

**Diagnostic Evaluation of LBP
Reaching a Specific Diagnosis Is Often Impossible**

**Archives of Internal Medicine
July 8, 2002;162:1444-1447**

Richard A. Deyo, MD, MPH; Dr. Deyo is from the University of Washington School of Medicine and is a Deputy Editor for Spine

THIS AUTHOR NOTES:

The present disease management paradigm in medicine “involves making a specific diagnosis of anatomic or physiologic derangements and selecting specific therapies that address them.”

“Unfortunately, this paradigm often fails us in the patient with LBP because the precise cause remains unclear in most cases.” **[Very Important]**

“Anatomic abnormalities can be readily identified by imaging studies, but most of these abnormalities are common even in healthy people. Thus, finding a cause for LBP is often difficult or impossible.” **[Very Important]**

Many patients with chronic pain syndromes may have central neuroplastic changes (neuronal hyperactivity, changes in membrane excitability, and expression of new genes) that perpetuate pain perception even in the absence of tissue injury. **[Very Important]**

Many patients have symptoms with little recognizable spinal abnormality.

A major diagnostic problem with LBP is that many anatomic abnormalities seen on x-rays, myelography, computed tomography (CT) and magnetic resonance imaging (MRI) are common in healthy individuals.

These abnormalities result from age-related degenerative changes which begin in early adulthood and are analogous to gray hair and wrinkles.

Determining whether degenerative changes have any causal relationship to symptoms is clinically challenging and sometimes impossible.

“Severe central canal stenosis, nerve root impingement, and extruded disks are uncommon in asymptomatic people and are likely to be diagnostically and clinically relevant.”

“Bulging disks are more common than not after age 50 years and have little if any association with symptoms.”

A recent randomized trial of 421 patients with back pain of at least 6 weeks' duration found that more than two thirds of the patients had x-ray abnormalities, including degenerative changes, deformity, and minor congenital abnormalities. [Kendrick D, Fielding K, Bentley E, et al. Radiography of the lumbar spine in primary care patients with low back pain: randomized control trial. BMJ. 2001;322:400-405]

This author suggests obtaining immediate plain x-rays on patients with red flags for underlying systemic disease.

This author suggests observing patients who have no red flags for 6 weeks prior to taking x-rays.

If pain is not substantially improved within 6 weeks, further diagnostic evaluation is appropriate, and the choice of imaging studies would depend on the clinical syndrome.

For patients with high probability of infection, malignancy, or vascular disease or who fail to improve within 6 weeks with conservative management, MRI or CT scanning is a logical next imaging step.

Dr. Deyo lists the following RED FLAGS that indicate a need for early imaging (x-rays or advanced imaging) in adults:

- 1) Major trauma, which includes "fall from height" and " motor vehicle crash." **[Quite important for those of us who treat motor vehicle collision cases]**
- 2) Being older than 50 years.
- 3) History of cancer.
- 4) Unexplained weight loss.
- 5) Fever, immunosuppression, immunodeficiency, injection drug use, or active infection.
- 6) Saddle anesthesia, bladder or bowel incontinence.
- 7) Severe or progressive neurologic deficit.

KEY POINTS FROM DAN MURPHY

- 1) The medical disease management paradigm that "involves making a specific diagnosis of anatomic or physiologic derangements and selecting specific therapies that address them" does not work for patients with LBP because the precise cause of the pain is "unclear in most cases." **[Very Important]**

- 2) "Anatomic abnormalities can be readily identified by imaging studies, but most of these abnormalities are common even in healthy people. Thus, finding a cause for LBP is often difficult or impossible." **[Very Important]**
- 3) Many patients with chronic pain syndromes may have central neuroplastic changes that perpetuate pain perception even in the absence of tissue injury. **[Very Important]**
- 4) Many patients with low back symptoms have no recognizable spinal abnormality.
- 5) Age-related degenerative changes begin in early adulthood and are analogous to gray hair and wrinkles.
- 6) Determining whether degenerative changes have any relationship to symptoms is clinically challenging and sometimes impossible.
- 7) "Severe central canal stenosis, nerve root impingement, and extruded disks are uncommon in asymptomatic people and are likely to be diagnostically and clinically relevant."
- 8) "Bulging disks are more common than not after age 50 years and have little if any association with symptoms."
- 9) Approximately two thirds of the patients with LBP have x-ray abnormalities, including degenerative changes, deformity, and minor congenital abnormalities.
- 10) One of the RED FLAG indications for performing x-rays of advanced imaging is being involved in a motor vehicle collision.