

# Approach to Back Pain

Year 3 Clerkship Guide, Family Medicine Department  
Schulich School of Medicine and Dentistry

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## Objectives

1. Define acute low back pain.
2. Define chronic back pain.
3. What is the primary treatment goal for both acute low back pain and chronic back pain?
4. Be able to screen for red flags with acute low back pain.
5. Be able to screen for yellow flags with chronic back pain.
6. Be able to conduct an appropriate history and physical exam for someone complaining of lower back pain.
7. Be able to formulate a differential diagnosis for lower back pain based on the history.
8. Identify appropriate investigations and referrals for an individual complaining of lower back pain.
9. Be able to outline a plan for managing both acute and chronic lower back pain.
10. Identify the family physician's role in managing disability.

*Lower Back Pain* is a broad clinical term, not a specific disease. There are a variety of causes - the most common cause is mechanical back pain due to muscle, tendon, or ligamentous strain. In up to 85% of individuals, no specific cause can be isolated.

## Acute Low Back Pain

Acute low back pain is a common presenting illness in the primary care setting – family physicians generally see at least one presentation a week. It is defined as pain below the costal margins and above the inferior gluteal folds with no serious underlying pathology. As such, acute back pain is often referred to as mechanical low back pain. Acute back pain frequently recurs and resolves on its own, regardless of treatment. Work-up for a complaint of acute low back pain should focus on ruling out more serious pathology by screening for **red flags**. Presence of red flags suggests it is not simple mechanical back pain.

***In the absence of Red Flags, treatment for acute LBP is conservative.***

## Chronic back pain

Chronic back pain is low back pain of unspecified pathology that persists longer than **3 months**. It is not acute back pain with an extended duration; the evolution of chronic LBP is complex, with physiological, psychological, and psychosocial influences. Depression is often associated with chronic back pain – malingering is uncommon. Work-up for chronic back pain (and acute LBP) should include a screen for **yellow flags** that indicate risk for chronic disability.

### Red Flags - Screen with Acute LBP

- Less than 20 or older than 50, with back pain for the first time.
- Trauma.
- The pain is constant and getting worse.
- Pain is worse at night or when supine.
- Previous cancer history.
- Steroid use, IV drug use, risk of UTI and/or immuno-suppressed.
- Fever and/or weight loss.
- Neurological signs such as weakness, numbness, saddle anesthesia or bowel/bladder incontinence

### Yellow Flags - Screen with Chronic BP

- A belief that back pain is harmful or potentially severely disabling
- Fear-avoidance behaviour (avoiding a movement or activity due to misplaced anticipation of pain) and reduced activity.
- Tendency to low mood and withdrawal from social interaction
- Expectation of passive treatment(s) rather than a belief that active participation will help.
- Poor job satisfaction and hx of time-off
- Overprotective family or lack of support

***An important treatment goal for both acute and chronic back pain is for the patient to be active as soon as possible.***

## History-taking

- Determine the nature of the back pain, including onset, severity, location, quality, duration, and aggravating and relieving factors.
- Find out the mechanism of injury and its relation to the onset of pain.
- Determine what medications or treatments have been utilized (NSAIDs, chiropractor, acupuncture, cold or hot compresses, etc.)
- Determine what functional limitations have resulted due to the pain (work, hobbies, ADLs)
- Ask about emotional consequences of the injury, the goals of treatment and the visit, and concerns the patient may have (about return to occupation, possibility of being on disability, requirement for pain medications).
- Evaluate the possibility of more serious causes for the back pain - ask about symptoms that may indicate systemic disease or infection, or neurological impairments.

