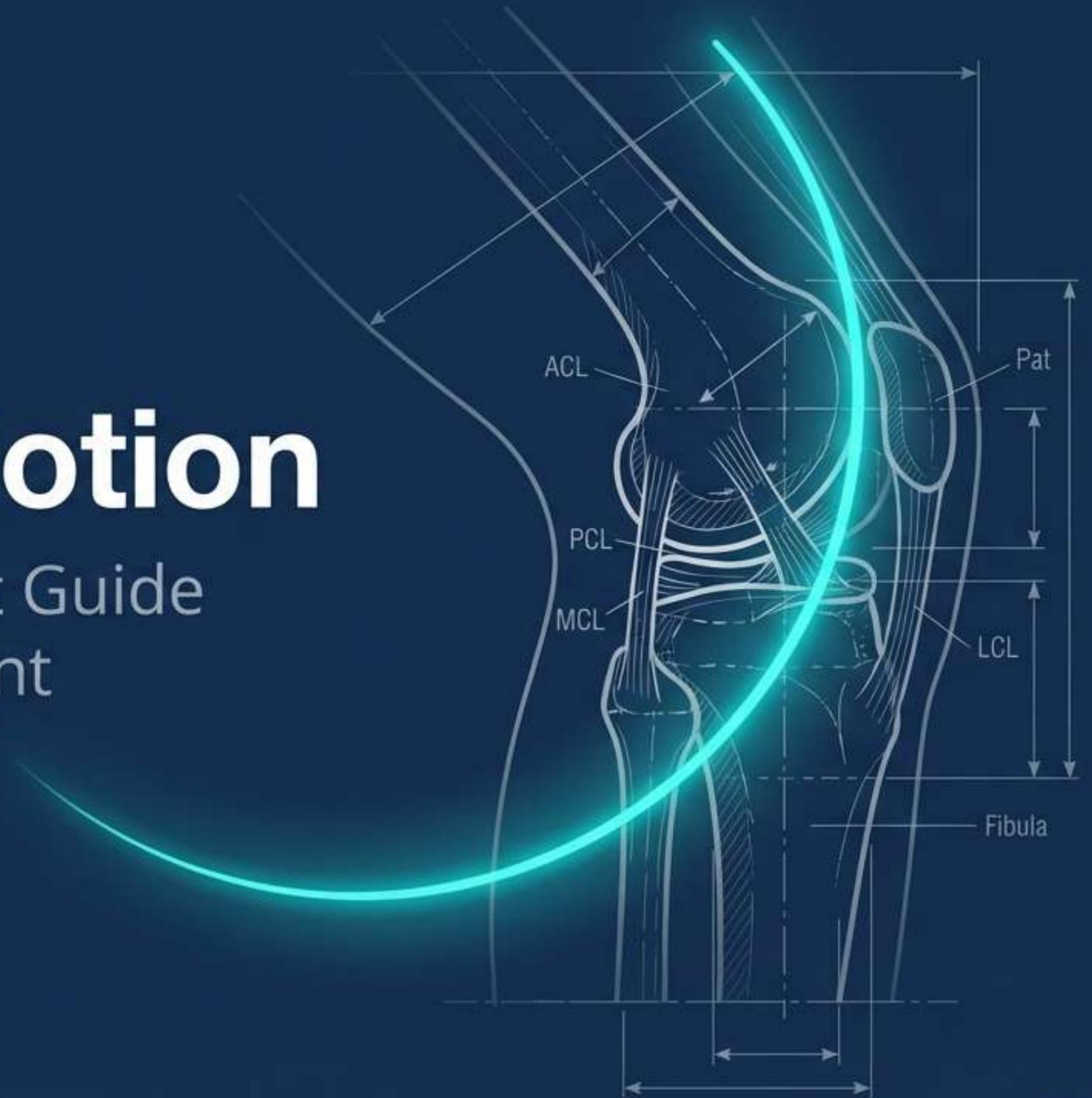


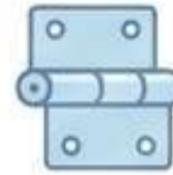
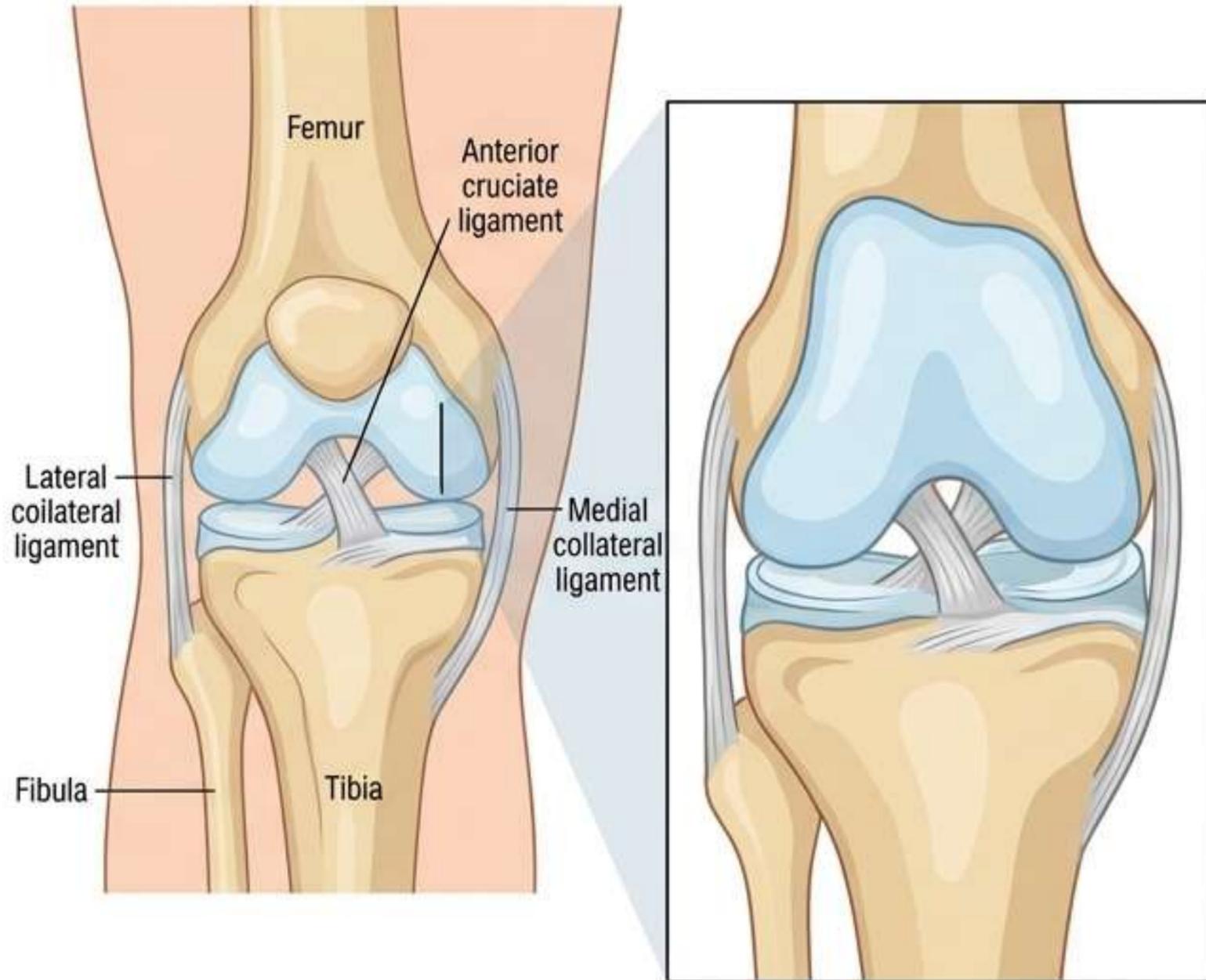
Reclaiming Pain-Free Motion

A Comprehensive Patient Guide
to Total Knee Replacement

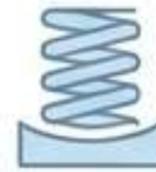
Presented by Dr. Vinay Joshi,
Senior Orthopaedic Surgeon



The Mechanics of a Healthy Knee



The Frame: The knee is a hinge connecting the thigh bone (femur) and shin bone (tibia), protected by the kneecap (patella).



The Shock Absorbers: Meniscus cartilage acts as a resilient cushion between the heavy bones.



The Glide Surface: Smooth articular cartilage covers the bone ends, allowing frictionless, pain-free movement.

The Bone-on-Bone Reality of Osteoarthritis

Healthy Knee



Osteoarthritic Knee



The Metaphor:

Think of cartilage like the brake pads on a car. Over decades of use, this smooth gliding surface naturally wears away.

The Friction:

When the cartilage wears down to the metal (or bone), the joint loses its protective space entirely.

The Symptoms:

This bone-on-bone friction creates painful bone spurs, chronic inflammation, stiffness, and the sensation of the knee giving way.

Resurfacing the Joint: The Three Components

Femoral Component (Top): A curved metal shield capping the thigh bone. It precisely mimics the natural shape of your original joint.

