

Five Things Physicians and Patients Should Question

1 Don't perform fusion surgery to treat patients with mechanical axial low back pain from multilevel spine degeneration in the absence of:

- leg pain with or without neurologic symptoms and/or signs of concordant neurologic compression
- structural pathology such as spondylolisthesis or deformity.

For over half a century back pain has been the most common reason for spinal fusion. Yet there is no unequivocal evidence that fusion is superior to comprehensive conservative treatment for treating back pain without focal structural pathology and concordant mechanical or neurological symptoms. It is often impossible to locate the precise source of the pain; in many cases the symptoms are multifactorial and can encompass elements such as centralized pain that exist outside the spine. The extreme heterogeneity of the low back pain population leads to unpredictable surgical results and consistently poor outcomes in those with pain from multilevel spine degeneration.

2 Don't routinely image patients with low back pain regardless of the duration of symptoms unless:

- there are clinical reasons to suspect serious underlying pathology (i.e., red flags)
- imaging is necessary for the planning and/or execution of a particular evidenced-based therapeutic intervention on a specific spinal condition.

Unless the image has a direct bearing on the treatment decision it is not required. Spinal "abnormalities" in asymptomatic individuals are common and increase with age. For those with back dominant symptoms (i.e., axial back pain) there is an extremely high false positive rate; most of the findings have no correlation with the clinical picture. For the majority of low back complaints obtaining spinal imaging does not improve patient care but can lead to inappropriate interventions and does have a detrimental impact on patient outcomes. Red flags include cauda equina syndrome; severe or progressive neurologic deficits; suspected cancer; suspected infection; suspected fracture and suspected epidural abscess or hematoma.

3 Don't use epidural steroid injections (ESI) for patients with axial low back pain who do not have leg dominant symptoms originating in the nerve roots.

Steroids are potent anti-inflammatory agents, but axial low back pain is not primarily an inflammatory condition and any inflammation that does exist generally cannot be accessed via the spinal canal. The outcomes of ESI for axial low back pain are poor compared to its use in radiculopathy due to disc herniation. Although serious adverse events are rare, catastrophic events can occur and any symptom relief from the injection typically lasts only for a matter of weeks. The inconsequential benefits of ESI for axial low back pain do not outweigh its risks, no matter how small they may be.

4 Don't miss the opportunity to brace the skeletally immature patient with adolescent idiopathic scoliosis (AIS) who has more than one year of growth remaining and a curve magnitude greater than 20 degrees.

Significant controversy still exists regarding the use of bracing in AIS patients at risk for curve progression and eventual surgery. A recent high-level study has convincingly shown that bracing impacts the natural history of AIS and, in those properly braced, significantly reduces the need for a subsequent operation. In light of the resulting decrease in the indications for surgical intervention, the bias against bracing should be reevaluated.

5 Don't order peri-operative antibiotics beyond a 24-hour post-operative period for non-complicated instrumented cases in patients who are not at high risk for infection or wound contamination. Administration of a single pre-operative dose for spine cases without instrumentation is adequate.

Although a deep surgical site infection associated with spinal implants can be a devastating adverse event, the prolonged use of peri-operative antibiotics has not been shown to reduce the incidence. Their extended use in routine low risk cases has no proven evidence of benefit but increases the chance of creating resistant bacterial strains. A rational, evidence-based approach is required.

How the list was created

The Canadian Spine Society (CSS) established its *Choosing Wisely Canada* Top 5 recommendations by compiling a committee of experts who took suggestions from the general membership and created a seven item preliminary statement. This was circulated to all the CSS members by email and they were asked to vote their order of preference and suggestions for wording as well as to add any topic they believed should be included. The amended list was recirculated, revised and sent to the membership for a third time. This list is the final agreed result.

Sources

- 1** Chou R, Baisden J, Carragee EJ, Resnick DK, Shaffer WO, Loeser JD. Surgery for low back pain: a review of the evidence for an American Pain Society Clinical Practice Guideline. *Spine (Phila Pa 1976)*. 2009 May 1;34(10):1094-109.
Jacobs WC, Rubinstein SM, Koes B, van Tulder MW, Peul WC. Evidence for surgery in degenerative lumbar spine disorders. *Best Pract Res Clin Rheumatol*. 2013 Oct;27(5):673-84.
- 2** Chou R, Qaseem A, Owens DK, Shekelle P; Clinical Guidelines Committee of the American College of Physicians. Diagnostic imaging for low back pain: advice for high-value health care from the American College of Physicians. *Ann Intern Med*. 2011 Feb 1;154(3):181-9.
- 3** Benyamin RM, Manchikanti L, Parr AT, Diwan S, Singh V, Falco FJ, et al. The effectiveness of lumbar interlaminar epidural injections in managing chronic low back and lower extremity pain. *Pain Physician*. 2012 Jul-Aug;15(4):E363-404.
Choi HJ, Hahn S, Kim CH, Jang BH, Park S, Lee SM, et al. Epidural steroid injection therapy for low back pain: a meta-analysis. *Int J Technol Assess Health Care*. 2013 Jul;29(3):244-53.
Cohen SP, Bicket MC, Jamison D, Wilkinson I, Rathmell JP. Epidural steroids: a comprehensive, evidence-based review. *Reg Anesth Pain Med*. 2013 May-Jun;38(3):175-200.
- 4** Weinstein SL, Dolan LA, Wright JG, Dobbs MB. Effects of bracing in adolescents with idiopathic scoliosis. *N Engl J Med*. 2013 Oct 17;369(16):1512-21.
- 5** Shaffer WO, Baisden JL, Fernand R, Matz PG; North American Spine Society. An evidence-based clinical guideline for antibiotic prophylaxis in spine surgery. *Spine J*. 2013 Oct;13(10):1387-92.

About Choosing Wisely Canada

Choosing Wisely Canada is a campaign to help physicians and patients engage in conversations about unnecessary tests, treatments and procedures, and to help physicians and patients make smart and effective choices to ensure high-quality care.

For more information on *Choosing Wisely Canada* or to see other lists of Five Things Physicians and Patients Should Question, visit www.choosingwiselycanada.org. Join the conversation on Twitter @ChooseWiselyCA.

About The Canadian Spine Society

The Canadian Spine Society (CSS) is a proud partner of the *Choosing Wisely Canada* campaign. The CSS is a collaborative body of Canadian Neurosurgical and orthopaedic spine surgeons and other spine care professionals with a primary interest in advancing excellence in spine patient care, research and education. The CSS serves as the umbrella group for the leading spine-related organizations across Canada and maintains strong partnerships with The Rick Hansen Institute and major Canadian universities.