



Clinical Best Practices: Acute Low Back Pain

Introduction

Acute low back pain is one of the leading reasons for all physician visits in the United States. “It is estimated that up to 84 percent of adults have low back pain at some time in their lives.”¹

There is much evidence that supports a conservative approach for most episodes of acute low back pain, and many guidelines to support these approaches. As chiropractic physicians, we know that functional limitations, pain reduction and recurrences, and the costs associated with acute low back pain can frequently be minimized with appropriate chiropractic treatment, including but not limited to, spinal manipulation, physical therapy modalities, exercise and patient education.

As a clinically integrated physician network, we strive to improve quality of care, treatment outcomes, and the delivery of cost-efficient healthcare. To achieve these goals, in part, HNS has and continues to develop “best practices” and has developed these best practices for the diagnosis and management of acute low back pain in patients 18 years of age or older.

The term “Best Practice” is somewhat ambiguous but is often used to indicate what institutions, and well regarded practitioners are doing. In short, a best practice is a method or practice that conventional wisdom suggests, *is effective and will reliably lead to desired and/or improved outcomes.*

The creation of these best practices was under the purview of the 2019 HNS’ Professional Affairs Advisory Boards (PAAB). The PAABs are comprised of more than seventy chiropractic physicians practicing in North and South Carolina. The PAABs were charged with identifying previously published clinical guidelines for inclusion in these best practices and for recommending additional clinical guidelines that, based on clinical experience, are likely to improve treatment outcomes while ensuring clinical autonomy.

While many of these best practices are evidenced-based, in areas where there was disagreement between the evidenced-based guideline and the opinion of the physicians serving on the PAABs, the opinion of the PAAB is duly noted.

Because HNS largely agrees with the clinical guidelines published in *Clinical Practice Guideline: Chiropractic Care of Low Back Pain* (Journal of Manipulative and Physiological Therapies. January 2016), many of these are included in these best practices.

In 2020, HNS' physician advisory boards will develop additional best practice guidelines for low back patients presenting with radicular symptoms.

HNS would like to recognize and thank Dr. Richard M. Pavelock for his review and input regarding these best practices. Dr. Pavelock serves as HNS' Chief Medical Officer and is board-certified in Internal Medicine, and is a certified Medical Director.

Statement of Intent:

The treatment recommendations that follow are intended for the "typical" adult patient presenting with acute low back pain. These best practices are not intended to serve or be construed as a "standard of care" for each patient nor to be used as a substitute for the independent judgement of the chiropractor. Adherence to these guidelines will not ensure a successful outcome for every patient. There are other acceptable methods of evaluation and treatment aimed for the same result. The decision to utilize a particular assessment, clinical procedures or treatment plan must be made by the chiropractor in light of the clinical data presented by the patient, the diagnostic and treatment options available, and the patient's preferences and values.

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For the purpose of these guidelines, acute low back pain is considered to be of 6 weeks duration or less.

II. Assessment

A thorough assessment of patients presenting with acute low back pain is essential. The assessment should focus, in part, on the presence or absence of red flags, and will determine the appropriate pathway of care for each patient.

The history and examination provide the clinical rationale for appropriate diagnosis and subsequent treatment planning. The history and physical examination should attempt to separate individuals with acute low back pain into one of the three categories below, in order to determine the appropriate treatment strategy.

- Serious pathology (red flags)
- Radicular nerve involvement
- Mechanical low back pain

Assessment should include, but is not limited to, the following:

- History (Presence or red and/or yellow flags)
- Functional Deficit Measurement
- Examination
- Imaging and other diagnostic testing (as applicable)
- Consideration of coordination of care/referrals

A. History

A carefully obtained history inevitably yields critical information in the assessment of acute low back pain, and should include:

- Onset and duration of pain
- Site and radiation
- Precipitating and relieving factors
- Severity and functional impact
- Neurological deficits
- Symptoms of systemic illness
- Current and past health conditions, including previous injuries
- Family medical history

- Social history
- Current and relevant past medications (both prescriptive, over-the-counter and natural products)
- Past and present treatment for the presenting condition and results of that treatment.
- Previous relevant imaging studies (or other diagnostic testing).
- All health risk factors.