## Physical Exam

- Palpate for tenderness or structural abnormalities in the area of complaint.
- Complete a thorough musculoskeletal exam, including:
  - Inspection – café-au-lait spots (? neurofibromatosis), hairy patches (? spina bifida)
  - Feel- spinous process tenderness (? fracture, tumor, infection), SI joint pain (? ankylosing spondylitis), chest expansion <2.5cm (? ankylosing spondylitis), step at L5 (? spondylolisthesis)
  - Move: pain on bending toward affected side, or on flexion (? Lumbar disc disease), pain on extension (? Facet joint or spinal stenosis), range of motion
  - Special Tests
    - Schober's Test: assesses the amount of lumbar flexion. Make two pen-marks, one at 10cm above the PSIS, the other 5cm below it. Upon flexion, the distance should increase >5cm. Decreased ROM of lumbar spine suggests ankylosing spondylitis.
    - Straight Leg Raise: assesses the presence of radiculopathy – if pain is reproduced and radiates down into affected leg when the leg is raised between 10 and 60 degrees elevation. If the opposite leg produces a positive response, it is indicative of a large herniation.
      - Lasegue's test involves dorsiflexing the foot during the SLR.
      - Valsalva maneuver may aggravate the pain.
- Complete a thorough neurological exam, including gait, ankle reflex (S1), knee reflex (L4), strength, sensation (look for saddle anesthesia and anal sphincter tone, plus check dermatomes along lower limb).

In a patient with simple mechanical back pain, without symptoms of nerve root compression and no reason to consider recurrent malignancy, osteoporosis, or HIV infection, the yield from clinical examination is low. However, the history and physical exam are essential to determine the presence of any red flags.

## **Differential Diagnosis of Back Pain**

- Mechanical Lower Back Pain** The most common cause of back pain. Mechanical LBP refers to pain that is diffusely related to soft tissues. In the absence of red flags, most complaints of back pain can be diagnosed as mechanical. However, it is important to consider and rule out disc pain, degenerative and inflammatory etiologies before concluding that the problem is 'mechanical'. Management is conservative, and involves patient education about the need to get back to normal activities as soon as possible. This problem must be managed carefully to avoid the development of chronic pain.
- Ankylosing Spondylitis (AS)** A seronegative arthropathy that most commonly affects young men and involves pain in lower back and gluteal area. It often features an insidious onset (>3 months) with increased pain and stiffness in the morning (>30 minutes). Pain decreases with exercise and increases with rest. It is often associated with uveitis and colitis. The prevalence of AS in Caucasians is about 0.15%. It is lower in women and higher in some ethnic groups.
- Disc Herniation** It is important to keep in mind that only 5% of presentations of back pain have a discogenic etiology. Disc herniation presents most commonly in those who are 30-40 years old. The onset of pain occurs over hours to days, lasts weeks to months, and is worse on flexion. The pain is predominantly distributed in the lower part of the lower extremity and never solely in the back. The pain is a sharp, lancinating quality often described as “shooting” and “shock-like”. The pain worsens with sneezing or bending over (maneuvers that increase intra-spinal pressure). Unilateral symptoms usually indicate a lateral herniation as opposed to a central disc herniation.
- Ninety-five percent of disc herniations occur at the L4-L5 or L5-S1 vertebrae. In general, discogenic pain follows the nerve root distribution of one level below the herniated disc. For example, an L4-L5 herniated disc would result in a L5 distribution corresponding to pain sensation extending to the dorsum of the foot. However, in cases of far lateral disc herniations, the dermatomal distribution corresponds to the level of disc herniation.
- Management of disc herniation is conservative and similar to mechanical low back pain. Symptoms usually improve regardless of treatment within 6 weeks. No investigations should be ordered in the absence of red flags. Referral for surgery is made only if neurological status worsens progressively or if pain persists without improvement for > 6 weeks. However, central disc herniation in the lumbosacral area can lead to Cauda Equina syndrome, which is a surgical emergency.
- Lumbar Spinal Stenosis** Uncommon before age 60. Presents with pain in both legs aggravated by walking, standing, or extension and relieved by sitting or bending forward. Also called neurogenic claudication, it must be differentiated from vascular claudication. The latter presents with calf pain that comes on after a specific amount of exercise and only improves with rest, not with bending forward.

