BOMBAY SPINE CLINIC

Dr. Siddharth Katkade • Consultant Spine Surgeon

MBBS, MS, DNB, FASSI (Germany, UK – AO Spine)

Appointments & Helpline: +91 88507 73095
Email: siddharthkatkade@gmail.com
Clinics: Masina Hospital, Byculla (E) & Khar (W), Mumbai
Website: bombayspineclinic.com

Minimally Invasive Spine Fixation - Bombay Spine Clinic

- Minimally Invasive Spine Fixation (MIS Fixation)

What Is MIS Fixation Surgery?

- Minimally Invasive Spine Fixation (MIS Fixation) is an advanced spine surgery performed to stabilise the spine using specially designed screws and rods inserted through small skin incisions instead of a large open incision.
- This procedure is recommended when the spine has become unstable due to conditions such as fractures, spondylolisthesis, spinal infections, tumours or degenerative disorders. The aim is to restore spinal stability, protect the nerves and spinal cord, relieve pain, and allow patients to return to normal daily activities.
- Unlike traditional open surgery, MIS Fixation uses specialised instruments and X-ray or navigation guidance to place implants accurately while minimising damage to the surrounding muscles. In many cases, this results in less pain, reduced blood loss, shorter hospital stay and faster recovery.
- Depending on the underlying condition, MIS Fixation may be performed alone or combined with decompression or spinal fusion.
- Why Is This Surgery Performed?
- MIS Fixation may be recommended for patients with spinal instability caused by:
- Spondylolisthesis (slipped vertebra)
- Spinal fractures (traumatic or osteoporotic)
- Degenerative spinal instability
- Spinal infections such as TB Spine or spondylodiscitis
- Spinal tumours affecting the vertebrae
- Failed previous spine surgery requiring stabilisation
- Selected cases of lumbar canal stenosis after decompression
- Common symptoms that may lead to surgery include:
- Persistent back pain
- Neck pain (in selected cervical procedures)
- Sciatica or leg pain
- Tingling and numbness
- Weakness in the arms or legs
- Difficulty walking
- Pain due to spinal instability
- Progressive spinal deformity
- The decision to perform MIS Fixation is based on your symptoms, physical examination and imaging findings, rather than MRI findings alone.

- Who Is A Suitable Candidate?
- You may be a suitable candidate for MIS Fixation if:
- ✓ You have spinal instability confirmed on imaging.
- ✓ Symptoms persist despite medications and physiotherapy.
- ✓ Progressive neurological weakness develops.
- ✓ A spinal fracture requires stabilisation.
- ✓ You have spondylolisthesis causing nerve compression.
- ✓ Spinal infection or tumour has weakened the vertebrae.
- ✓ MRI and CT findings correlate with your symptoms.
- ✓ Your pain significantly affects your daily activities and quality of life.
- Your spine surgeon will determine whether MIS Fixation is the most appropriate procedure after a thorough evaluation.
- How Is The Surgery Performed?
- Step 1 – Anaesthesia and Positioning
- The procedure is performed under general anaesthesia. You will lie face down on a specialised operating table that allows safe positioning while protecting pressure points.
- Step 2 – Small Skin Incisions
- Instead of one large incision, several small incisions are made over the affected spinal levels. These provide access for specialised instruments while preserving the surrounding muscles.
- Step 3 – Image-Guided Implant Placement
- Using fluoroscopy (real-time X-ray) or advanced navigation systems, pedicle screws are inserted accurately into the affected vertebrae through minimally invasive techniques.
- Step 4 – Rod Placement and Stabilisation
- Titanium rods are connected to the screws, restoring spinal alignment and providing immediate stability. Depending on the underlying condition, decompression or spinal fusion may also be performed.
- Step 5 – Closure and Recovery
- The incisions are closed with absorbable sutures or skin staples and covered with sterile dressings. Patients are then shifted to the recovery area for close monitoring.
- What Are The Advantages?
- Compared with traditional open spine surgery, MIS Fixation offers several potential benefits:
- Smaller skin incisions
- Less blood loss
- Reduced muscle damage
- Less post-operative pain
- Lower risk of wound complications
- Shorter hospital stay
- Earlier mobilisation
- Faster recovery
- Smaller scars

- Reduced need for blood transfusion
- Earlier return to work and daily activities
- Improved quality of life
- Not every patient is suitable for minimally invasive surgery. Your surgeon will recommend the safest and most appropriate technique for your condition.
- What Are The Risks?
- Every surgical procedure carries some risks.
- Potential complications of MIS Fixation may include:
- Infection
- Bleeding
- Dural tear (CSF leak)
- Nerve injury
- Persistent pain
- Implant loosening or breakage
- Screw malposition (rare)
- Failure of bone fusion (if fusion is performed)
- Adjacent segment degeneration over time
- Blood clots
- Need for revision surgery
- These complications are uncommon, and every effort is made to minimise risk through careful planning, meticulous surgical technique and appropriate post-operative care.
- Preparing For Surgery
- Before surgery, you will undergo a detailed pre-operative assessment, including:
- Clinical evaluation
- MRI and CT scan review
- Dynamic X-rays (if required)
- Blood investigations
- ECG and Chest X-ray (when indicated)
- Medical fitness assessment
- Anaesthesia evaluation
- Bone density assessment (if osteoporosis is suspected)
- Medication review
- Please inform your doctor if you:
- Take blood thinners
- Have diabetes
- Have heart or lung disease
- Have kidney disease
- Smoke

- Have undergone previous spine surgery
- Have any allergies to medications
- Stopping smoking before surgery improves bone healing and reduces complications.
- What Happens During Hospital Stay?
- Day of Surgery
- Hospital admission
- Final medical review
- MIS Fixation surgery

Recovery room monitoring

- Pain control begins immediately
- First 24 Hours
- Assisted sitting and standing
- Walking with supervision
- Pain management
- Physiotherapy assessment
- Wound inspection
- Discharge
- Most patients are discharged within:
- 2–4 days, depending on the complexity of the surgery and overall recovery.
- Patients undergoing fixation for fractures, infections or complex conditions may require a slightly longer hospital stay.

