

## Overtreating Chronic Back Pain: Time to Back Off?

**The Journal of the American Board of Family Medicine  
Volume 22 Number 1, January 2009, pp. 62–68**

Richard A. Deyo, MD, MPH, Sohail K. Mirza, MD, MPH, Judith A. Turner, PhD and Brook I. Martin, MPH  
Department of Medicine, Oregon Health and Science University, Portland (RAD)  
Department of Orthopaedics (SKM, BIM), University of Washington, Seattle  
Department of Psychiatry (JAT), University of Washington, Seattle

### FROM ABSTRACT:

Chronic back pain is among the most common patient complaints. Its prevalence and impact have spawned a rapidly expanding range of tests and treatments. Some of these have become widely used for indications that are not well validated, leading to uncertainty about efficacy and safety, increasing complication rates, and marketing abuses.

Recent studies document increases in Medicare expenditures:

- 1) A 629% increase for epidural steroid injections
- 2) A 423% increase in expenditures for opioids for back pain
- 3) A 307% increase in the number of lumbar magnetic resonance images
- 4) A 231% increase in facet joint injections
- 5) A 220% increase in spinal fusion surgery rates

The limited studies available suggest that these increases have not been accompanied by population-level improvements in patient outcomes or disability rates.

We suggest a need for a better understanding of the basic science of pain mechanisms, more rigorous and independent trials of many treatments, a stronger regulatory stance toward approval and post-marketing surveillance of new drugs and devices for chronic pain, and a chronic disease model for managing chronic back pain.

### THESE AUTHORS ALSO NOTE:

“Pain complaints are a leading reason for medical visits. The most common pain complaints are musculoskeletal, and back pain is the most common of these.”

“The prevalence and impact of back pain have led to an expanding array of tests and treatments, including injections, surgical procedures, implantable devices, and medications. Each is valuable for some patients, but use may be

expanding beyond scientifically validated indications, driven by professional concern, patient advocacy, marketing, and the media.”

Although approximately 25% of US adults reported back pain during the past 3 months, this percentage has not changed for decades.

Expanded testing and treatment for back pain have not improved outcomes, but have increased complications, including deaths.

Manufacturers aggressively promote new drugs and devices for the treatment of back pain, yet there is evidence of misleading advertising, kickbacks to physicians, and major investments by surgeons in the products they are investigating.

The use of lumbar magnetic resonance imaging (MRI) has increased dramatically, and spinal surgery rates are highest where imaging rates are highest. Approximately 33 – 66% of spinal computed tomography (CT) imaging and MRI may be inappropriate.

“Many factors probably underlie the growth of imaging, including patient demand, the compelling nature of visual evidence, fear of lawsuits, and financial incentives.”

“One problem with inappropriate imaging is that it may result in findings that are irrelevant but alarming.”

“Positive findings, such as herniated disks, are common in asymptomatic people.”

Positive imaging findings result in more surgery and higher costs than those receiving plain x-rays, but the clinical outcomes are no better, including subsequent pain, function, quality of life, or overall improvement.

“Based on an extensive systematic review, the joint guidelines of the American College of Physicians and the American Pain Society explicitly recommend against routine imaging in patients with nonspecific low back pain (ie, no severe or progressive neurologic deficits or evidence of serious underlying conditions).”

## **Opioid Analgesics**

Prescription opioid use is steadily increasing, especially for musculoskeletal conditions. Emergency department reports of opioid overdose parallel the numbers of prescriptions. Deaths related to prescription opioids are greater than the combined total involving cocaine and heroin.

Cancer patients tend not to take opioids for long periods of time because they die. In contrast, patients taking opioids for back pain can do so for decades. More than half of the prescriptions for opioids are for back pain, and consequently they constitute a major portion of those with opioid consumption complications.

The Cochrane Collaboration review of opioids for chronic low back pain concluded:

“Despite concerns surrounding the use of opioids for long-term management of chronic [low back pain], there remain few high-quality trials assessing their efficacy... Based on our results, the benefit of opioids in clinical practice for the long-term management of chronic [low back pain] remains questionable.”

“Many patients receiving opioids for noncancer pain have persistent high levels of pain and poor quality of life.”

Ironically, “opioid use may paradoxically increase sensitivity to pain.”

Chronic use of opioids may also cause hypogonadism, reduced testosterone levels, diminished libido, and erectile dysfunction.

### **Spinal Injections**

“The efficacy of spinal injections is limited. Epidural corticosteroid injections may offer temporary relief of sciatica, but both European and American guidelines, based on systematic reviews, conclude they do not reduce the rate of subsequent surgery.”

“Facet joint injections with corticosteroids seem no more effective than saline injections.”

“For patients with axial back pain without sciatica there is no evidence of benefit from spinal injections; however, many injections given to patients in the Medicare population seemed to be for axial back pain alone.”

### **Spine Surgery**

Spine fusion surgery is limited when treating degenerative discs with back pain with no sciatica, yet they have increased 220% from 1990 to 2001 in the United States.

“Higher spine surgery rates are sometimes associated with worse outcomes.”

In a 1999 study published in the *Journal of Bone and Joint Surgery*, the best outcomes occurred where surgery rates were lowest, and the worst results occurred in areas where surgery rates were highest.

New and improved fusion techniques and devices such as implants, increase the risk of nerve injury, blood loss, overall complications, operative time, and repeat surgery, but do not result in improved disability or reoperation rates.