Polyethylene Spacer (Middle):
A medical-grade, high-density plastic insert. This replaces the worn cartilage to provide a smooth, frictionless gliding surface.

Tibial Tray (Bottom):
A flat metal platform secured to the top of the shin bone to hold the spacer firmly in place.



Tailoring the Solution to Your Anatomy

	Total Knee Replacement (TKR)	Partial Knee Replacement (UKR)
Anatomy Replaced	✓ Entire joint surface	✓ Only the damaged compartment (usually medial)
Ideal Candidate	✓ Severe, multi-compartment arthritis	✓ Isolated arthritis with intact ligaments
Recovery Speed	✓ Gradual, highly structured 12 weeks	✓ Often faster with a smaller incision
Long-Term Survivorship	✓ Highly durable; 80-85% function well at 20-25 years	✓ Excellent, but may require later conversion to TKR if arthritis spreads

The Precision of Robotic-Assisted Surgery

The longevity of a knee implant depends entirely on perfect alignment.

Manual Placement



Robotic-Assisted

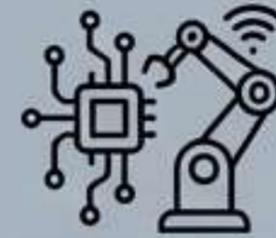


3D Digital Mapping: Before making a single cut, advanced software creates a 3D model of your exact anatomy.

Flawless Alignment: The robotic arm provides tactile feedback, ensuring the implant is placed with sub-millimeter accuracy along your leg's natural mechanical axis.

Preserving Soft Tissue: Real-time sensor data protects surrounding ligaments, leading to a much more natural-feeling knee.

Conventional vs. Robotic-Assisted Technique



	Conventional TKR	Robotic-Assisted TKR
Alignment Accuracy	Relies on standard anatomical jigs and visual estimation.	Sub-millimeter robotic precision based on patient-specific 3D anatomy.
Soft Tissue Balancing	Surgeon's manual tension assessment.	Sensor-based, real-time feedback for perfect ligament tension.
Anatomical Restoration	Excellent historical track record.	Statistically superior restoration of the natural joint line (PubMed Meta-Analysis Data).

The 50/50 Partnership Concept

Surgery fixes the joint. Rehabilitation restores the movement.



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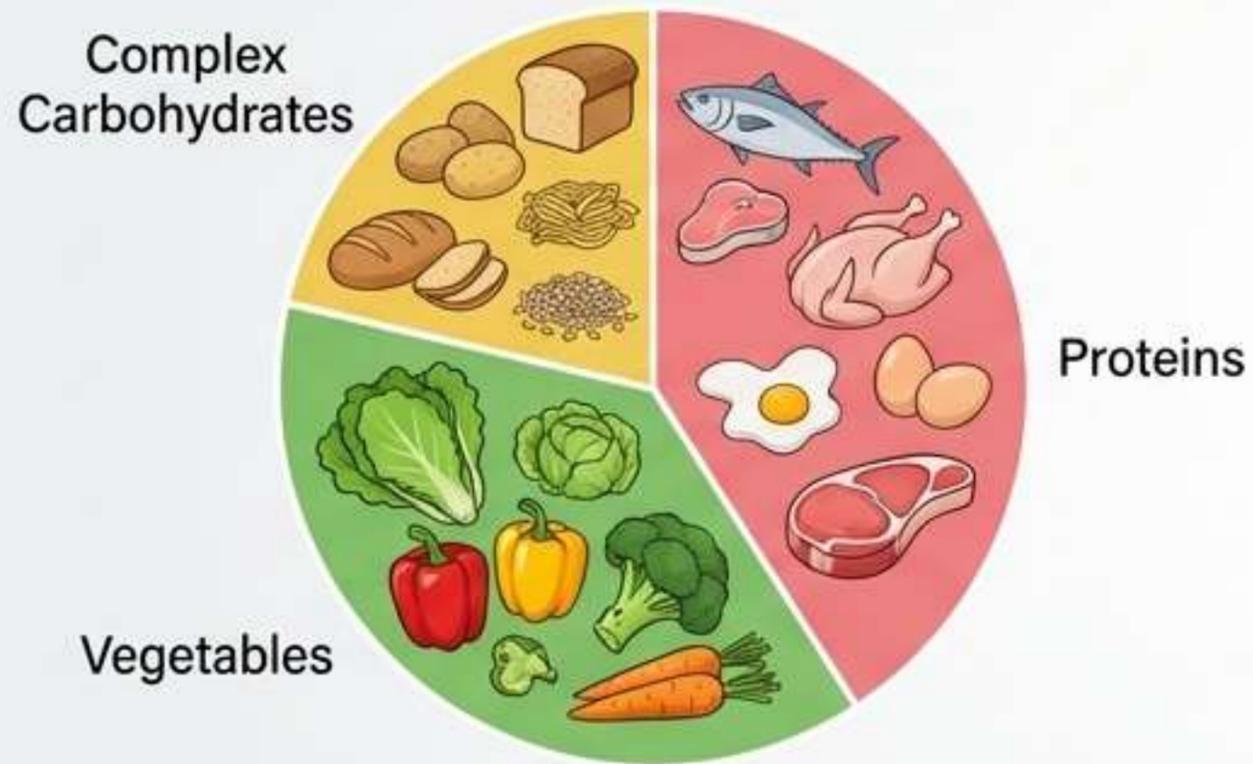
The Surgeon's 50%: Dr. Joshi provides perfect anatomical alignment, high-grade materials, and a stable, frictionless joint.