<b>Facet Joint Pain</b>	A fairly common cause of mechanical LBP. It features pain that has onset in minutes to hours, lasts days to weeks, and is worse on extension. Often associated with osteophytes that accompany osteoarthritis.
<b>Spinal Infection</b>	Uncommon condition representing only 0.01% of all back pain. Patients generally have symptoms of infection including fever, rigors, and malaise. The pain is not relieved with rest and is provoked by weight bearing. On examination there will be focal tenderness at the involved spinous process.
<b>Tumour</b>	Associated with focal tenderness at the involved vertebrae, and constitutional symptoms. Pain is not relieved with rest and is unrelated to position. On history, the patient describes progressively worsening pain. On physical, the pain is made worse by lying down and percussion. Unrelenting night pain is considered tumor until proven otherwise.
<b>Rheumatoid Arthritis</b>	Generally associated with numerous other arthropathies, especially of smaller joints in a symmetrical pattern. Mostly affects middle aged women and features morning stiffness (>30 minutes), and possibly intermittent periods of flare-ups and remission.
<b>Osteoarthritis</b>	Very common, especially with age, but unusual to have symptoms before middle age. Pain is worse with use and is slowly progressive. Affected joints show limited ROM.
<b>Fracture</b>	Associated with osteoporosis (or other pathology), and with trauma. The pain will be sudden and may include neurologic symptoms. The bone will be tender to palpation. A vertebral fracture should be ruled out with imaging when complaints of acute back pain are accompanied with a history of trauma (such as a fall) or in an elderly patient. If osteoporosis is suspected, conduct a bone mineral density study and rule out other causes of decreased bone density such as osteomalacia. Note that vertebral fractures can present in individuals of all age groups when due to trauma induced by MVAs or high-risk activities.
<b>Spondylolisthesis</b>	Slippage of L5 on S1. Represents 2% of back pain, but is more common in athletes or in women over 40. Loss of lumbar lordosis is evident, and a step over L5 is palpable. The back pain often radiates into the knees.
<b>Spondylolysis</b>	Fracture in a vertebrae, often of the pars interarticularis. Commonly occurs via stress fracture, and usually affects L5. Mechanism of injury often involves overtraining in sports like tennis, gymnastics and soccer. Spondylolysis is the most common cause of spondylolisthesis in children.
<b>Fibromyalgia</b>	Women account for 75% of patients with fibromyalgia. Symptoms persist for >3 months and are worse in morning and at end of day. Patient suffers from severe fatigue, widespread pain, difficulty sleeping, and often anxiety/depression.
<b>Cauda Equina Syndrome</b>	Low back pain, unilateral or usually bilateral sciatica, saddle sensory loss, bladder and/or bowel dysfunction, and variable lower extremity motor or sensory loss. It is a surgical emergency. Immediate referral to the ER for an emergency neurosurgical consult is important to prevent permanent neurological damage. Without treatment, the patient may suffer from paraplegia and bowel/bladder incontinence.

## Investigations

### Laboratory Investigations

It is recommended that no laboratory investigations be ordered for patients with uncomplicated mechanical low back pain. If there is suspicion about a systemic cause of low back pain such as inflammatory arthritis, connective tissue disease, or infection, then **CBC**, **ESR**, and other markers may be appropriate.

**ESR** ESR is a sensitive but not very specific test for identifying patients who need further investigation. In a hospital-based study, a raised ESR had a sensitivity of 0.69 and a specificity of 0.68 for AS. In general, ESR would be a good first investigation when an infection or systemic condition is suspected, such as RA or connective tissue disease.

### Imaging

*No imaging is recommended for acute mechanical low back pain in the absence of red flags.*

Keep in mind that imaging can be used to help confirm a clinical diagnosis, but cannot confirm that a particular structure is the cause of a patient's pain. Patients with uncomplicated acute low back pain and no red flags, who are between 20 and 50 years old, do not require imaging. In chronic low back pain, it may be appropriate to take AP and lateral lumbosacral x-rays. A bone scan can also be considered. If the pain radiates below the knees, an MRI may be indicated.

### Indications for Imaging Modalities

**X-Ray** X-ray remains the imaging of first choice for investigation of suspected OA (disc space uniformity), tumor, trauma, spondylolisthesis, and ankylosing spondylitis. It is also acceptable to order x-rays of the lumbar spine in the case of chronic LBP. However, unless you have reason to suspect a serious cause for the back pain, you should avoid exposing the patient to x-rays. Minor abnormalities are very common on x-ray films of the lumbar spine. In general, a lumbar x-ray is a low yield test. However, the dose of radiation from a set of lumbar spine x-rays is 120 times that of a chest x-ray. The incidence of cancers induced by radiation following x-rays of the lumbar spine may be around 1 in 25 000.

