

Neurospine Center



Stanford Neuroscience Health Center

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The Team

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The Stanford Neurospine Center provides comprehensive neurosurgical spine care to treat a wide range of spinal disorders.

Spine Disorders Team

Our team is devoted to advancing spine care by providing patients the highest level of expertise and latest technologies. Patients have access to a multidisciplinary team of fellowship trained spine neurosurgeons, neuroradiologists, neurodiagnosticians, neurologists, psychiatrists, neuropsychiatrists, pain specialists, advanced practice providers and nursing staff.

Research

The Stanford Neurospine Center is a leader in outcomes research and is currently developing patient-specific outcomes metrics that will be tracked longitudinally as part of routine clinic practice. Improving the quality of life for our patients remains firmly at the center of our mission, and understanding each patient's ambitions helps us achieve such goals. Similarly, Stanford clinicians were involved in the only nationwide trial of stem cell therapies for spinal cord injury patients; we will continue to contribute to advancing spine care through ongoing research activities. Current research topics of interest include:

- Reducing the incidence of complications in spine surgery procedures and making surgical techniques safer
- Studying the patient disease process and outcomes for these procedures
- Improving minimally invasive spinal surgery techniques and care for primary and metastatic spinal tumors via CyberKnife radiosurgery and surgical oncology
- Developing medical devices and leading-edge technology for treating spinal tumors and spinal disorders
- Evaluating non-fusion dynamic spinal stabilization, artificial disc technologies and regenerative spinal technologies
- Stem cell therapies in spinal cord injury
- Improving surgical time and reducing pain with navigated, robotic spine surgery

Surgical Spine Treatments

Stanford spine experts provide a complete range of spinal surgery services to treat diseases of the cervical, thoracic, and lumbar spine. Treatments include:

- Discectomies and decompressions (cervical, thoracic and lumbar)
- Lumbar fusion (anterior/posterior) - open and minimally invasive
- Complex spinal reconstruction
- Craniovertebral junction reconstruction
- Skull base spine surgery
- Spinal cord and spine tumor surgery
- Artificial disc replacement
- Vertebroplasty/kyphoplasty
- Pediatric spinal reconstruction
- Comprehensive spine trauma surgery
- CyberKnife stereotactic radiosurgery for spine tumors
- Reconstructive peripheral nerve surgery
- Robotic and Navigated Spine Surgery
- Minimally invasive spinal fusion surgery

Minimally Invasive Treatment

Stanford patients have access to minimally invasive spine surgery (MISS) treatments that lead to faster recovery and less discomfort, including minimally invasive discectomies and back fusions, vertebroplasty/kyphoplasty for vertebral fractures, as well as stereotactic radiosurgery for spine tumors. MISS takes advantage of recent advances in video endoscopy, intra-operative navigation, robotic assistance, and specially developed surgical instruments and spinal instrumentation to access and repair the spine through small (1 cm) portals. Outcomes from MISS procedures demonstrate less discomfort, incisional pain, blood loss, shortened operative time, faster return to work, and fewer anesthetic complications. Patients leave the hospital sooner and recover more quickly. Stanford has pioneered the use of MISS in combination with robotics and navigation, and is applying MISS techniques a wide range of spinal disorders.

Non-Surgical Spine Treatments

Operating within the Stanford Spine Center, the Interventional Spine Program is an outpatient program focusing on the conservative and non-operative management of neck, back, hip, shoulder and musculoskeletal pain syndromes. The program's emphasis is on restoring function and alleviating pain. It is unique in offering a full continuum of services from evaluation and diagnosis to custom physical therapy, targeted medications and injections. Interventional spine services include:

- Epidural steroids (cervical epidural steroid injections)
- Trigger point injections
- Joint injections
- Facet joint injections
- Nerve root blocks
- Diagnostic injections
- Discography
- Vertebroplasty and kyphoplasty
- Radiofrequency lesioning
- Percutaneous discectomy