



Spinal Care Pathways

Contents

Patient Assessment and Classification	2
Red Flags for Serious Diseases	3
Non-Specific Low Back Pain Pathway	4
Lumbar Radiculopathy Pathway	5
Spinal Stenosis/Claudication Pathway	6
Cervical Radiculopathy Pathway	7
Cervical Myelopathy Pathway	8

Contact Us

Call Us:

617-754-9000

Email Us:

spinecenter@bidmc.harvard.edu

Request an Appointment:

OMR Order Form



The Spine Center at Beth Israel Deaconess Medical Center developed the following care pathways to help support primary care physicians in their interactions with patients who present with back pain. The care pathways are a guideline, not a prescription.

We developed these guidelines to provide decision-making assistance for care management of patients presenting with spinal pain. Treatment approaches may be modified based on individual patient's needs and your clinical expertise.

You may refer your patient to the Spine Center, at any time. Our non-surgical spine specialists are available to see your patients throughout the entire course of their symptoms. Consultation with one of our spine surgeons requires additional triage.

We look forward to our ongoing collaborative partnership.

Sincerely,

The Spine Center Provider Team

Clinical Decision Making

STEP 1: Assess your patient (diagnostic triage)

Conduct a focused history and physical examination evaluating:

Duration, severity and location of pain/symptoms	History of injury, previous back pain or surgery	Risk factors for potentially serious conditions	Presence and severity of neurologic deficits	Exacerbating and relieving factors	Influence of pain and treatment on ability to perform activities of daily living, mood, ability to sleep and addictive behavior	Psychosocial risk factors • Depression • IPV	Other risk factors • Smoking • BMI
--	--	---	--	------------------------------------	---	--	--



Presence of Red Flags Algorithm

See page 3

Classify

Non-Specific Low Back Pain (NSLBP)

Lumbar Radiculopathy

Unilateral leg pain below the knee (with/without numbness and weakness)

Spinal Stenosis/Claudication

Back pain associated with intermittent leg pain that is aggravated by standing or walking and relieved by sitting

Cervical Radiculopathy

Neck and radiating arm pain/numbness, often accompanied by motor or sensory disturbances

Cervical Myelopathy

Unsteadiness of gait, weakness, numb/clumsy fingers

See page 4

See page 5

See page 6

See page 7

See page 8

Throughout this booklet you will see the following icons to help guide you in your clinical decision making.