**CT** CT is the test of choice to investigate pain suspected to be from multi-segmental bony stenosis, and fracture. CT is most helpful if osseous abnormality is clinically suspected, as abnormal findings are commonly found on CTs of asymptomatic patients. CT is commonly used along with MRI to investigate spinal trauma or tumors and is also commonly used for OA.

**Bone Scan** This is a useful test to investigate osteomyelitis, primary or metastatic bony neoplasms, occult fractures and spondyloarthropathy (ie. facet or SI joint pain). The test is quite sensitive for infections and tumors, but false positives are common in the elderly due to the presence of OA. False negatives may occur with diffuse bony metastases and multiple myeloma.

**MRI** MRI is the primary diagnostic tool when cauda equina or malignancy is suspected, or if there is a previous history of cancer or complaint of progressively worsening radiculopathy over 4 months. MRI is also the best test for osteomyelitis as it can detail the extent of damage, but bone scans and white blood cell scans are more commonly used due to availability.

**Referral**

For uncomplicated acute LBP, referral is not indicated. Acute LBP usually resolves without intervention. *Consider referral if the pain does not respond to 4-6 weeks of conservative management.*

Chiropractic manipulation has been shown to provide pain relief for acute LBP but there is no significant difference in patient outcome between spinal manipulative therapy, general practitioner care, and physical therapy. Spinal manipulation is not beneficial after 6 weeks of acute LBP. Hence, *chiropractic therapy does not play a role in the management of chronic back pain.* During follow-up assessments of acute LBP, physiotherapy may play a role in the long-term return to work/normal activities plan. It is recommended that patients not be referred for physical therapy in the initial 2-3 weeks of onset of pain.

For chronic low back pain, a referral may be recommended to a specialist who is well versed in sorting through the biological, psychological, and social etiologies of back pain. However, family physicians are often in a better position to provide a comprehensive approach.

**Management of Acute Low Back Pain**

The key components in the strategy for acute low back pain management include *screening for red and yellow flags; patient reassurance and education; and symptom management.*

Malingering is not a common scenario. By empathizing with patients and their pain, a good rapport is established and the patient is more likely to be receptive to discussions regarding the nature of acute low back pain. A key message in such discussions is that *hurt does not equal harm.* Patients need to come to the understanding that *the majority of individuals suffering from acute LBP do get better* and do not suffer from a poorer quality of life because of their back pain.

*NSAIDs and acetaminophen are the first line agents for pain relief.* If NSAIDs are contraindicated (CHF, allergies, renal failure) muscle relaxants or weak opioids are alternatives. For severe back pain, stronger opioids can be used. Patients should be advised regarding the side effects associated with muscle relaxant and opioid use.

*The most important aspect in managing acute LBP is to encourage patients to take an active role in their back pain management* by resuming their daily activities including work. An early return to normal activity and work are related to lower rates of recurrence and disability. Strategies that may help in this regard include discussing work modification options (different responsibilities, part-time work) with both the patient and the employer. Patients may experience pain as they attempt to resume a normal course of activity. Patients should be reassured that pain does not equate to further spinal damage and that *an active lifestyle within tolerable pain limits is key to recovery.* Activities may be modified according to pain tolerance, however, it is important to emphasize that patients should make every effort to a gradual return to normal activity.

Ongoing symptom review and management are also important. *The patient should be reassessed every two weeks after the initial assessment.* Each assessment should include a review of symptoms to screen for red/yellow flags. *Consider referral if the patient has unremitting pain 6 weeks after symptom onset.*