Recovery After Surgery

- Week 1
- You may experience:
- Mild surgical pain
- Temporary stiffness
- Walking encouraged several times daily
- Wound care instructions
- Gradual increase in daily activities
- Weeks 2–6
- Longer walking sessions
- Gradual return to routine household activities
- Physiotherapy if advised
- Follow-up consultation
- Progressive improvement in mobility
- 6 Weeks–3 Months

- Strengthening exercises begin
- Most patients return to normal daily activities
- Bone healing continues
- Gradual return to work depending on occupation
- Long-Term Recovery
- Complete recovery varies depending on the underlying condition and whether spinal fusion was performed.
- Maintaining a healthy weight, exercising regularly, avoiding smoking and following rehabilitation instructions contribute to better long-term outcomes.
- When Can I Return To Work?
- Occupation
- Approximate Timeline
- Desk Job
- 4–6 weeks
- Light Work
- 6–8 weeks
- Manual Labour
- 3–6 months
- Driving
- 4–6 weeks
- Sports
- 3–6 months (after surgeon's approval)

Recovery timelines vary depending on the complexity of surgery and individual healing.

Frequently Asked Questions

- 1. Why do I need MIS Fixation?
- MIS Fixation is recommended when your spine has become unstable due to fractures, spondylolisthesis, infection, tumours or degenerative conditions.
- 2. Are there alternatives to surgery?
- Some patients improve with medications, physiotherapy or spinal injections. However, when significant spinal instability or neurological compromise is present, surgery may be the most appropriate treatment.
- 3. Will I have a large scar?
- No. MIS Fixation is performed through several small incisions, which generally result in smaller scars than traditional open surgery.
- 4. How long will I stay in hospital?
- Most patients stay in hospital for 2–4 days, depending on the complexity of surgery and overall recovery.
- 5. When can I walk?
- Walking usually begins within 24 hours after surgery under the supervision of your healthcare team.

- 6. When can I climb stairs?
- Most patients can climb stairs safely before discharge, provided they are comfortable and medically stable.
- 7. When can I drive?
- Driving is usually possible after 4–6 weeks, provided pain is well controlled, you are no longer taking strong pain medications and your surgeon has approved it.
- 8. When can I return to work?
- Patients with desk jobs may return within 4–6 weeks, while physically demanding jobs often require 3–6 months.
- 9. What is the success rate?
- When performed for the appropriate indication, MIS Fixation has high success rates in relieving pain caused by spinal instability, improving function and restoring spinal stability. Outcomes depend on the underlying diagnosis, bone quality, overall health and adherence to rehabilitation.
- 10. Can the problem recur?
- The treated spinal segment is stabilised, but age-related changes may occur at other spinal levels over time. Maintaining a healthy lifestyle and following rehabilitation advice helps reduce future spinal problems.
- Myth vs Fact
- Myth:
- MIS Fixation is a temporary solution because the screws will eventually loosen.
- Fact:
- Modern titanium screws and rods are designed to provide long-term spinal stability. When bone healing occurs successfully, most implants remain securely in place for life and do not require removal.
- When Should I Contact My Surgeon After Surgery?
- Contact your surgeon immediately if you experience:
- Fever
- Increasing wound redness or discharge
- Progressive weakness
- Severe or worsening pain
- Difficulty passing urine
- Loss of bladder or bowel control
- New numbness
- Difficulty walking
- Calf swelling or sudden shortness of breath
- Early recognition of complications allows prompt treatment.
- Related Conditions
- Spondylolisthesis
- Lumbar Canal Stenosis
- Spinal Fractures
- TB Spine
- Spinal Tumours

- Degenerative Spine Disease
- Related Procedures
- MIS TLIF (Minimally Invasive Transforaminal Lumbar Interbody Fusion)
- Endoscopic Spine Surgery (UBE)
- Microscopic Decompression Surgery
- Vertebroplasty & Kyphoplasty
- Revision Spine Surgery
- Need Expert Advice?
- If you have been advised spinal fixation surgery or would like a second opinion, our team can help you understand your diagnosis and discuss all available treatment options.
- At Bombay Spine Clinic™, we provide personalised treatment plans using the latest minimally invasive spine surgery techniques whenever appropriate. Every patient undergoes a comprehensive evaluation to determine whether surgery is truly necessary and to choose the safest, most effective approach.
- Dr. Siddharth KatkadeConsultant Spine SurgeonBombay Spine Clinic™

> **Need Clinical Evaluation or Second Opinion?**
> This educational document was prepared by **Dr. Siddharth Katkade**. For appointments or to share MRI scan reports for clinical review, call **+91 88507 73095** or consult at Byculla (E) / Khar (W) clinics.
