

# Spine Surgery



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*X-ray/spine*

## CONVENIENT ACCESS

Beverly Hospital provides advanced orthopedic spine surgery and comprehensive, coordinated care for patients with spine disease.

Patients benefit from

- Ready, easy access to North Shore office locations and hospital resources
- Immediate emergent care and timely referral appointments
- Convenient office locations on the North Shore, which include:

### **Coastal Orthopedic Associates**

The Medical Building  
77 Herrick Street  
Beverly, MA 01915  
978-927-3040

Beverly Hospital at Danvers  
Medical and Day Surgery Center  
480 Maple Street  
Danvers, MA 01923  
978-927-3040

### **New England Orthopedic Specialists**

4 Centennial Drive  
Peabody, MA 01960  
978-531-0800

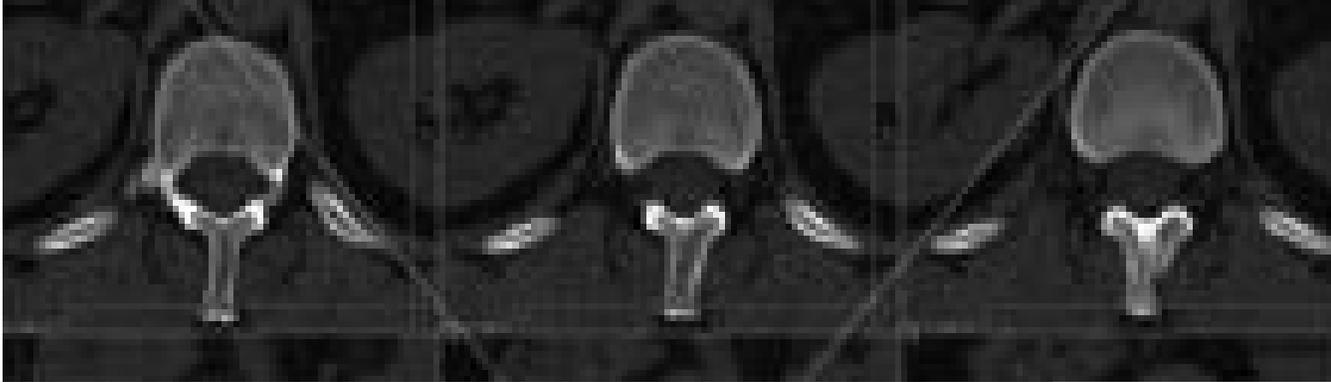
Beverly Hospital at Danvers  
Medical and Day Surgery Center  
480 Maple Street  
Danvers, MA 01923  
978-531-0800

### **Sports Medicine North Orthopedic Surgery**

Orthopedics Specialty Center  
One Orthopedics Drive  
Peabody, MA 01960  
978-818-6350

Visit [beverlyhospital.org](http://beverlyhospital.org) for more information on orthopedic spine surgery at Beverly Hospital.

*Front cover:  
Bone scan of the spine*



## ADVANCED CARE CLOSE TO HOME

Spine capabilities include the gamut of noninvasive, invasive and minimally invasive spine intervention, featuring advanced surgical techniques and multidisciplinary care. Patients benefit from:

- Tertiary spine surgery and treatment within the Beverly Hospital community for continuity of care, and without the inconvenience of going to Boston
- Board certified, fellowship trained spine surgeons, skilled and experienced, and on par with downtown colleagues
- Ready and easy access to quality services including preoperative teaching, tests, labs and postoperative rehabilitation
- Radiology and imaging services with 3T MRI and 64-slice CT scanners to assist with preoperative treatment planning and postoperative follow-up
- Integrated Spine and Pain Management Centers at the new Beverly Hospital at Danvers Medical and Day Surgery Center
- Center for Rehabilitation and Sports Medicine with therapists who have specific expertise in cervical and lumbar spine
- Plenty of free parking

## COLLABORATING WITH COLLEAGUES

Spine surgeons work closely with the referring community and offer primary care physicians immediate access and consultation for emergent patients, and timely appointments. Surgeons brief the referring community on patient progress via

phone, email and fax. Evidence-based practices, digital images and studies, growing reliance on electronic medical records, and prompt medical reports enhance service to referring colleagues and expedite patient treatment plans.