Your 50%: You provide the daily dedication to physical therapy, restoring muscle strength, and retraining your body.

100% Active Life

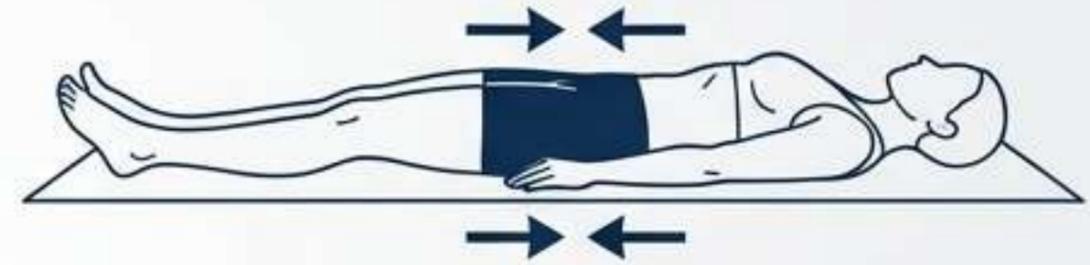
Pre-Hab: Preparing Your Body for Success

Diet & Nutrition



A healthy, protein-rich diet in the weeks before surgery directly aids post-operative tissue healing and reduces the risk of infection.

Strengthening Weeks Before Surgery



Gluteal Sets: Squeezing bottom muscles for 5 seconds (builds core stability).



Heel Slides: Slowly bending the knee by sliding the foot toward the body (improves baseline range of motion).

Your 12-Week Recovery Dashboard

Day 1

Weeks 1-3
(Healing Phase)

Weeks 4-6
(Mobility Phase)

Weeks 7-12
(Strength Phase)



Up and walking with a physiotherapist and assistive device within hours of surgery.



Discard assistive device.
Focus on achieving full knee extension (straightness) and 90-degree flexion.



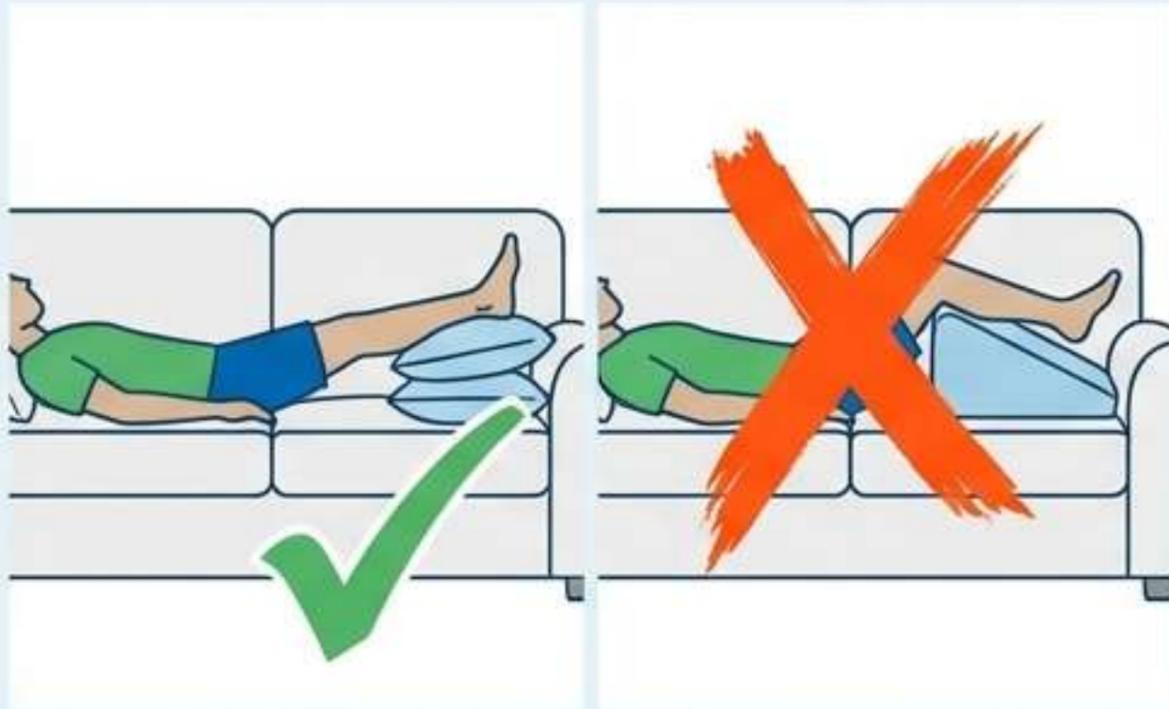
Return to driving (once off pain medications).
Return to sedentary work.
100-degree flexion flexion goal.



