Low back pain is very common, up to 90+% of people are affected by back pain at some time in their lives. Most often back pain is benign and self-limiting. A good history and physical exam is the best diagnostic tool available to separate the benign low back pain from a threatening problem. Recurrences and functional limitations can be minimized with appropriate conservative management, including medications, physical therapy modalities (superficial heat, cold packs and massage), exercise, and patient education. Radiographs and lab tests are generally unnecessary, except in the few patients in whom a serious cause is suspected, based on history and exam. In the absence of findings suggestive of systemic disease, imaging is rarely necessary until after 6 weeks of conservative therapy. Surgical evaluation is indicated in patients with worsening neurologic deficits or intractable pain resistant to conservative treatments.

**Symptoms which indicate a need for prompt assessment by a practitioner include:**

- Persistent unexplained fever.
- Recent significant trauma; milder trauma if over age 50.
- Unrelenting night pain or pain at rest. Pain that is positional or changes with movement is mechanical, and usually does not represent a systemic problem.
- Complaints appearing neurological in nature (i.e. limb weakness or numbness) should be examined and reassessed in a reasonable period of time (7-10 days unless the patient reports more rapid changes) to assess for progressive deficit.
- Loss of bowel or bladder control (retention or incontinence) or saddle sensory loss as this may represent cauda equina syndrome, which does require a timely surgical consult.

**X-rays of the spine are usually not indicated at the time of the initial episode. Imaging studies (plain x-ray, MRI, CT scan) should not be performed prior to 4 weeks (28 days per the HEDIS recommendation) of the initial episode except in the following instances:**

- Persistent unexplained fever.
- Recent significant trauma; milder trauma if over age 50.
- Severe non-mechanical back pain (i.e. pain at rest and in all positions especially at night).
- History of suspected malignancy, unexplained weight loss, etc.
- History of IV drug use, heavy alcohol use.
- History of immunosuppression.
- History of osteoporosis or prolonged corticosteroid use.
- Age greater than 70 years.
- Persistent pain for more than 4-6 weeks, not changing for the better with treatment outlined below.
***Usually an AP and lateral x-ray view is sufficient for screening purposes. The 5-view series is used to look primarily at conditions causing spine instability which would usually be treated by a specialist***

**Initial history and physical is critical to classify complaints into the following categories:**

- Acute low back pain (pain present less than 3 month duration).
- Chronic low back pain.
- Acute radicular pain: “sciatica” is radicular pain of one nerve root (S1). Other nerve roots can cause other pain patterns.
- Chronic radicular pain.

If x-rays are not indicated, or if indicated but do not reveal a serious problem, patients need reassurance and conservative management at home. Normal x-rays and a normal sedimentation rate effectively rule out the diagnosis of malignancy or infection in almost all patients.

The history and physical by the primary care provider will assess the patient’s general health and sort out systemic problems (i.e. malignancy or infection from mechanical causes). Providers should assess for neurologic involvement and follow this with physical exams for progression. Assess for emergent problems (i.e. cauda equina syndrome or ruptured aortic aneurysm). This is critical for appropriate referral if needed.

**A thorough musculoskeletal exam should include:**

- Palpation for tenderness, heat, erythema.
- Muscle strength assessment and comparison of both sides- hip flexors, knee extensors, ankle plantar and dorsi-flexors or great toe dorsi-flexors are important (a good way to assess plantar flexion strength is to have the patient walk on their toes; or on their heels to test dorsi-flexion of the ankle).
- Assessment of reflexes at the knees and ankles as well as sensory testing.

Note: Pain with straight leg raising is indicative of sciatic nerve irritation and of radiculopathy. Reduction of this pain with serial testing is good evidence of reduction of nerve root irritation.

Patients call groin pain (where the hip joint usually refers) and buttock pain (where the spine usually refers) “hip pain”. It is critical to sort this out before ordering hip x-rays. If putting the hip joint through a passive range of motion in the supine position does not reproduce or cause pain, the source of pain is not likely the hip joint. A hip x-ray is NOT needed.

**Treatment of Acute Mechanical Low Back Pain**

- Reassurance - 90+% of back pain resolves on its own with analgesics, normalizing movement and activities, and time. Imaging studies or surgery is rarely needed.
- OTC analgesics and NSAIDS.
- Heat packs or ice packs - whichever provides the most comfort.
• Limit activity for a few days – but no absolute bed rest for more than a day or two. Generally walking is good for the muscles and spine. A comfortable position is often supine with hips flexed and knees flexed while lying over a chair or sofa.
• Gradual return to usual activities.
• If significant pain persists more than a week, symptoms worsen, or if no improvement is noted, patient needs to be reassessed. Physical therapy may be helpful at this time.