## WHEN TO REFER

Back and neck problems are epidemic, plaguing 80 percent of the American public at one time or another. Most are self-limiting and resolve within two to four weeks. Initial treatment by a primary care physician is most appropriate and includes anti-inflammatory medications, ice, heat, pain medicine and gradual mobilization and resumption of activities.

The **red flag** exceptions that call for early referral to an orthopedic spine surgeon are:

- Night pain
- Severe constitutional symptoms
- Associated cancers
- Loss of bowel and bladder control
- Severe neurologic deficit

Spine surgeons welcome the opportunity to provide second opinions, as well as to evaluate patients who do not respond to early, conservative treatment for cervical, thoracic and lumbar disorders.

# CONDITIONS AND SYMPTOMS

Spine surgeons treat or coordinate care with primary care physicians, other specialists, and/or the Beverly Hospital Spine and Pain Management Centers for a range of conditions and symptoms such as:

- Radiating neck, arm, and back or sciatica pain (cervical and lumbar radiculopathy, and neurologic compression of the cervical or lumbar spine) typically caused by herniated disc, degenerative disc disease or spinal stenosis
- Cervical and lumbar stenosis
- Myelopathy
- Spondylolisthesis, either degenerative or isthmic

- Acute and chronic low back pain including arthritis, myofascial pain and osteoporosis
- Compression fractures
- Spinal tumors
- Spinal infections

Spine surgeons within the Beverly Hospital community treat all manner of back pain, spinal conditions, deformity and tumors, with few exceptions. In rare instances, they will refer unusually complex spine surgery cases (such as catastrophic paralysis, intradural tumors or vascular malformations) to affiliated downtown tertiary institutions.

# LEADING EDGE TREATMENT

Care begins with careful evaluation, and specialty diagnostics as needed featuring sophisticated imaging modalities such as 3T MRI, CT studies and bone scans, among others. Coordinated services focus on conservative and noninvasive procedures (injection and/or physical therapy) with progression to surgical treatment as appropriate.

Comprehensive surgical expertise ranges from traditional to state-of-the-art procedures, with proficiency in minimally invasive technique. Advances in less invasive techniques to minimize collateral tissue damage enable spine surgeons to do the least amount of surgery to derive the maximum amount of benefit. In addition to fracture and tumor treatment, surgical procedures of note include:

## Cervical Spine

- Anterior cervical discectomy and fusion (ACDF) including cervical discarthroplasty
- Artificial disc replacement
- Posterior decompression and fusion

## Thoracic Spine

- Kyphoplasty

## Lumbar Spine

- Anterior lumbar interbody fusion (ALIF)
- Artificial disc replacement
- Microdecompressions and fusions, including open approach and X-Stop
- Dynamic stabilization
- Laminectomy
- Lateral lumbar interbody fusion (XLIF)

- Microdiscectomy
- Microforaminotomy/laminotomy
- Posterior procedures including posterior lumbar interbody fusion (PLIF) and transforaminal lumbar interbody fusion (TLIF)

*MRI of the lumbar sacral spine*



## ADVANCED TECHNIQUES

Some of the more sophisticated spine expertise and techniques within the Beverly Hospital community include the following procedures:

**Artificial disc replacement:** an emerging alternative to spine fusion that replaces a degenerative disc with prosthetic material.

**Dynamic stabilization:** an alternative to traditional fusion that relieves pain and promotes motion in the affected area of the spine, for more flexibility and less likelihood of secondary pain on the adjacent spine levels.

**Interventional pain management:** in collaboration with spine surgeons, the Beverly Hospital Pain Management Center offers injection therapies, percutaneous disc decompression (to shrink contained herniated discs without surgery) and implantable techniques (such as spinal cord stimulation and intrathecal pumps) to treat upper and lower back pain.

