Red Flags Advisory: Low Back Pain

Diagnosis/Condition:	Red Flags: Low Back Pain
Discipline:	Integrated
ICD-10 Codes:	N/A
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Introduction/Definition

Integrative care providers reading this advisory need to align recommendations with each profession's individual, allowable scope.

Red Flags in Medical literature refer to findings or symptoms that alert a provider to more in-depth investigation to formulate either a diagnosis, treatment plan, or referral. The following advisory defines situations within integrative professions that may constitute "red flags".

Red flags can include patient responses and findings on history taking, physical examination, imaging, and lab, that are associated with increased risk or provide an indication of a more serious disorder. These red flags should alert providers appropriately and may assist in the development of diagnoses, appropriate care plans, treatment, referral, additional testing, etc.

Red flags in medicine can be thought of as 'relative' or 'absolute'

- Most **'absolute'** red flags warrant further investigation and may also direct a provider away from potentially harmful treatment, such as manipulating a fracture, applying significant pressure to an abdominal aneurysm, or administering a contraindicated drug due to allergic reaction potential.
- A **'relative'** red flag signals less restrictive treatment options, requiring careful charting of provider-patient mutual decision making. For example, a 'relative' red flag in cancer care is to avoid treatments that provide pain relief yet proliferate cancer cells. The patient may decide to take the 'risk' of cancer cell proliferation in order to reduce pain. The 'relative' risk should be discussed, and a mutual treatment option may be carried out with proper charting.
- Both relative and absolute red flags are heavily dependent on clinically competent charting, describing findings, and a mutual discussion of the appropriate care plan.

- Charting should pass the test of patient, peer, and institutional oversight should questions arise.
- Differential diagnosis should be well defined by appropriate intake, patient history, subjective complaints, and objective findings that may include lab and radiology.

Subjective Findings - High Risk Factors/Intake/History and Red Flags

The history and intake of a patient should be considered 'subjective' until confirmed by supportive records, x-ray, or lab findings. Patients offer information, 'to the best of their ability', however, it can be misunderstood through no fault of their own. Medical history should include questions about whether symptoms predate a trauma that brought the patient in for treatment. The existence of a recent trauma does not rule out serious underlying disease, as 50% of low back pain due to cancer is associated with an initial report of trauma. Night pain is less frequently useful as a cancer red flag but is more of a concern if pain is severe, progressive, or unrelieved by position.

- **Non-malignant Red Flags** are defined as Neuromusculoskeletal (NMS) injury conditions that may mimic disease, infection, and/or cancerous conditions. When NMS symptoms overlap with disease or cancer states, differential diagnosis criteria must be ruled out and charted, to support clinically justified diagnosis and all aspects of care plans from treatment to potential referral.
- **Serious Disease Red Flags** are defined as infections, disease states and/or cancer states that have symptoms which may mimic common NMS injury conditions. Differential diagnosis criteria must be clinically justified and charted to support all aspects of care plans from treatment to potential referral.

Non-malignant Red Flags:

- Age over 50 may indicate a greater risk for serious disease.
- Back pain in patients under 20 is a red flag for organic disease.
- Malaise, loss of appetite, anorexia.
- Significant unexplained fatigue.
- Bilateral sciatica in patients over 50.
- Sciatica with non-dermatomal, unexplained onset, and/or sensory symptoms and/or neurological deficits without back pain.
- Sciatica non-responsive to treatment.
- Urinary changes (consider cauda equine and prostate disease). Also, gynecological, kidney, bladder disease.
- Multiple joint involvement (consider auto-immune/inflammatory disease).

- Sexual dysfunction (consider neoplasm, cauda equine, prostate, cardiovascular, renal disease).
- Abnormal menstrual bleeding/pain.
- Persistent GI or GU symptoms.
- Prior history of cancer must be investigated when new symptoms appear.
- Unexplained weight loss: weight loss of more than 10 pounds over 3 months is suspicious and can be associated with cancer, infection or auto-immune inflammatory disease.
- No relief of back pain with bed rest, or unvarying symptoms with exertion can be linked to cancer or infection.
- Lack of response to treatment in one month should alert to consideration of cancer, infection, inflammatory disease.
- Pain duration of greater than one month, and/or severe progressive pain over weeks to months should trigger investigation.
- New structural deformity.
- Lower extremity edema.
- Sudden onset or persistence of acute visceral or bilateral peripheral pain.