**Treatment of Acute Lumbar Radiculopathy**

• Treatment is the same as treatment of acute mechanical low back pain, although prescription pain medicines (including narcotics) may also be indicated. Muscle relaxants may also be helpful.
• Patients need to be educated that this condition takes time to resolve. Over 90% of radiculopathies heal as well without, as with surgery.
• These patients are generally in a lot of pain. If the patient does not obtain significant relief within a reasonable amount of time a referral to physical therapy or a specialist may be indicated.
• Oral steroids can be given to patients who do not have contraindications.
• Practitioners referring patients to physical therapy should instruct the patient that appointments for physical therapy are to be viewed as a learning opportunity. The long term goal is to learn home exercises.
• When ordering physical therapy, modalities may be used judiciously (i.e. hot packs, e-stim, ultrasound) but similar effects can be obtained by modalities at home. The most valuable service the therapist has to offer is an extensive knowledge of exercise programs, positioning, and education about spine care. Whether a spine extension or flexion program is ordered depends on what the patient finds comfortable. If spine extension hurts more, then an extension program should not be done. Usually, disc herniation in younger people responds best to a spine extension program (McKenzie) but in older people with spinal stenosis, extension worsens their symptoms and flexion programs (Williams) should be utilized.
• If physical therapy provides no relief in 4-6 sessions, the treatment plan should be changed or the treatment should be discontinued. Once a patient is recovering, the therapist’s main job is to advance the exercise program. This can be accomplished by seeing the patient once or twice a week, or even less frequently.
• The best positions/activities for patients with acute radiculopathies are those which are comfortable. Patients should gradually return to activities as their condition improves.
• Chiropractic treatment would be reasonable to consider. If the patient does not notice relief within 3 visits, discontinue. ***Patients need to check with their health insurance carrier to determine if chiropractic treatment is a covered benefit under their contract. ***

**Treatment of Chronic Back Pain or Chronic Radicular Pain**

• Chronic back pain or radicular pain is highly situational. Some patients have lived with the problem for a long time and are content to do so. If their pain changes, they may need to start at the beginning of the attached algorithm or they may need a new workup. A referral may be appropriate.
**Referrals**

At Medical Associates Clinic, back pain referrals may be made to the Musculoskeletal Center. Patients will be expected to see a physiatrist before a surgical referral is made. Exceptions would be patients with a cauda equina syndrome, unstable spinal fracture or malignancy. Patients with radiculopathies may respond to other conservative measures before a surgical referral is needed. If there is a concern of radiculopathy, a referral to the neurologist would be appropriate.

***Imaging is not necessary for a referral.***

**Indications for Imaging**

- For most mechanical and non-mechanical diagnostic needs of the non-specialist, the MRI is the test of choice. CT scans are used only if an MRI is contraindicated (pacemaker, metal implants, etc.) or due to such severe claustrophobia, that the open MRI is not tolerated even with the help of medication to control pain or anxiety.
- A MRI is indicated if there has been adequate cause for an x-ray which is abnormal and needs further definition (i.e. suspicion of metastasis).
- MRI’s are not needed initially in the treatment of radiculopathy, when suspecting a disc herniation. This is a clinical diagnosis, especially if expected healing and recovery occur with treatment. An MRI is needed only if patients do not improve with the plan presented above, and need more invasive treatment (i.e. epidural steroids or surgery).
- MRI’s are ordered for compression fracture ONLY if there are radicular findings, or kyphoplasty is being considered. Conservative management for uncomplicated compression fractures is usually carried out for several weeks before surgery is considered.
- Pain and tingling into a lower limb without abnormal neurologic signs can have many causes that are clinically diagnosed, but not diagnosed on MRI such as sacroiliac pain. An exam by a specialist before an MRI in these cases may help to further prevent MRI overuse.

***If there are any questions in regard to the content of this guideline, or an individual case please contact the spine physicians in the Musculoskeletal Center: Dr. Michael Chapman Dr. Peggy Mulderig, or Dr. Philip Spence.

**References:**


Chief Medical Officer
Medical Associates Clinic & Health Plans

President
Medical Associates Clinic

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Low Back
(Non-Traumatic)

Patient presents/calls with Acute low back pain with or without radiating pain.

With radiating pain – paresthesias. Assess for constitutional disease as needed.

Normal neurological exam. Do steps A, B, C, see patient frequently (weekly or less often) to recheck neurological exam and reassure.

Back pain only with no constitutional signs/symptoms. Assess for constitutional disease as needed. Neurological exam.

X-rays if >50 years of age or <20 years of age if pain persists after steps A & B

Abnormal neurological exam.

Severe focal weakness/pain, loss of bowel, bladder, or sex function (BBS).

MRI imaging is indicated. Disc herniations causing radiculopathy should be treated by a non-surgical specialist initially, unless bowel, bladder, or sex function is lost.

In the elderly, LBP and/or non vascular claudication. Normal or abnormal neurological exam. Likely spinal stenosis. X-ray, PT trial (Patients with spinal stenosis often have a normal neurological exam and minimal to no back pain. Suspicion for this diagnosis is based on clinical history of claudication).

If no relief, order MRI.

Refer to Specialist if pain medicine or trial of oral steroids do not help.

A. Home Treatment
Brief bed rest (1-4 day Max.) if necessary. Rest with up walking/moving as soon as possible. Analgesics/muscle relaxants/simple stretching exercise program. Heat/Cold

If no relief after 1-2 weeks.

B. PT/other health professional.

If no relief after 1-2 weeks.

C. See specialist
Mildly abnormal neurological exam with motor intact and no BBS change.

A. & B.

If there is no resolution after 4 weeks from the initial onset of low back pain, refer for MRI or to a Specialist.

Resolves without testing done.