**Kyphoplasty:** a minimally invasive, percutaneous procedure using bone cement to treat vertebral compression fractures related to osteoporosis. Through two tiny incisions, surgeons insert an inflatable bone tamp into the spinal column and use inflated balloons to help raise the collapsed vertebra. The balloons are deflated and removed, leaving a cavity within the bone, which is then filled with cement to support the surrounding area, prevent further collapse, and form an internal cast to keep the vertebra in place.

**Microdecompression:** a comprehensive term for several types of operations – including microdiscectomy, microforaminotomy, laminotomy and laminectomy – to relieve pressure on the spinal nerves by enlarging the space where the affected nerve exits the cervical or lumbar spinal canal. The surgeon removes a minimal amount of bone, over the affected nerve, and the underlying disc material, to relieve pain. The procedure is performed with minimal alteration of the mechanical structure of the spine.

**Spinal fusion:** a number of techniques, all of which introduce bone graft material, typically with hardware, using either a posterior, anterior or lateral approach to treat principally disc degeneration, fractures, certain types of spinal deformity, spondylolisthesis and/or spinal instability. These procedures include:

- Anterior cervical discectomy and fusion (ACDF): an operation through the front of the neck to remove all or part of the disc and fill the space with a bone graft.
- Posterior lumbar interbody fusion (PLIF): surgeons access the spine through the lower back to remove the damaged disc and fill the empty disc space (interbody) with bone graft material.
- Anterior lumbar interbody fusion (ALIF): a procedure similar to PLIF, except the surgeon approaches the spine through the abdomen instead of the lower back to fuse the disc space.
- Transforaminal lumbar interbody fusion (TLIF): an open or minimally invasive procedure similar to PLIF, except the surgeon inserts the bone graft material from the side instead of the back.
- Lateral lumbar interbody fusion (XLIF): a minimally invasive procedure whereby the surgeon makes two small incisions in the patient's side to spare major muscles in the back.
- Percutaneous posterior instrumentation: percutaneous placement of hardware for stabilization, often used as an adjunct to other fusion procedures.

**X-Stop:** a titanium implant placed percutaneously to open the space in the spinal canal (under local anesthesia, without surgery) to relieve radiating pain from stenosis (pinched nerves).

*A fluoroscopy image of a diagnostic and therapeutic selective nerve root block.*



## NEW EQUIPMENT OFFERS ADDED CAPABILITY

Beverly Hospital has made a significant capital investment in a new, state-of-the-art OEC® 9900 Elite C-arm system from GE Healthcare to offer increasingly sophisticated spine surgery procedures.

The new fluoroscopy system, with its innovative “precision imaging” technology, is based in the Beverly Hospital operating room. Precision imaging enhances picture quality by sharpening images and improving contrast. The superb imagery benefits patients by making it easier for spine surgeons to localize difficult-to-reach anatomy, avoid critical structures, and guide the selection and placement of

hardware – all with less fluoro exposure. Additionally, the system expedites procedures for enhanced overall operating room capacity.

Complementing the C-arm is a new microscope from Leica Microsystems, specializing in high-tech and innovative precision optics. The surgical microscope optimizes the surgeon’s view, and features true-life color reproduction and an advanced movement system for perfect balance, among other enhancements, to further expand on minimally invasive procedures.

## CARE INTEGRATION WITH SPINE AND PAIN MANAGEMENT CENTERS

The Beverly Hospital Spine Center provides consultation, diagnosis and treatment for patients with acute or established conditions of the spine, with a focus on physical and rehabilitation medicine. Physiatrists and physical therapists help minimize or eliminate pain, restore maximum function, and develop a personal spine management plan for long-term success.

The Beverly Hospital Pain Management Center, a multidisciplinary outpatient service, treats back, neck and musculoskeletal pain. Patients benefit from interventional procedures (such as injections

and implantable techniques) and services to include complementary therapies and behavioral health counseling.

The Pain Management Center also offers percutaneous disc decompression which uses thermal energy to shrink contained herniated discs, eliminating the need for large incisions in the side or back.