During the history, obtain the name of the patient’s primary care provider and/or medical specialist, and permission to contact in order to facilitate coordination of care.

1. Red Flags

A focused history taking is the most critical tool for identifying risk factors for serious disease (red flags) in a patient who presents with acute low back pain. “Red flags” are the current clinical features and prior illnesses that warn of a possible specific cause which may lead to serious problems unless it is treated immediately.

At each visit, DCs should evaluate for the presence or absence of red flags. Identification of a red flag in patients with acute low back pain warrants close attention, and suggests the need for further investigation and possible specialist referral as part of overall treatment strategy.

While positive red flags are typically indications for imaging, red flags should be evaluated in the context of the clinical presentation as a whole.

Red Flags symptoms²: Low back pain = **TUNA FISH**

- T** - Trauma
- U** - Unexplained Weight Loss
- N** - Neurologic symptoms
- A** - Age >55 years

- F** - Fever
- I** - IV drug use
- S** – Steroid use
- H** - History of cancer

Red Flags: **Cancer**

- History of cancer

- Unexplained weight loss >10 kg within 6 months (22lbs)
- Age over 50 years or under 18 years old
- Failure to improve with therapy
- Pain persists for more than 4 to 6 weeks
- Night pain or pain at rest

Red Flags: **Vertebral Fracture**

- Prolonged use of corticosteroids
- Age greater than 70 years
- History of Osteoporosis
- Mild trauma over age 50 years (or with Osteoporosis)
- Recent significant trauma at any age

Red Flags: **Infection**

- Persistent fever (temperature over 100.4 F)
 - Poor test sensitivity for spinal infection
- History of intravenous drug abuse
- Severe Pain
- Lumbar Spine surgery within the last year
- Recent bacterial infection
 - UTI or pyelonephritis
 - Cellulitis
 - Pneumonia
 - Wound (e.g. Decubitus Ulcer) in spine region
- Immunocompromised states
 - Systemic corticosteroids
 - Organ transplant
 - Diabetes Mellitus
 - HIV
 - Rest Pain

Red Flags: **Cauda Equina Syndrome**

- Urinary Incontinence or retention
- Saddle anesthesia
- Anal sphincter tone decreased or fecal incontinence
- Bilateral lower extremity weakness or numbness
- Progressive neurologic deficit
 - Major motor weakness
 - Major sensory deficit

Fig 1. Red Flag Symptoms: Low Back Pain.²

2. Yellow Flags

While the presence of red flags indicates the potential for serious life or limb threatening pathology, psychosocial risk factors (yellow flags) include the patient's attitudes and beliefs, emotions, behaviors, and family and work place factors.

In the *Guide to Assessing Psycho-social Yellow Flags in Acute Low Back Pain*, Kendall and Linton state:

The goal of identifying yellow flags is to find factors that can be influenced positively to facilitate recovery and prevent or reduce long-term disability and work loss. This includes identifying both the frequent unintentional barriers, and the less common intentional barriers to improvement.³

Per the article, *Management of people with acute low back pain: model of care*,⁴ yellow flags include:

- Belief that pain and activity are harmful
- Sickness behaviors
- Low or negative moods, mental illness
- Treatment that does not fit with best practice
- Problems with compensation system
- Previous history of back pain with time off work
- Problems at work, poor job satisfaction
- Overprotective family or lack of social support⁴

HNS agrees that:

When relevant psychological factors are identified, the rehabilitation approach should be modified to emphasize active rehabilitation, graded exercise programs, positive reinforcement of functional accomplishments, and/or graduated exposure to specific activities that a patient fears as potentially painful or difficult to perform.⁵

As with red flags, DCs should evaluate yellow flags in the context of the clinical presentation as a whole.