Refer to Physical Therapy

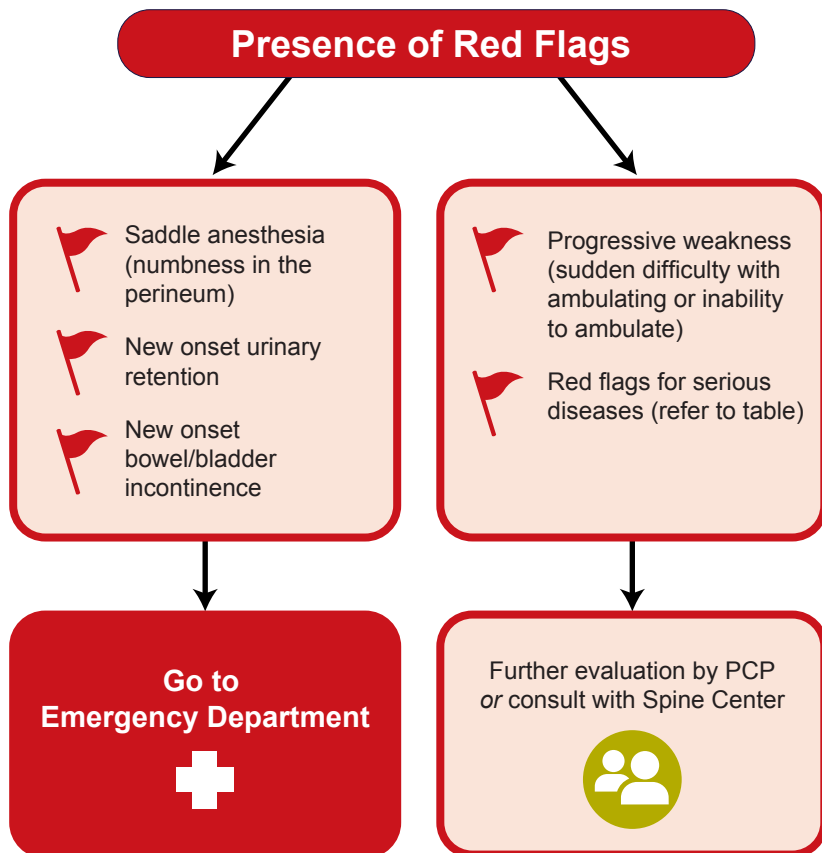


Consider Imaging



Consult with Spine Center

Presence Of Red Flags Algorithm



Red Flags for Serious Diseases			
	FRACTURE	CANCER	INFECTION
Traumatic injury/onset cumulative trauma	🚩		
Steroid use history	🚩		🚩
Women age >50	🚩	🚩	
Men age >50		🚩	
Male with diffuse osteoporosis or compression fracture	🚩	🚩	
Cancer history		🚩	
Diabetes mellitus			🚩
Insidious onset		🚩	🚩
No relief at bedtime or worsens when supine		🚩	🚩
Constitutional symptoms (e.g. fever, weight loss)		🚩	🚩
History UTI/other infection			🚩
IV drug use			🚩
HIV			🚩
Immune suppression			🚩
Previous surgery			🚩

GI Risk Factors

Assess risk factors for GI complications associated with NSAIDs

- History of GI bleeding, peptic ulcer, cardiovascular disease, *Helicobacter pylori* positive
- High dose, chronic, or multiple NSAIDs
- Concomitant use of low-dose aspirin, anticoagulants, corticosteroids, or selective serotonin reuptake inhibitors
- Age >60 years
- Severe rheumatoid arthritis disability

If no GI risk factors

- NSAID
- If also elevated cardiovascular risk (assume on low-dose aspirin or other antiplatelet medication) → naproxen plus PPI

If any GI risk factor

- NSAID plus PPI, or Cyclo-oxygenase-2 (COX-2) selective inhibitor (similar action, cost may differ).
However, if:
 - NSAID not tolerated → COX-2
 - Very high GI risk (e.g. prior GI bleed) → if possible avoid NSAIDs/COX-2. If cannot avoid, then COX-2 plus PPI
- If also elevated cardiovascular risk (assume on low-dose aspirin or other antiplatelet medication) → if possible avoid NSAIDs/COX-2. If cannot avoid, then assess patient to prioritize GI and cardiovascular risks. If primary concern is:
 - Very high GI risk → COX-2 plus PPI
 - Very high cardiovascular risk → naproxen plus PPI

Patient presents with

Non-Specific Low Back Pain (NSLBP)

STEP 1: Patient Assessment

Educate

- Reassure patient on the favorable prognosis (see linked patient education material on bidmc.org/spinecenter)
- Advise patients to stay active
- Discourage bed rest
- Promote self-management (carry on with normal activities as much as possible)
- Discourage lumbar supports

STEP 2



Avoid the following investigations

A. Diagnostic imaging

- Radiological imaging is **not** recommended for acute NSLBP for patients <50 years of age
- Plain radiographs are optional for patients >50 years of age

B. EMG is not recommended for acute NSLBP

C. Laboratory testing

- Not recommended unless specific illness is suspected
- ESR, CBC if cancer or infection is suspected

Prescribe medication for pain relief (if needed)

- Non-narcotic analgesics
 - Acetaminophen
 - NSAIDs (refer to page 3, GI Risk Factors)
- Muscle relaxants
- Avoid Narcotics
- Prescribe integrated medicine:
 - Massage therapy
 - Accupuncture



Prescribe Physical Therapy

- 4-6 weeks, then reassess
- For patients whose pain is made worse by physical activity or exercise (these patients may benefit from therapeutic exercise recommendations)
- Active treatments have demonstrated greater efficacy than passive therapies

STEP 3

Follow-up Visit (4-6 weeks after initial visit)

Reassess patient status 4-6 weeks after initial visit if symptoms fail to resolve

- Exclude serious pathology (*Red Flags*)
- Review psychosocial risk factors

Patient remains symptomatic

Patient has shown improvement

STEP 4



Consider imaging

- X-rays, 4-6 weeks
- MRI w/o contrast, 12 weeks



Consult with Spine Center

Keep going: transition to home exercise program (a few patients may still require sessions with the physical therapist)

Patient presents with

Lumbar Radiculopathy

Unilateral leg pain below the knee (with/without numbness and weakness)

STEP 1: Patient Assessment

Additional Assessment

- Conduct detailed neurological exam including motor, sensory testing, reflex
- If there are any symptoms of urinary or bowel and bladder symptomatology (including urinary retention or incontinence) **then a rectal exam needs to be done to exclude cauda equina syndrome**
- Conduct a supine Straight Leg Raise (SLR) +/- forward flexion, hyperextension and slump tests to assess L4, L5, S1
- Conduct a Femoral Stretch Test (FST) to assess L1, L2, L3 nerve root irritability
- Identify the type of pain and exacerbating factors
- Perform a complete lower extremity physical examination to rule out a musculoskeletal cause of the pain
- Consider serious medical causes of radiculopathy (e.g. demyelinating disease, vitamin B12 deficiency, syphilis, herpes, diabetes and others)

