Systems Improvement; 2012 Nov. 1 p. Electronic copies: Available from the Institute for Clinical Systems Improvement (ICSI) Web site.

Print copies: Available from ICSI, 8009 34th Avenue South, Suite 1200, Bloomington, MN 55425; telephone, (952) 814-7060; fax, (952) 858-9675; Web site: www.icsi.org; e-mail: icsi.info@icsi.org.

In addition, the following questionnaires and assessment tools are available in the appendices of the original guideline document:

- Psychosocial Screening and Assessment Tools, including the Patient Health Questionnaire (PHQ)-2 and PHQ-9
- Roland-Morris Disability Questionnaire (RDQ)
- Fear-Avoidance Beliefs Questionnaire
- The Keele STarT Back Screening Tool and Scoring System
- Örebrö Musculoskeletal Pain Screening Questionnaire (ÖMPSQ)
- Magnetic Resonance Imaging (MRI) and Computed Tomography (CT) Guidelines

Patient Resources

An example patient brochure is provided in Appendix C of the original guideline document.

Please note: This patient information is intended to provide health professionals with information to share with their patients to help them better understand their health and their diagnosed disorders. By providing access to this patient information, it is not the intention of NGC to provide specific medical advice for particular patients. Rather we urge patients and their representatives to review this material and then to consult with a licensed health professional for evaluation of treatment options suitable for them as well as for diagnosis and answers to their personal medical questions. This patient information has been derived and prepared from a guideline for health care professionals included on NGC by the authors or publishers of that original guideline. The patient information is not reviewed by NGC to establish whether or not it accurately reflects the original guideline's content.

NGC Status

This summary was completed by ECRI on June 30, 1999. The information was verified by the guideline developer on August 4, 1999. This summary was updated by ECRI on October 13, 2000 and January 8, 2002. This summary was updated on March 14, 2003. The updated information was verified by the guideline developer on May 15, 2003. This summary was updated again on April 26, 2004 and October 13, 2004. This summary was updated by ECRI on January 12, 2005 following the release of a public health advisory from the U.S. Food and Drug Administration regarding the use of some non-steroidal anti-inflammatory drug products. This summary was updated on April 15, 2005 following the withdrawal of Bextra (valdecoxib) from the market and the release of heightened warnings for Celebrex (celecoxib) and other nonselective non-steroidal anti-inflammatory drugs (NSAIDs). This summary was updated by ECRI on June 16, 2005, following the U.S. Food and Drug Administration advisory on COX-2 selective and non-selective non-steroidal anti-inflammatory drugs (NSAIDs). This NGC summary was updated by ECRI Institute on October 20, 2005, December 5, 2006, and April 14, 2009. This summary was updated by ECRI Institute on May 1, 2009 following the U.S. Food and Drug Administration advisory on antiepileptic drugs. This NGC summary was updated by ECRI Institute on April 1, 2011, May 25, 2012, and February 8, 2013. This summary was updated by ECRI Institute on October 28, 2013 following the U.S. Food and Drug Administration advisory on Acetaminophen.

Copyright Statement

Disclaimer

NGC Disclaimer

The National Guideline Clearinghouse™ (NGC) does not develop, produce, approve, or endorse the guidelines represented on this site.

All guidelines summarized by NGC and hosted on our site are produced under the auspices of medical specialty societies, relevant professional associations, public or private organizations, other government agencies, health care organizations or plans, and similar entities.

Guidelines represented on the NGC Web site are submitted by guideline developers, and are screened solely to determine that they meet the NGC Inclusion Criteria which may be found at http://www.guideline.gov/about/inclusion-criteria.aspx.

NGC, AHRQ, and its contractor ECRI Institute make no warranties concerning the content or clinical efficacy or effectiveness of the clinical practice guidelines and related materials represented on this site. Moreover, the views and opinions of developers or authors of guidelines represented on this site do not necessarily state or reflect those of NGC, AHRQ, or its contractor ECRI Institute, and inclusion or hosting of guidelines in NGC may not be used for advertising or commercial endorsement purposes.

Readers with questions regarding guideline content are directed to contact the guideline developer.