Return to full daily function.
Transition to maintenance exercises.
Cleared for low-impact activities like cycling or golf.

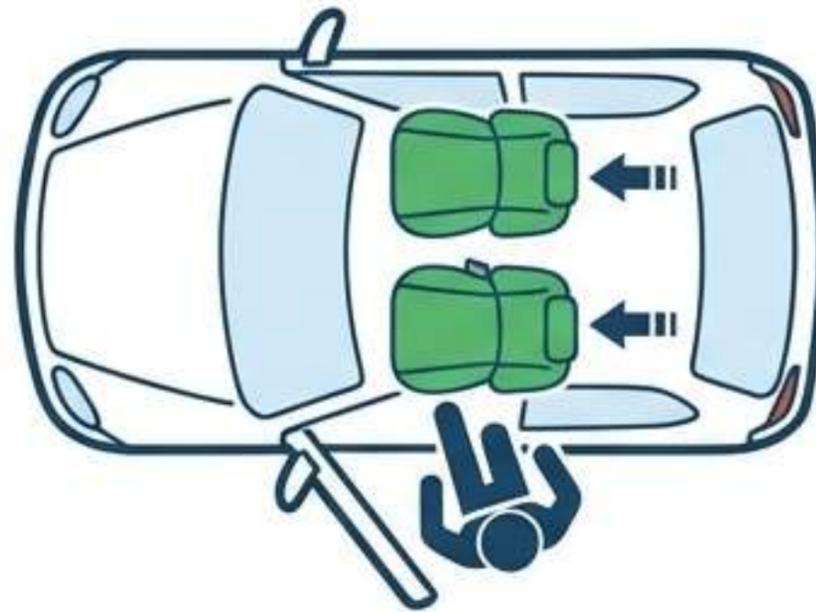
Safe Mechanics at Home

The Golden Rule of Elevation



Elevate your leg to reduce swelling, but never place a pillow directly behind the knee. The knee must remain completely straight while resting to prevent permanent stiffness.

Car Transfers



Push the passenger seat as far back as possible. Stand with your back to the car, sit down gently, and swing both legs in together.

Stairs



"Up with the good, down with the bad." Take one step at a time initially, leading with your unoperated leg going up, and your operated leg going down.

Post-Op Safety: The Traffic Light System



Green Zone (Normal Healing): Mild to moderate swelling, bruising around the knee/thigh, and surgical pain that responds to prescribed medication.

Action: Continue your rehab exercises and ice the joint.

Yellow Zone (Caution): Excessive stiffness, pain preventing sleep, or a noticeable "clunk" feeling when walking.

Action: Call Dr. Joshi's clinic for a routine check-in.

Red Zone (Emergency): Calf swelling greater than 3cm compared to the other leg, throbbing calf pain, chest pain, high fever, or active pus oozing from the wound.

Action: Go immediately to the ER or Call 911 for potential DVT or deep infection.

The Real Outcome: Reclaiming Your Life



(Based on the real patient journey of Carol L.)
NotebookLM

The Longevity Equation



Ready to Draft Your Blueprint for Motion?

Chronic knee pain is not an inevitable part of aging. With precise surgical techniques and a dedicated rehabilitation partnership, you can reclaim your quality of life.

Take the Next Step:

- Schedule a comprehensive evaluation with Dr. Vinay Joshi.
- Review your tailored surgical options.
- Begin your journey back to pain-free movement.

Dr Vinay Joshi | Kokilaben Ambani Hospital