Both the Spine and Pain Management Centers are located in the recently opened Beverly Hospital at Danvers Medical and Day Surgery Center.

## ANCILLARY SERVICES FOR SPINE SECOND TO NONE

**Nursing Excellence:** Patients benefit from nursing proficiency and experience in the operating room and on the floor. Nurses and therapists at the bedside are dedicated to restoring patients to prior levels of functional strength as quickly as possible. They provide compassionate care, anticipate patient and physician needs, and use their teaching and communication skills to expedite patient recovery and discharge.

**Center for Rehabilitation and Sports Medicine:** Therapists specialize in cervical and lumbar spine rehabilitation, offering inpatient and outpatient physical and occupational therapy. Care is progressive, individualized and convenient, with early morning, evening and Saturday appointments. Open lines of communication among physicians and team members across the care continuum benefit patients who undergo surgery here and then opt for outpatient rehab within the system.

**Short-term Rehabilitation Facilities:** Northeast Health System also offers short-term orthopedic rehabilitation at the Ledgewood Rehabilitation and Nursing Center on the Beverly Hospital campus, and at the Seacoast Nursing and Rehabilitation Center on the Addison Gilbert Hospital campus in Gloucester. Patients can be referred to a short-term rehabilitation facility that is most convenient and appropriate for them.

**Home-based Services:** Northeast Homecare, a Medicare-certified home health agency, provides orthopedic patients 65 years and older with physical and occupational therapy, and skilled nursing services. North Shore PRN, a private-duty homecare agency, also provides assistance and support to at-home seniors. Northeast Health System owns both agencies. Additionally, patients of all ages in the surrounding communities have access to other sources of home-based medical and rehabilitation support and home health services.



*A 3T MRI image of the T2 sagittal thoracic spine. 3T MRI, located in the new Beverly Hospital at Danvers Medical and Day Surgery Center, offers increased spatial resolution and superb image quality for enhanced diagnostic accuracy.*

# Spine Surgery



## DIRECTORY OF SPINE SURGEONS

The following physicians specialize in orthopedic spine surgery:

### **Steven C. Hollis, MD**

Coastal Orthopedic Associates  
978-927-3040

**Board Certification:** Orthopedic Surgery

**Clinical Interests:**

- Lumbar microdiscectomy
- Lumbar decompression
- Lumbar posterior fusion procedures

### **David B. Lovejoy, MD**

New England Orthopedic Specialists  
978-531-0800

**Board Certification:** Orthopedic Surgery

**Clinical Interests:**

- Lumbar decompression
- Lumbar laminotomy
- Lumbar spine procedures

### **Richard M. Ozuna, MD\***

Sports Medicine North Orthopedic Surgery  
978-818-6350

**Board Certification:** Orthopedic Surgery

**Fellowship:** Spine Surgery

**Clinical Interests:**

- Cervical and lumbar spine disorders
- Disc herniation, radiculopathy and degenerative disorders
- Fracture and tumor treatment
- Osteoporotic compression fractures
- Minimally invasive spine surgery
- Work-related back and neck injuries

### **Jeremy M. Shore, MD\***

Sports Medicine North Orthopedic Surgery  
978-818-6350

**Board Certification:** Orthopedic Surgery

**Fellowship:** Spine Surgery

**Clinical Interests:**

- Cervical and lumbar spine disorders
- Disc herniation, radiculopathy and degenerative disorders
- Fracture and tumor treatment
- Osteoporotic compression fractures
- Minimally invasive spine surgery
- Work-related back and neck injuries

### **John B. Sledge III, MD\***

Sports Medicine North Orthopedic Surgery  
978-818-6350

**Board Certification:** Orthopedic Surgery

**Fellowship:** Spine and Hip Surgery

**Clinical Interests:**

- Cervical and lumbar spine disorders
- Disc herniation, radiculopathy and degenerative disorders
- Fracture and tumor treatment
- Osteoporotic compression fractures
- Minimally invasive spine surgery
- Work-related back and neck injuries

\* Member, North American Spine Society (NASS)