Serious Disease Red Flags

- Recent history of primary or recurrent bacterial infections.
- Worse pain when lying down, with relief sitting or flexing over a table may suggest abdominal malignancy, retroperitoneal lymphadenopathy, primary renal cancer, lymphoma, or testicular cancer.
- Increased susceptibility to infection.
- Current use of anti-coagulants.
- History of oral/IV corticosteroid use.
- History of diabetes with poor control.
- Sudden onset severe head pain, which can be indicative of circulatory problems, aneurysm, tumor, or cranial bleeding.
- Symptoms, risk factors, or treatment for HIV positivity.
- Connective tissue diseases e.g. autosomal dominant polycystic kidney disease, Ehlers-Danlos type IV, Marfan's syndrome, fibromuscular dystrophy.
- Abdominal Migraine.
- Vagus nerve symptoms and/or vascular spasm.
- Abdominal Aortic Aneurysm (AAA)
    - Throbbing or pulsating pain.
    - Lumbar pain, abdominal pain, possibly radiation to the hip, groin or buttock.
    - History of cardiovascular (CV) disease, atherosclerosis.
    - Diaphoresis or shortness of breath.

    - Family history of aortic abdominal aneurysm (AAA).
    - Smoking history.
    - Age 65 or older.

Low Back Pain - Infection Red Flags

- IV drug use possibly leading to infection.
- Immunosuppressed (e.g. steroids, transplant, HIV).
- Spinal pain that is intermittent to constant.
- Night pain. May progress to sharp and incapacitating.
- Suprapubic region pain with UTI.
- Pain with activity.
- Fever, sweats, chills.
- Pain with bone percussion.
- Recent or current bacterial infection (e.g. UTI) - particularly upper respiratory, associated with symptoms/diseases listed below, especially in patients less than 45 years of age:
    - Major and minor trauma, arterial hypertension, young age, current use of oral contraceptives, fibromuscular dysplasia, ultrastructural connective tissue abnormalities, vascular subtype of Ehlers-Danlos syndrome, Marfan syndrome, Turner syndrome, Williams syndrome (diabetes by age 30).
    - Familial/hereditary cases: hemochromatosis, osteogenesis imperfecta type I, alpha1-antitrypsin deficiency, vascular disease, hyperhomocysteinemia, autosomal-dominant polycystic kidney disease, moyamoya disease, glandular diseases associated with lentiginosis, vessel redundancies and or cardiac inversus (coils, kinks, loops) especially if bilateral.

Low Back Pain - Fracture Red Flags

Multiple red flags concurrently increase the likelihood of fracture.

- History of recent trauma.
- Diagnosis of osteopenia or osteoporosis.
- Dull ache to sharp.
- Pain at vertebral bodies and ribs.
- Sudden onset related to sneeze, lift, flexion, fall, MVA.
- Increased pain with flexion or activity.
- Increased kyphosis locally.
- Lumbar AROM restricted or with pain.
- Older age.
- Severe trauma.
- Prolonged corticosteroid use.
- Presence of contusion or abrasion.

Low Back Pain - Malignancy Red Flags

- History of malignancy (breast, prostate, lung, colorectal) but consideration should also be based on more than one "red flag" question.
- Risk factors associated with specific cancers-primary breast, lung, prostate cancer most common to metastases is to the spine.
- Age >50 or age <20-25.
- Unexplained weight loss (recent).
- Unremitting pain in axial skeleton.
- Insidious onset of pain.
- Night pain.
- Unexplained fatigue or malaise.
- No improvement in 4 to 6 weeks of therapy.
- Increased pain with ROM.

Low Back Pain - Spinal Cord or Cauda Equina Compression (Myelopathy)

- The predictive value of the following red flags only marginally raises the clinical suspicion of spinal cord compression: bowel and bladder dysfunction, saddle sensory disturbance.
- Unsteady gait and sensory disturbances.
- More common onset age 50 to 55.
- Recent trauma to lumbar spine.
- Pregnancy.
- Saddle paresthesia, numbness, urinary retention, and/or bowel, bladder incontinence.
- Non-specific lower extremity weakness.
- Sexual dysfunction.

Low Back Pain - Ankylosing Spondylitis Red Flags

- Age <40.
- More common in males (2 to 3:1 ratio).
- (+) family history.
- Back pain of at least 3 months duration improved by exercise, not by rest.
- Buttock and sacro-iliac pain.
- Morning stiffness >30 to 60 minutes.
- Night pain in second half of night.