STEP 2

Educate

- Advise patient in the acute phase to avoid heavy lifting or aggravating movements, though staying active is very important



Prescribe Physical Therapy

- 4-6 weeks, then reassess

Prescribe medication for pain relief (if needed)

- Neuropathic pain medication trial: Gabapentin, Pregabalin, Tramadol, etc. (short course)
- Avoid narcotics

STEP 3

If symptoms unresolved



Consider imaging

- MRI w/o contrast

STEP 4



Depending on pain severity and time course, **consult with Spine Center**



Consult with Spine Center

Patient presents with

Spinal Stenosis/Claudication

Back pain associated with intermittent leg pain that is aggravated by standing or walking and relieved by sitting

STEP 1: Patient Assessment

STEP 2

Clinical Diagnosis

- Diagnostic tests not routinely indicated
- No imaging studies if no Red Flags
- Rule out diagnoses; i.e. vascular claudication

Medical Treatment

- Education
- Exercise to tolerance; avoid harm (pain/numbness following exercise that persists for hours)
- Medication (Avoid Narcotics)
- Physical Therapy 4 weeks



Needs improvement

**First Follow-Up Visit
(4-6 weeks after initial visit)**

Improvement in pain and function

STEP 3



Imaging

- Spine radiography;
MRI w/o contrast

*MRI Does Not Show
Compression*

*MRI Shows
Compression*



- Physical therapy with transition to home program
- Continue what has helped
- Regular follow-up (every 6 months)

STEP 4

- Not a neurocompressive disorder
- Further work-up for neuropathy/other pathology/vascular claudication



**Consult with
Spine Center**

Patient presents with

Cervical Radiculopathy

Neck and radiating arm pain/numbness, often accompanied by motor or sensory disturbances

STEP 1: Patient Assessment

Additional Assessment

- Conduct detailed neurological exam including motor, sensory testing, reflex
- Identify the type of pain and exacerbating factors
- Perform a complete upper extremity physical examination to rule out a musculoskeletal cause of the pain
- Consider serious medical causes of radiculopathy (e.g. demyelinating disease, vitamin B12 deficiency, syphilis, herpes, diabetes and others)

Weakness and/or Functional Decline?

Yes

No

Non-progressive neurologic deficit or no neurologic deficit

STEP 2



Prescribe Physical Therapy

- 4-6 weeks, then reassess

Prescribe medication for pain relief (if needed)

- Neuropathic pain medication trial: Gabapentin, Pregabalin, etc.
- Tramadol (short course)
- Avoid narcotics

No improvement

STEP 3



Imaging

- Spine radiography; MRI w/o contrast

STEP 4



Consult with Spine Center
Degree of **urgency** depends upon progression of symptoms



Consult with Spine Center



Depending on pain severity and time course, **consult with Spine Center** (no imaging required)

Patient presents with

Cervical Myelopathy

Unsteadiness of gait, weakness, numb/clumsy fingers

STEP 1: Patient Assessment

Additional Assessment

- Conduct detailed neurological exam including motor, sensory testing, reflex
- Identify the type of pain and exacerbating factors
- Perform a complete lower extremity physical examination to rule out a musculoskeletal cause of the pain
- Consider serious medical causes of radiculopathy (e.g. demyelinating disease, vitamin B12 deficiency, syphilis, herpes, diabetes and others)



Yes

Weakness and/or Functional Decline?

No

Educate

- Advise against activities predisposing to falls
- Warn re: symptoms to watch for

Prescribe medication for pain relief

- Acetaminophen
- Anti-inflammatory

Prescribe therapy



- Physical therapy for:
 - Gait training/balance training
 - Strength training
- Occupational therapy for:
 - Activities of daily living

STEP 2

No improvement

Imaging

Urgency depends upon severity and progression of symptoms. If concerned, consult with Spine Center



- Cervical spine x-rays
- MRI
- CT-myelogram if contraindication to MRI

STEP 3

MRI shows

significant spinal cord compression, that is, cord effacement, or intramedullary signal change, spinal cord deformity, severe stenosis

MRI does not show spinal cord pathology

STEP 4



Consult with Spine Center for cervical myelopathy

Cervical myelopathy is not present

Consider other pathology (e.g. multiple sclerosis, brain pathology, amyotrophic lateral sclerosis, folate or B12 deficiency, peripheral neuropathy) and manage accordingly. Consider referral to neurology.