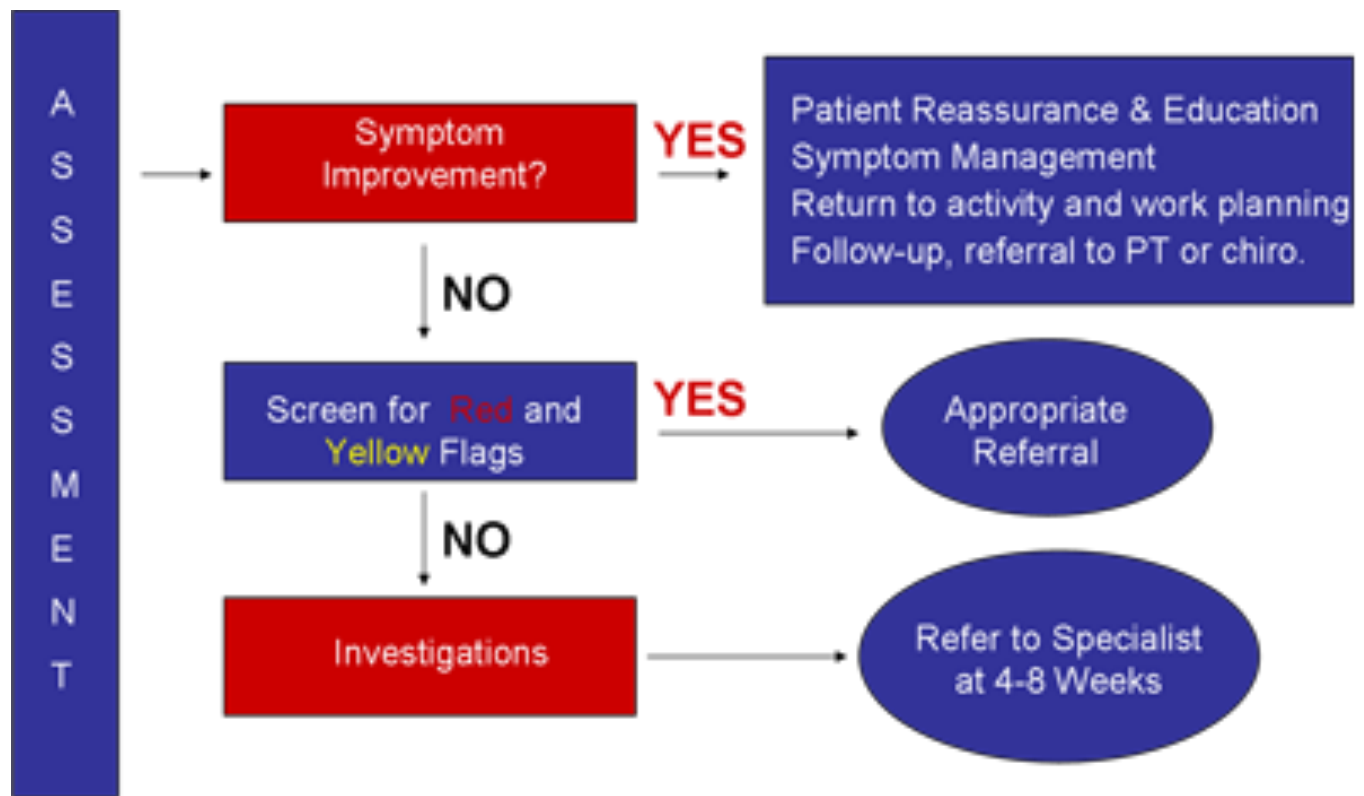
**Non-medical Treatments**

There is currently weak or conflicting evidence for the utility of the following therapeutic modalities in treating acute LBP: acupuncture, TENS, back specific exercises, and spinal injections (e.g. facet, epidural). A recent Cochrane Review showed benefit from massage for chronic low back pain. If the patient is having difficulty following an active exercise program, a supervised exercise program/therapy may be of some benefit. Manipulation techniques may be beneficial in acute LBP.

**Key Points of Management**

- The vast majority of patients do not have severe (bilateral LE motor weakness and sensory loss) or progressive neurological deficits and thus require conservative management
- Usually radiculopathy will resolve within a few weeks.
- For lumbar disc herniation with pain lasting > 6 weeks, CT and MRI are the modalities of choice.
- Patients who exhibit symptoms of cauda equina syndrome require urgent referral to neurosurgery.
- For patients with mechanical LBP who do not improve within 2-4 weeks, treatment consists of conservative measures such as weak analgesics and increased activity level.
- Imaging or referral should be considered after 4-6 weeks.
- Bed rest should be minimized to no more than 2 days.
- Strong analgesics such as opioids are generally not indicated.
- The patient with mechanical low back pain should be encouraged to recognize the pain as part of the healing process and attempt to continue to exercise while tolerating some pain.