3. Functional Deficit Measurement (Baseline Outcome Assessment)

The importance of a patient's perspective regarding his/her condition relative to function, pain, health status, work disability, and

effectiveness of treatment is well-known and should be established prior to the onset of treatment.

As Globe states in *Chiropractic Care of Low Back Pain*⁶:

For a trial of care to be considered beneficial, it must be substantive, meaning that a definite improvement in the patient's functional capacity has occurred. Examples of acceptable outcome assessment tools include the following:

- a. Pain scales such as the Visual Analog Scale and the numeric rating scale.
- b. Pain diagrams that allow the patient to demonstrate location and character of their symptoms.
- c. Validated ADL measures, such as the Revised Oswestry Back Disability Index, Roland Morris Back Disability Index, and Bournemouth Disability Questionnaire.
- d. Increases in home and leisure activities, in addition to increases in exercise capacity.
- e. Increases in work capacity or decreases in prior work restrictions.
- f. Improvement in validated functional capacity testing, such as lifting capacity, strength, flexibility and endurance.⁶

B. Examination:

The examination is intended to identify the etiology of the patient's presenting complaints. The history should focus the extent and region of the examination.

Key aspects of the physical examination in patients with acute low back pain include:

- Observations (e.g., patient's posture, gait, demeanor, pain behavior)
- Palpation, including structural abnormalities, tenderness, muscle spasticity, etc.)
- Appropriate chiropractic tests including spinal palpation findings
- Relevant orthopedic and neurological tests
- Consideration of imaging studies and other diagnostic tests

Acute low back pain is often nonspecific and therefore cannot be attributed to a definite cause. Careful history-taking and physical examination are crucial in attempting to diagnose the underlying cause and in determining the most appropriate pathway to treatment.

C. Diagnostic Testing

Imaging and other diagnostic tests are indicated in the presence of severe and/or progressive neurologic deficiencies or if the history and physical examination cause suspicion of serious underlying pathology.

HNS notes the existence of studies which show that routine imaging or other diagnostic tests are not recommended for patients with **non-specific low back pain**.² It is the position of the HNS Professional Affairs Advisory Boards, however, that clinical decision-making regarding the appropriateness of all diagnostic testing (particularly x-rays) should be determined by the chiropractor in light of the clinical data presented by the patient, the diagnostic and treatment options available, and the patient's preferences and values.

For a very thorough review of clinical indications for the appropriate utilization of spinal imaging, refer to Bussieres, et al. *Diagnostic Imaging Practice Guidelines for Musculoskeletal Complaints in Adults*. J Manipulative Physiol Ther. 2008;31(1).

1. Imaging

The following types of imaging modalities are most frequently used in the diagnostic process:

- a. Plain film or digital radiographs
- b. CT
- c. MRI
- d. Spine Bone Scan
- e. Ultrasound

Plain X-rays

In *Assessment and Management of Acute Low Back Pain*, Bratton indicates there is evidence that plain radiographs are not necessary in the initial evaluation of acute low back pain within the first month unless a finding from the history and clinical examination raises concern.⁷

CT/MRI

CT and MRI testing should be considered only after a careful review of the history and results of the physical examination, and/or in response to treatment.

Polansky states in *Diagnosing Acute Low Back Pain*⁸:

CT and MRI scans of the lumbosacral spine are more sensitive than plain films but are generally only indicated for

patients with acute back pain if clinical findings suggest possible emergent conditions affecting the spine, including but not limited to, Cauda Equina Syndrome, infection, fracture with neurologic deficits, and tumors.

- CT is superior to MRI for revealing bony abnormalities and may be particularly useful if plain films are abnormal or inconclusive.
- MRI is preferred to CT because it provides better visualization of non-bony structures, and does not subject the patients to radiation.⁸

Bone scans

Bone scans are used to detect and monitor infection, fracture, or disorders in the bone.