Objective Findings

May require potential referral, additional exam procedures, additional records request, or review subjective information/symptoms to justify clinical impression. Objective findings should be based on substantiated subjective evidence, exams, evaluations, intake, and/or any past or new tests, radiology, etc.

Red Flags should be considered when

Physical exam findings for serious disease are found with:

- Neurological deficits in older people.
- "Alarm sign": during SLR test, when a patient with sciatica points to a specific location in the leg or pelvis that becomes aggravated, consider local mass.
- Pain with spinal percussion: exquisite, lingering pain localized over 1-2 spinous processes (consider cancer or spinal infection).
- Pronounced loss of hip flexor strength.
- Palpable mass.
- Significant bony tenderness, especially of more superficial bones.
- Vascular deficits such as loss of pulse (consider DVT and PAD).
- Spinal deformity such as acute kyphosis or scoliosis.
- Abdominal mass or bruit, generalized or localized visceral pain.

Ancillary Studies to be considered with low back pain

- Consider CBC, ESR, ANA reflex panels, CRP, Uric Acid and chemistry panels associated with symptoms.
- Consider advanced imaging if x-rays are negative and infection is suspected since infection may not show for 7-10 days on x-ray. A bone scan may be considered.

Referral/Co-management Criteria

- Consider co-management, if tests suggest cancer, or if it cannot be ruled out.
- Referral or instigate immediate antibiotic therapy if osseous infection is found.
- Diagnostic Imaging contraindicated in absence of alarming symptoms and signs in first 6 weeks of treatment of Cervical, Thoracic, Low Back pain.
- Diagnostic Imaging indicated after 4-6 weeks if no improvement when condition initially expected to be benign.
- Referral/Co-management criteria for low back pain:
    - Patient with cauda equina syndrome.
    - Progression of neurological symptoms.
    - Loss of motor function.
    - Unexplained sensory changes.
    - Patients with cancer, infection, or severe spinal deformity.
    - Patients who have not responded to treatment.
    - If patient exhibits radicular or claudication symptoms for more than 12 weeks.
    - MRI or CT confirmation of significant spinal stenosis.

Assessment

- Consider cancer, infection, stroke, autoimmune disease, abdominal artery dissection, Pelvic Inflammatory Disease (PID).

- Urgent musculoskeletal conditions that require prompt diagnosis: septic arthritis, acute crystal-induced arthritis (e.g. gout), and fracture. All suspected by acute onset and mono-articular or focal musculoskeletal pain.
- Many musculoskeletal conditions resemble each other at the outset, and some may take weeks or months to evolve into a readily recognizable diagnostic entity. This should strengthen the search for a definitive diagnosis on the first visit.

Plan

- Emergency Referral criteria:
    - A clinical presentation suggesting myocardial infarct (MI).
    - Suspected or confirmed fracture.
    - Abdominal aortic aneurysm (AAA).

Length of Treatment

Always reassess if patient does not recover with care at the expected rate or to the expected degree.

The Evidence

Red Flags in Orthopedics, Physical Therapy: https://www.scribd.com/doc/37000200/Red-Flags-in-Orthopedic-Physcial-Therapy

Pediatric Orthopedic Red Flags: March 16, 2017 Presenters: Jill Bennison, RN, MS, CPNP & Jennifer Weiner, RN MS, CPNP-AC/PC. https://www.napnap.org/sites/default/files/userfiles/Conferences/2017SpeakerHandouts/114-Weiner.pdf

Orthopedic Proceedings: Bone and Joint July 30, 2008. http://bjjprocs.boneandjoint.org.uk/content/90-B/SUPP_II/219.1

Family Practice Notebook: http://bjjprocs.boneandjoint.org.uk/content/90-B/SUPP_II/219.1
Physiopedia: http://www.physio-pedia.com/Red_Flags_in_Spinal_Conditions

UWS - Red Flags for Serious Disease Causing LBP- (updated 2007). https://www.uws.edu/cspe-protocols-care-pathways/

NIH - https://www.ninds.nih.gov/Disorders/Patient-Caregiver-Education/Fact-Sheets/Low-Back-Pain-Fact-Sheet

NCCIH Development of Red Flags Index for early referral of adults with symptoms and signs of Crohn's disease: An IOIBD Initiative. https://www.ncbi.nlm.nih.gov/pubmed/25908718

Clinical Advisory Feedback

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