*Algorithm for the Follow-up Assessment of Acute Lower Back Pain*



## **Management of Chronic Pain**

In the absence of red flags, chronic back pain should be treated in a multi-modal but conservative fashion. Early return to work is a priority. The patient's ideas about pain and other yellow flags need to be addressed with appropriate sensitivity.

### ***Chronic Pain Overview – a biopsychosocial model***

Chronic LBP is not simply the same as acute LBP that persists for a greater duration. Usually 6-7 weeks is sufficient for healing to occur in most soft-tissue or joint injuries; however, 10% of LBP injuries do not resolve within this period. A patient is considered to have chronic pain if the problem has lasted >3 months. The evolution of chronic LBP is complex, with physiological, psychological, and psychosocial influences. These influences can be divided into 3 major categories: (1) neurophysiological mechanisms, (2) psychological mechanisms, and (3) barriers to recovery.

#### *Neurophysiological mechanisms*

If the peripheral pain stimulus is caused by an ongoing pathologic condition, continuous nociception may induce repetitive stimulation or sensitization of pain receptors and nerve fibers, such that they respond to even mild or normal sensory stimuli in an adverse fashion (allodynia). Persistent tissue damage may stimulate afferent nerve fibers, which project to internuncial neurons in the spinal cord, and set up neuronal loops of continuous self-sustaining abnormal nociceptive activity. Peripheral inhibition, a mechanism for reducing the intensity of an afferent pain signal, may be impaired owing to persistently malfunctioning or diseased large peripheral myelinated fibers, which normally dampen nociception (eg, peripheral neuropathy, epidural scarring, chronic herniated disc material). Furthermore, cortical influences, such as cognitive and affective disorders, may affect the intensity of the processed pain signal.

#### *Psychological mechanisms*

Pain complaints are common in depressed individuals, and patients with chronic pain frequently become depressed. Depression acts through biochemical processes similar to those that are operative in chronic pain; this may enhance symptoms through a synergistic relationship. Depressed patients may illogically interpret and distort life experiences, further complicating treatment or employment feasibility.

#### *Barriers to recovery*

Patients differ in their inherent capacity to exercise. Deconditioning syndrome, as coined by Mayer, is caused by prolonged reduction of physical activity due to chronic LBP. This syndrome is associated with gradual reduction in muscle strength, joint mobility, and cardiovascular fitness, which over time may become a self-sustaining and independent component of the individual's musculoskeletal illness.

### **Overall Approach to Management of Chronic Back Pain**

- 1) Continue to pursue a conservative approach with massage, intensive exercise therapy, medications for pain and/or depression, etc.
- 2) Utilize a multi-disciplinary, intensive treatment regimen if the patient is significantly affected by chronic pain and has failed to improve with trials of first-line treatment.
- 3) Investigate for a specific diagnosis with joint blocks or discography and treat appropriately
- 4) Consider opioids only for short term use in patients experiencing severe exacerbations of back pain or rarely for those who do not respond to other measures, who are at low risk of drug abuse
- 5) Depression is common in patients with chronic back pain – screen for it and treat if present



