

# Madigan Army Medical Center

## Musculoskeletal Treatment Guidelines

### Acute Low Back pain

#### Diagnosis/Definition

- A condition of pain in the lower (lumbar-sacral) back region, with or without radiation of symptoms to the buttocks or lower extremities, of less than 6 weeks duration, in the non-pregnant patient. It can be an acute or chronic episode. This is often termed “non-specific low back pain” and in the absence of red flags, the specific patho-anatomical structure can only be reliably identified or correlated with symptoms 15% of the time in a primary care setting.

#### Initial Diagnosis and Management

- Elicitation of history and performance of physical examination.
- All patients with low back pain should be screened for presence of psychosocial risk factors (fear avoidance beliefs). In absence of red flags, elevated fear avoidance beliefs are much stronger prognostic indicators of whether a patient will convert from acute to chronic low back pain than findings on an MRI.
  - Validated screening questionnaires include the Fear Avoidance Belief Questionnaire, Pain Catastrophising Scale, or the Tampa Scale for Kinesophobia.
- Special attention to presence or absence of "red flags" to include:
  - age <18 or >55
  - history of malignancy (probability of cancer in patient reporting with low back pain is 0.1% to 3.5%)
    - Having a history of cancer increases the probability anywhere from 2 to 46% (Positive Likelihood Ratio = 23.7)
  - steroid use
  - HIV positivity
  - constitutional symptoms (fevers, chills, unintended weight loss)
    - A 0.01% reported prevalence of vertebral osteomyelitis among patients with low back pain
  - structural deformity
  - anal or urethral sphincter disturbance
    - Urinary retention is strongest single indicator of cauda equina syndrome (CES). - In the absence of urinary retention, the probability of CES = 1 in 10,000
      - Positive Likelihood Ratio = 18 (strong for ruling in)
      - Negative Likelihood Ratio = 0.01 (strong for ruling out)
    - saddle anesthesia (sensitivity = 0.75 for CES)
    - gait disturbance
    - or widespread neurologic deficit
    - Major trauma (Positive likelihood ratio = 12.8 for vertebral fracture)

# Madigan Army Medical Center

## Musculoskeletal Treatment Guidelines

- If red flags are present, diagnostic testing needs to include plain radiographs (AP, Lateral, and Spot Views); CBC with differential; ESR; C-Reactive Protein. Consider bone scan; CT scan and/or MRI scan and electrodiagnostics as indicated. The diagnostic imaging and laboratory studies depend on the red flag. All studies do not need to be ordered if only 1 red flag is present.
  - A-P radiographs and no personal history of cancer can rule out back pain related to malignancy in patients under the age of 50 with 100% sensitivity
  - Malignancy in low back pain: Elevated ESR has a positive likelihood ratio of 18
  - Malignancy in low back pain: Reduced hematocrit has a positive likelihood ratio of 18
- If red flags are absent a diagnostic workup is generally not necessary. Radiographs and MRI are not recommended for initial management. Clinicians should be aware ordering imaging when not indicated is not without risk as the amount of gonadal radiation a patient receives for 1 single lumbar radiograph is equal to the gonadal radiation received from having 1 chest x-ray every day for an entire year.
- Initial treatment for the first 4-6 weeks consists of:
  - Reassurance that most episodes resolve uneventfully within 6 weeks, even though the precise etiology remains unknown or does not correlate with imaging findings in most cases (85% of the time)
  - Emphasize aerobic exercise and maintenance as close to normal activity as is tolerable because these correlate with favorable outcome.
  - Especially patients with elevated fear avoidance beliefs, emphasizing the resiliency of the spine and de-emphasizing imaging findings correlates with better outcomes.
  - Prescribing a limited number of back exercises and stretches
  - Avoidance of bed rest greater than 24 hours (Bed rest > 72 hours is associated with greater rates of long term disability)
  - NSAIDS prn (unless contraindicated). The evidence only supports short-term improvement.
  - muscle relaxants for up to one week The addition of muscle relaxers to NSAIDs does not improve outcomes
  - acetaminophen as needed
  - weak opiates (codeine; propoxyphene) unless contraindicated **ONLY AFTER** failure of non-opioid agents
  - passive modalities (e.g. ice, heat) for symptomatic relief. The evidence only supports short-term improvement
  - Consider referral to the Physical Therapy Back Education Class

# Madigan Army Medical Center

## Musculoskeletal Treatment Guidelines

### Ongoing Management and Objectives

- If pain has not improved in 6 weeks: re-evaluate for "red flags", change NSAID, refer to Physical Therapy for evaluation and treatment. Other modalities of conservative management (e.g. chiropractic manipulation, therapeutic massage, epidural steroid injection by pain management specialist) may be discussed and appropriate referrals made depending on the patient presentation. Patients should be screened for potential psychosocial contributors to pain and appropriate mental health referrals made.

### Indications for Specialty Care Referral

- Low Back Pain unresponsive to conservative management without radiculopathy should be referred to Physical Therapy for additional nonsurgical, treatment modalities. The presence of symptoms in the lower extremity does not always constitute radiculopathy. A referral to Physical Medicine and Rehabilitation should be considered only for patients who have maximized the benefit of physical therapy and are still symptomatic.
  - Low back pain with or without radiculopathy with radiographic evidence of spondylolisthesis (degenerative or isthmic) or spondylolysis that is unresponsive to conservative management that includes a proper core stabilization strengthening progression program should be referred to Orthopedics. MRI prior to referral (without contrast).
  - Disabling low back pain without radiculopathy unresponsive to prolonged conservative management with MRI evidence of disc degeneration limited to 1 or 2 levels may be referred to Orthopedics only if the patient is amenable to a discussion of surgical options. Patients with greater than 2 abnormal disc levels and low back pain are unlikely to benefit from surgical consultation.
- Neurogenic claudication (inability to stand erect or ambulate secondary to pain and weakness of buttocks and lower extremities, improved by bending forward or sitting) with supporting MRI findings of spinal stenosis unresponsive to conservative management – Neurosurgery or Orthopedics referral. Focal neurologic signs (muscle weakness, loss of reflexes) with supporting abnormal MRI findings (disk herniation, tumor, deformity) (urgent consult if worsening) - Neurosurgery or Orthopedics referral. (see screening properties listed above under initial diagnosis and management)
- Focal neurologic signs with abnormal imaging studies (urgent consult if worsening) - Neurosurgery or Orthopedics referral. MRI prior to referral (without contrast unless tumor suspected).
- Focal neurologic signs with normal imaging studies (urgent if worsening) - Neurology referral.
- Incapacitating radiculopathy unresponsive to therapy with supporting abnormal MRI Findings - Neurosurgery or Orthopedic referral.

# **Madigan Army Medical Center**

## **Musculoskeletal Treatment Guidelines**

- Abnormal plain radiographs associated with red flags - Neurosurgery or Orthopedics referral. MRI of lumbar spine prior to referral (without contrast usually).
- Loss of bladder or bowel control, Saddle Anesthesia – If symptoms acute (less than 72 hours), send patient to Emergency Room for expedited evaluation. If symptoms subacute or chronic and supporting abnormal MRI findings present, Neurosurgery or Orthopedic referral. If supporting abnormal MRI findings are not present, consider referral to urology or gastroenterology.

### **Criteria for Return to Primary Care**

- Resolution of symptoms or implementation of continuing treatment program that can be managed in primary care portal with periodic subspecialty follow-up.