Ultrasound imaging

Ultrasound imaging (sonography), uses high-frequency sound waves to obtain images inside the body. Ultrasound imaging can show tears in ligaments, muscles, tendons, and other soft tissue masses in the back.

2. Other Diagnostic Tests

As with imaging studies, other diagnostic tests, including but not limited to electrodiagnostic and laboratory tests, should be considered only after careful review of the history and results of the physical examination, and in response to treatment.

Electrodiagnostics

Electrodiagnostics are primarily used to confirm whether a person presenting with acute low back pain has lumbar radiculopathy. The procedures include electromyography (EMG), nerve conduction studies (NCS), and evoked potential (EP) studies.

Laboratory tests

There is evidence that indicates laboratory tests are generally not necessary in the initial evaluation of acute low back pain.

In American Family Physician's *Assessment and Management of Acute Low Back Pain*, Bratton states:

Laboratory tests generally are not necessary in the initial evaluation of acute low back pain. If tumor or infection is suspected, a complete blood cell count and erythrocyte

sedimentation rate should be obtained. Other blood studies, such as testing for HLA-B27 antigen (present in ankylosing spondylitis) and serum protein electrophoresis (results in abnormal multiple myeloma), are not recommended unless clinically warranted. Additional laboratory tests, such as urinalysis, should be tailored to the possible diagnosis suggested by the history and physical findings.⁷

Acute low back pain is often nonspecific and therefore cannot be attributed to a definite cause. Careful history-taking and physical examination are crucial in attempting to diagnose the underlying cause and in determining the most appropriate pathway to treatment.

D. Coordination of Care/Referral

1. Primary Care

Coordination of care with primary care providers and/or medical specialists should be considered.

2. Specialty Care

Specialty referral should be considered for potential surgical candidates, those for whom the diagnosis is uncertain, or those unresponsive to treatment.

As noted in the Institute for Clinical Systems Improvement, *Adult Acute and Subacute Low Back Pain*⁹:

Indications for specialty referral may include the following:

Medical spine specialist

- Atypical chronic leg pain
- Chronic pain syndrome
- Ruling out inflammatory arthropathy
- Ruling out fibrositis/fibromyalgia
- Ruling out metabolic bone disease (e.g., osteoporosis)

Surgical spine specialist:

- Cauda Equina Syndrome
- Progressive or moderately severe neuromotor deficit (e.g., foot drop or functional muscle weakness such as hip flexion weakness or quadriceps weakness)

- Persistent neuromotor deficit after four to six weeks of conservative treatment (does not include minor sensory changes or reflex changes)
- Uncontrolled radicular pain with defined lesion on imaging⁹

III. Education

Patient education and managing the patient's expectations are an important part of the treatment of acute low back pain. Successful treatment depends on the patient's understanding of the condition and his/her role in recovery and in avoiding re-injury.

Acute low back pain often creates a new concerns, even fear about their short and long-term health. It is important to address both these concerns and to establish reasonable patient expectations. DCs should educate patients regarding their condition, and their role and responsibility in achieving a positive outcome, and should help manage patient expectations.

Prior to initiating treatment, it is essential to provide the patient with clear, concise information regarding their condition, the treatment recommended, the anticipated length of treatment, the anticipated outcome, and his/her role in helping to achieve the desired outcome. Additionally, information on the causes of back pain, pain resolution, usual activity/work, prevention strategies, when to contact the DC, and, as applicable, when referral may be appropriate is also helpful.

At a minimum, education should include these points:

- Acute low back pain is a symptom and, in most situations, does not indicate serious disease.
- Patients should take responsibility for, and actively participate in, the rehabilitation process.
- Stress the importance of staying active, and continuing daily activities as normally as possible.
- Emphasize the importance of compliance to the treatment plan.
- Review what symptoms to watch for and when to contact the chiropractic physician.

IV. Treatment Plan

Once a diagnosis has been established based on the history and clinical exam findings for each episode of acute low back pain, an individualized treatment plan should be established. The treatment plan should include specific treatment goals, which are objective, measurable and reasonable, and intended to improve a functional deficit.