### ***Effectiveness of various pharmacological treatments in treating chronic LBP***

<i>Acetaminophen and NSAIDs</i>	First-line medications for managing acute exacerbations of subacute (pain with duration between 4- 12 weeks) or chronic LBP
<i>Opioids</i>	Opioids only partially relieve the pain, have been found in numerous trials to have no significant difference for pain reduction compared to placebo or nonopioid analgesics, and must be used carefully . Consider weak opioids (e.g. Tramadol) for short-term use in patients experiencing severe exacerbations of back pain or rarely for those who do not respond to other measures, who are at low risk of drug abuse.
<i>Antidepressants</i>	There are conflicting results on the benefits on using antidepressants to treat chronic pain. Tricyclics have been found in two meta-analyses to be slightly more effective than placebo for chronic low back pain relief. Tricyclics are not first-line due to their questionable benefits and side effects. However, depression is a common co-morbidity of chronic back pain and should be assessed for and treated if present.
<i>Muscle relaxants</i>	There is insufficient evidence with regard to the effectiveness of muscle relaxants in treating chronic LBP. Short-term use of muscle relaxants may be considered as adjunctive treatment to analgesics if pain cannot be managed with analgesics alone but caution must be taken in prescribing due to CNS side effects and potential for abuse.
<i>Benzodiazepines</i>	Limited evidence – one trial found no difference between diazepam and placebo for treating muscle spasm. Prescription of benzodiazepines for long-term treatment of chronic LBP is not recommended, but a short course may be considered for acute exacerbations, only if first-line options have not satisfactorily reduced pain and if the patient is at low risk for abuse.
<i>Herbal medicine</i>	Harpagoside, salacin and capsicum frutescens all have some benefit in pain relief.
<i>Anti-epileptics (Gabapentin)</i>	Gabapentin should not be prescribed to treat chronic low back pain as RCTS have shown that it has no significant benefit over placebo.

### ***Other pearls of management***

- Multidisciplinary treatment programs that are intensive (greater than 100 hours), include medical, physical exercise, vocation and behavioural components and are provided by 3 or more health care providers in different fields are more effective in reducing pain, improving function and speeding up return to work than less intensive programs.
- Exercise therapy is effective at relieving pain and function – the most effective format is an individually designed exercise program completed at home with continued guidance from a therapist.
- Acupuncture can be beneficial and is more effective than sham or no treatment. It should be prescribed in combination with rehabilitation therapy.
- Cognitive-behavioural therapy can mitigate the psychological factors contributing to chronic back pain. CBT has been found to be effective in relieving pain and improving function.
- Spinal manipulation has been found to be beneficial in reducing pain and improving function, and has been found to have equal effectiveness as analgesics, physical therapy and exercise therapy.
- Massage may be beneficial in relieving pain and improving function
- Treatments with conflicting evidence regarding their benefit include epidural steroid injections, trigger point injections, electrical muscle stimulation, laser, TENS, and superficial hot and cold therapy.

- Bed rest, lumbar supports and naturopathic medicine therapies are not recommended, as there is no evidence from RCTs regarding their effectiveness.
- Anti-epileptics, facet joint injections, EMG biofeedback, therapeutic ultrasound and traction have been found through RCTs to be ineffective in treating chronic low back pain and should not be recommended.
- Surgery can help some patients to various degrees, but nearly half will not benefit.
- Tests (ie. joint blocks) are available to make a diagnosis when CT and MRI scans are normal. If diagnosed, treatment is available for zygapophysial joint pain (ie. nerve ablation). New treatments are being developed and tested for sacroiliac joint pain and pain coming from intervertebral discs.

### **The Family Physician's Role in Disability**

Canadians suffer 800 000 workplace injuries each year. Half of these lead to time lost from work. For the individual, delays compound the disability. If someone is off work for six months, the chance of getting back to work is 50%. If they are off for more than one year, the chance is 25% and if longer than two years, the chance is almost zero.