Increases in the rates of imaging, opioid prescriptions, injections, and fusion surgery might be justified if there were substantial improvements in patient outcomes; unfortunately, they do not. In fact, statistics indicate that disability from musculoskeletal disorders is rising, not falling.

“Prescribing yet more imaging, opioids, injections, and operations is not likely to improve outcomes for patients with chronic back pain.”

“There are no ‘magic bullets’ for chronic back pain, and expecting a cure from a drug, injection, or operation is generally wishful thinking.”

“Chronic back pain, like diabetes or asthma, is a condition we can treat but rarely cure,” and its management may “benefit from sustained commitment from health care providers; involvement of patients as partners in their care; education in self-care strategies; coordination of care; and involvement of community resources to promote exercise, provide social support, and facilitate a return to work.”

#### KEY POINTS FROM DAN MURPHY

- 1) “Pain complaints are a leading reason for medical visits. The most common pain complaints are musculoskeletal, and back pain is the most common of these.”
- 2) “The prevalence and impact of back pain have led to an expanding array of tests and treatments, including injections, surgical procedures, implantable devices, and medications. Each is valuable for some patients, but use may be expanding beyond scientifically validated indications, driven by professional concern, patient advocacy, marketing, and the media.”
- 3) Although approximately 25% of US adults reported back pain during the past 3 months, this percentage has not changed for decades.

- 4) Expanded testing and treatment for back pain have not improved outcomes, but have increased complications, including deaths.
- 5) “Chronic back pain is among the most common patient complaints.”
- 6) There are increases in Medicare expenditures for back pain diagnostics and treatments, as follows:
  - A) A 629% increase for epidural steroid injections
  - B) A 423% increase in expenditures for opioids for back pain
  - C) A 307% increase in the number of lumbar magnetic resonance images
  - D) A 231% increase in facet joint injections
  - E) A 220% increase in spinal fusion surgery rates
- 7) These increases have not improved in patient outcomes or disability rates.
- 8) Manufacturers aggressively promote new drugs and devices for the treatment of back pain, yet there is evidence of misleading advertising, kickbacks to physicians, and major investments by surgeons in the products they are promoting.
- 9) The use of lumbar magnetic resonance imaging (MRI) has increased dramatically, and spinal surgery rates are highest where imaging rates are highest.
- 10) Approximately 33 – 66% of spinal computed tomography (CT) imaging and MRI may be inappropriate.
- 11) “Many factors probably underlie the growth of imaging, including patient demand, the compelling nature of visual evidence, fear of lawsuits, and financial incentives.”
- 12) “One problem with inappropriate imaging is that it may result in findings that are irrelevant but alarming.”
- 13) “Positive findings, such as herniated disks, are common in asymptomatic people.”
- 14) Positive imaging findings result in more surgery and higher costs than those receiving plain x-rays, but the clinical outcomes are no better, including subsequent pain, function, quality of life, or overall improvement.
- 15) Prescription opioid use is steadily increasing, especially for musculoskeletal conditions. Emergency department reports of opioid overdose parallel the numbers of prescriptions. Deaths related to prescription opioids are greater than the combined total involving cocaine and heroin.

- 16) Cancer patients tend not to take opioids for long periods of time because they die. In contrast, patients taking opioids for back pain can do so for decades. More than half of the prescriptions for opioids are for back pain, and consequently they constitute a major portion of those with opioid consumption complications.
- 17) The benefit of opioids drugs in clinical practice for the long-term management of chronic low back pain is questionable.
- 18) Ironically, “opioid use may paradoxically increase sensitivity to pain.”
- 19) Chronic use of opioid drugs may also cause hypogonadism, reduced testosterone levels, diminished libido, and erectile dysfunction.
- 20) “Epidural corticosteroid injections may offer temporary relief of sciatica, but both European and American guidelines, based on systematic reviews, conclude they do not reduce the rate of subsequent surgery.”
- 21) “Facet joint injections with corticosteroids seem no more effective than saline injections.”
- 22) “For patients with axial back pain without sciatica there is no evidence of benefit from spinal injections.”
- 23) Spine fusion surgery is limited when treating degenerative discs with back pain with no sciatica, yet they have increased 220% from 1990 to 2001 in the United States.
- 24) “Higher spine surgery rates are sometimes associated with worse outcomes.”
- 25) New and improved fusion techniques and devices such as Implants, increase the risk of nerve injury, blood loss, overall complications, operative time, and repeat surgery, but do not result in improved disability or reoperation rates.
- 26) Increases in the rates of in imaging, opioid prescriptions, injections, and fusion surgery might be justified if there were substantial improvements in patient outcomes; unfortunately, they do not. In fact, statistics indicate that disability from musculoskeletal disorders is rising, not falling.
- 27) “Prescribing yet more imaging, opioids, injections, and operations is not likely to improve outcomes for patients with chronic back pain.”

28) “There are no ‘magic bullets’ for chronic back pain, and expecting a cure from a drug, injection, or operation is generally wishful thinking.”

29) “Chronic back pain, like diabetes or asthma, is a condition we can treat but rarely cure,” and its management may “benefit from sustained commitment from health care providers; involvement of patients as partners in their care; education in self-care strategies; coordination of care; and involvement of community resources to promote exercise, provide social support, and facilitate a return to work.”

#### COMMENT FROM DAN MURPHY

In the 10 years that we have been doing these Article Reviews, we have seen a number of studies that show that spinal adjusting is highly effective, safe, cost effective, and results in long-termed stable outcomes in the treatment of chronic low back pain.