As Globe states in *Chiropractic Care of Low Back Pain*, “One of the goals of any treatment plan should be to reduce the frequency of treatments to the point where maximum therapeutic benefit continues to be achieved while encouraging more active self-therapy, such as independent strengthening and range of motion and rehabilitative exercises.”⁶

Each treatment plan should:

- Be based on HNS’ Philosophy of Care: “Treat and Release”; provide care to correct the presenting condition, bring the patient to maximum medical improvement, and discharge the patient from active care with appropriate instructions regarding maintenance/supportive care, self-care and prevention of future occurrences.
- Include all recommended treatment, including but not limited to, manipulations, modalities/therapies, DME.
- Include recommended activity modifications and home care instructions.
- Include anticipated duration of treatment, including frequency of visits. (Should not exceed approximately 4 weeks or 12 office visits, whichever occurs first.)
- Include objective measures to evaluate treatment effectiveness.
- Include expected outcomes.
- Reference obstacles to recovery and strategies to overcome them.
- Be modified, as needed, in response to changes to the patient’s condition.

V. Consent

Prior to initiating treatment for any condition, informed consent must be obtained from the patient, and written evidence consent was given must be included in the healthcare record.

Physicians must keep in mind that informed consent is a process, and involves making sure the patient understands the proposed treatment, the risks of the treatment, and agrees to accept both. To assure an appropriate level of patient understanding, the process should involve discussion and should always include an opportunity for the patient to ask questions.

VI. Treatment Frequency and Duration

While some patients may respond more quickly, a typical course of treatment for acute low back pain is 6 to 12 chiropractic sessions over the course of 2 to 4 weeks.

Although most patients respond within expected time frames, frequency and duration of treatment may be influenced by factors, including but not limited to, co-morbidities, yellow flags and patient compliance to the treatment plan (including recommendations regarding activity modification and home care instructions). Depending on these factors, additional time and treatment may be needed.

After each course of treatment, the patient should be evaluated regarding the effectiveness of treatment, whether maximum therapeutic benefit has been reached, and to determine the appropriateness of additional chiropractic treatment.

VII. Initial Course of Treatment

The goals of treatment for acute low back pain are to relieve pain, improve function, reduce time away from work, and develop strategies to prevent recurrence.

During the initial phase of treatment of acute low back pain, the decision regarding treatment must be made in light of the clinical data presented by the patient, the diagnostic and treatment options available, and the patient's values and expectations.

During the initial course of treatment, DCs should continue to evaluate for the presence or absence of red flags.

The following are treatment considerations for the typical patient presenting with acute low back care.

As noted by the Institute for Clinical Systems Improvement in *Adult Acute and Subacute Low Back Pain*, "After two weeks of severe pain or impairment in function, the examiner should start a formal delayed-recovery assessment and consider intervention."⁹

A. Activity Modification

Patients should be advised to maintain normal activities, as tolerated, during the acute stage of low back pain and should progressively increase their physical activity levels according to a plan agreed upon between the DC and the patient.

“Among patients with acute low back pain, continuing ordinary activities within the limits permitted by the pain leads to more rapid recovery than either bed rest or back-mobilizing exercises.”¹⁰

B. Therapeutic Modalities and Therapeutic Procedures

In conjunction with spinal manipulation, therapeutic modalities/procedures may provide therapeutic benefit and or reduction in pain in the treatment of patients with acute low back pain. These include but are not limited to, ice/heat, electrical stimulation, laser treatment, ultrasound treatment, decompression, acupuncture, and transcutaneous electrical nerve stimulation.

“Cold packs and superficial heat are useful for relieving symptoms of acute low back pain. These modalities provide analgesia and muscle relaxation. However, their use should be limited to the first two to four weeks after the injury.”¹¹

As soon as clinically appropriate, consideration should be given to moving from passive therapies to active therapies in an effort to increase function and return the patient to regular activities.