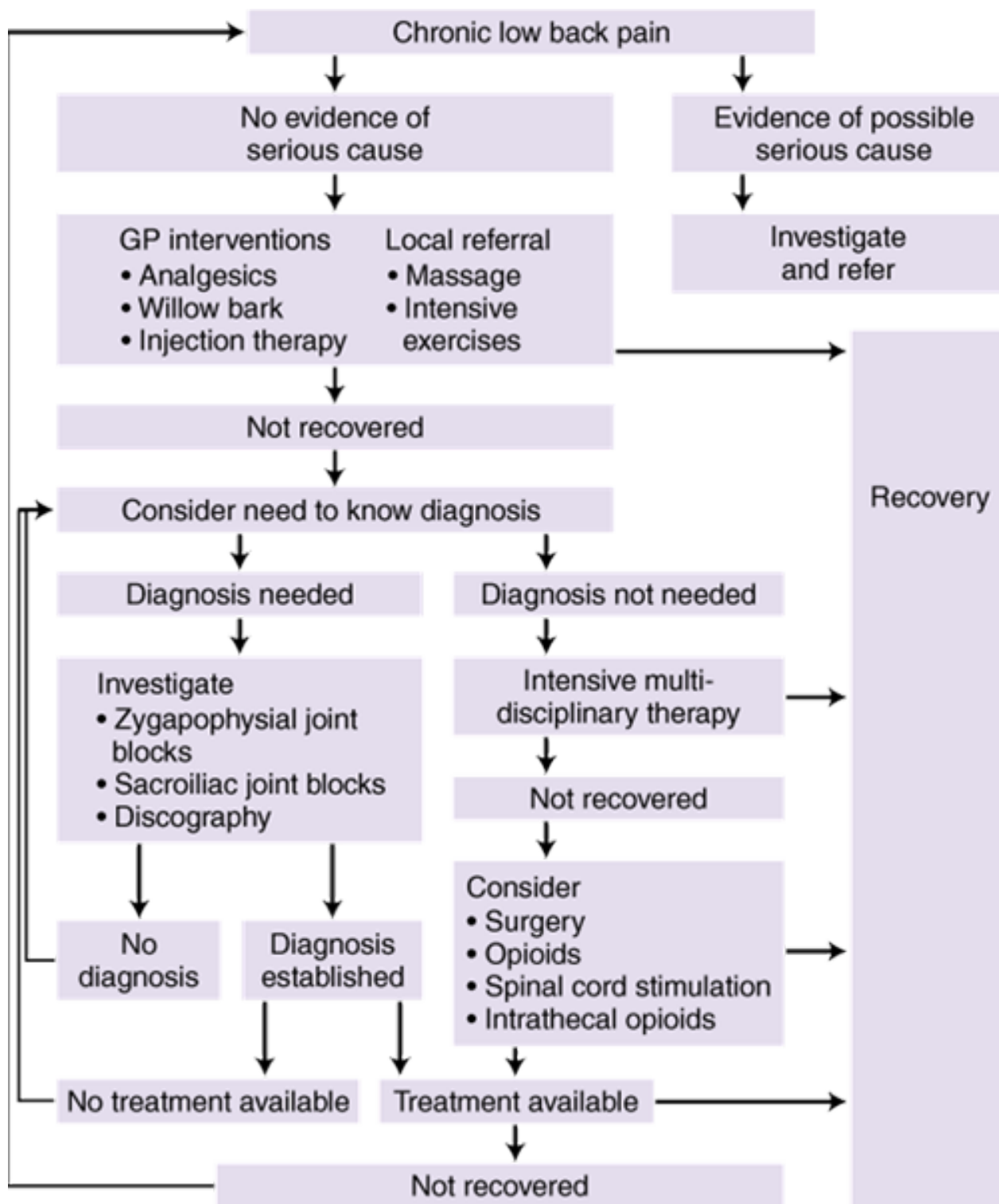
As in most other nations, Canadian workers' compensation authorities rely on the contribution of family doctors for early and ongoing clinical care of injured workers. Most workers' compensation authorities ask family doctors to combine traditional clinical care with tasks aimed to facilitate return to work (assessing an injury's work-relatedness, developing a return-to-work plan, monitoring recovery, and communicating with patients, employers, and the insurer).

Some physicians fear getting involved with WSIB cases because of a combination of medical uncertainty, time, and workload concerns. However, it is worth noting that when completing a Physician's First Report (Form 8), there is no legal obligation to produce any other reports or make appearances at any appeal/tribunal hearings in the future related to the case (although patient records may be requested). If other medical support is needed, a consult to occupational health or another specialist may be helpful.

#### **Important points:**

Upon meeting a patient injured at work, The Physician's First Report (Form 8) must be completely filled out and sent to the WSIB in a timely manner. You can access the form using the following link. <http://www.wsib.on.ca/wsib/wsibsite.nsf/public/Physicians>. For follow-up appointments, The Physician's Progress Report (Form 26) is used to provide the WSIB with ongoing, updated information about the patient's progress and prognosis. This form will be sent to the worker to bring to the doctor.

*Algorithm for Management of Chronic Low Back Pain*



**Management of Chronic Pain...continued**

The following chart outlines the roles of various health professionals in the recommended multi-modal treatment regimen.