C. Manipulation/Mobilization.

HNS agrees with the following clinical guideline in *Chiropractic Care of Low Back Pain* which is described below:

Most literature regarding spinal manipulation for low back pain is based on high velocity, low-amplitude (HVLA) techniques, and mobilization, such as flexion-distraction. Therefore, in the absence of contraindications, these methods are generally recommended. However, best practices for individualized patient care, based on clinical judgment and patient preference, may require alternative clinical strategies for which the evidence of effectiveness may be less robust.⁶

The decision regarding the use of HVLA or instrument-adjusting should be based on clinical judgment, experience, and patient preference.

1. Cautions and Contraindications

In certain cases, the appropriateness of manipulative procedures must be considered.

In some complex cases where biomechanical, neurological, or vascular structure or integrity is compromised, the clinician may need to modify or omit the delivery of manipulative procedures. Chiropractic co-management may still be appropriate using a

variety of treatments and therapies commonly used by DCs. It is prudent to document the steps taken to minimize the additional risk that these conditions may present.⁶

VIII. Reevaluation

As noted in section VI. (Treatment Frequency and Duration), it is not uncommon for patients with acute low back pain to require 6 to 12 chiropractic sessions over the course of 2 to 4 weeks. A focused reevaluation should be performed after an initial course of care (4 weeks or 12 visits, whichever comes first).

As part of the reevaluation, and throughout the treatment, DCs must remain watchful for the appearance of red flags.

Outcome assessments for pain and function should be utilized at each reevaluation (and throughout the course of care) in order to determine the effectiveness of care, to evaluate as to whether maximum therapeutic benefit has been reached, and to determine the appropriateness of additional chiropractic care.

Reevaluation of low back pain should include the following:

- Pain reassessed with a repeat VAS and appropriate disability outcome assessment measures
- Repeat of positive chiropractic, orthopedic and neurological findings from previous evaluation
- As applicable, recommendations regarding modifications to activities/work

The results of the reevaluation should guide clinical decision-making regarding the next steps in care and should be clearly explained to the patient.

IX. Continuing Course of Treatment

If maximum therapeutic benefit is not reached during the initial course of care, and provided there is clear evidence that substantive, measurable function gain has occurred, a follow up course of treatment may be warranted. During this phase of care, patients should be encouraged to return to usual activity levels.

The decision regarding continued treatment, and the frequency of it, largely depends on the severity and duration of the condition and whether the patient has reached maximum therapeutic benefit.

1. Maximum Therapeutic Benefit

Maximum Therapeutic Benefit occurs when a patient with an illness or injury reaches a state where additional, objective, measurable improvement cannot reasonably be expected from additional treatment and/or when a treatment plateau in a person's healing process is reached.

HNS refers to (and agrees with) the following clinical guideline included in *Chiropractic Care of Low Back Pain*:

When the patient's condition reaches a plateau or no longer shows ongoing improvement, a decision must be made on whether the patient will need to continue treatment. Generally, progressively longer trials of therapeutic withdrawal may be useful in ascertaining whether therapeutic gains can be maintained without treatment.⁶

2. Exacerbation/Flare-ups

As indicated in *Chiropractic Care of Low Back Pain*:

Additional chiropractic care may be indicated in cases of exacerbation/flare-up in patients who have previously reached MTB if criteria to support such care (substantive, measurable prior functional gains with recurrence of functional deficits) have been established.⁶

X. Summary

These best practices were created for the HNS physician network (and other key stakeholders) and summarize HNS' practice recommendations for the chiropractic management of adult patients with acute low back pain. They are intended to improve treatment quality and outcomes, and to promote the delivery of cost-efficient chiropractic care.

In a value-based healthcare environment, there is a vast difference between merely treating someone versus delivering best practices. The essential step for improving clinical outcomes is to provide the most effective care for every patient on every visit. Timely clinical outcomes, cost effective management, and high patient satisfaction are the key metrics to which all physicians should aspire.

XI. References

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