

Quicker Recovery

# A.C.L RECONSTRUCTION

Anterior Cruciate Ligament Surgery



**Patient Guide**  
Authentic Medical Facts

"I am delighted to have returned to my sports with a robust knee which is now free of pain. The ACL surgery has liberated me from a life otherwise destined for discomfort and physical limitations"

- A Recently Treated Patient



12,000+ Patients Treated Successfully



**Dr. Santosh Kumar**

MBBS, D.Ortho, M.Ch.[ Ortho ],  
Specialist Orthopaedic Surgeon



POORVA ORTHOPAEDIC FOUNDATION

# About Dr.Santosh Kumar



MBBS (JIPMER), D.ORTH (JIPMER); MCh ORTH (SCYHELLS)  
Head : Department of Computer Assisted Joint Replacement Surgery : BELLE VUE CLINIC  
JOINT REPLACEMENT SURGEON, ARTHRITIS FOUNDATION,INDIA  
Subspecialty- Knee Joint- Total Knee Replacement, Knee Arthroscopy.  
Fellowship in Joint Replacement, Max Hospital, New Delhi  
TRAINED IN COMPUTER ASSISTED JOINT REPLACEMENT FROM AUSTRIA  
Trained in Revision Knee and Hip Replacements  
Trained in Complex Joint Replacement from the DELTA FOUNDATION of AUSTRALIA

## INTRODUCTION

Dr Santosh Kumar and his team are leading knee specialists in Kolkata. He is one of the best doctors in Knee replacement today. Knee replacements are routine in Kolkata (Calcutta) today and Dr Santosh Kumar has been instrumental in making international quality knee surgery affordable to the mass.

HE HAS EXPERIENCE OF MORE THAN TWO THOUSAND KNEE REPLACEMENTS



## GRADUATION

MBBS – from Jawaharlal Institute of Post Graduate Medical Education and Research (JIPMER, Pondichery) Directorate General of health Services, Govt. of India from 1995 to 2001.

HOUSE JOB in Department of Orthopedics, JIPMER from April 2001 to June 2002.

## POST GRADUATION

D Orth from Jawaharlal Institute of Post Graduate Medical Education and Research (JIPMER, Pondichery) Directorate General of health Services, Govt of India from 1st April to 31st March 2005.

## BONE BANK JIPMER

In charge bone bank JIPMER from April 2004 to March 2005. TRAUMA COURSE online of ADVANCED TRAUMA LIFE SUPPORT at CMC Vellore January 2005.

Clinical Research Fellow in Orthopaedic Oncology at JIPMER Hospital from April 2005 to June 2005.

## REDISTRAR ORTHOPEDICS

Whole time registrar in Orthopaedics at Bhattacharyya Orthopaedics and Related Research Center (P) Ltd., Narayanpur, Kolkata – 136 from 1st July 2005 to 31st June 2007.

## MCh ORTH

Passed MCh ORTH from the University of Seychelles American Institute of Medicine, March 13th 2008.

MCh Thesis : a study into the controversial aspects of interlocking nail of femur.

## TRAINING

DELTA COURSE for advanced aspects of complex primary and REVISION knee replacement. At MAX Hospital, New Delhi in Sept, 2008.

FELLOWSHIP in KNEE REPLACEMENT in Max Hospital, New Delhi from Sept, 2008 with Dr. S.K.S. Marya for total of 54 knee replacement surgeries.

AO SPINE Training in Bombay July 2009.

AO TRAUMA Training 8th to 10th Oct, 2009, Kanpur

DELTA COURSE for Advanced Aspects of Complex Primary and Revision Knee Replacement, at SUN SHINE Hospital, Hyderabad in Nov, 2009.

Ranawat joint replacement course in Jan 2010 Kolkata

Trained in complex joint replacements, at Bangkok. Jan 2011 by DEPUY institute at Bangkok

Trained in revision joint replacements by DE PUY institute at Chennai, June 2011.

Medtronic Academy course in cervical spine in October 2011

Trained in computer assisted knee replacement at Fortis Chandigarh in Jan 2012

AO advanced trauma course in March 2012 at Kolkata

## TRAINING [ continued ]...

Trained in complex joint replacements in USA , PHOENIX, by KLEOS foundation ( Smith and Nephew educational body) April 2012

Trained in minimally invasive spine surgery by Medtronic Academy foundation May 2012

Trained in computer assisted navigation technology for knee replacement in Vienna Austria, in June 2012.

## PAPERS PUBLISHED / PRESENTED

Bilateral fracture dislocation of Hip, pipkin 1 – its management and the result – published in the West Bengal journal of orthopaedics – vol 20, number 2, September 2006, myself as Primary author.

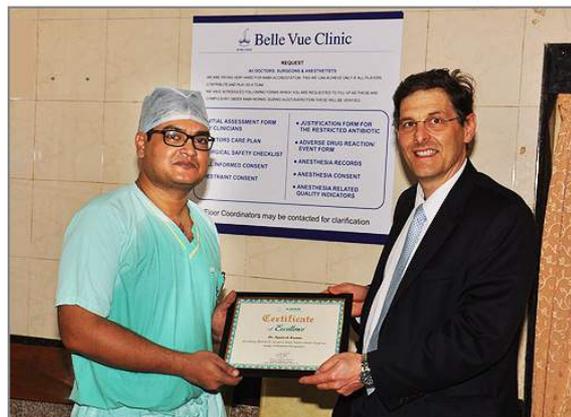
The role of total hip replacement in ankylosing spondylitis patients – under consideration for publication in the Indian journal of orthopaedics.

OPPONENSPLASTY – a method to reconstruct the post polio paralytic thumb – presented at the midcon 2005, West Bengal Orthopaedic Association.

Follow up of 24 total hip replacements in ankylosing spondylitis patients presented at the annual conference of the West Bengal Orthopedics Association 2006.

## AWARDS RECEIVED :

Dr.Santosh Kumar received Certificate of International Excellence in Minimally Invasive Computer Assisted Joint Replacement Surgery by the ASCULAP ACADEMY, Germany



# **Titles**

## **Part A**

- 1. Stability of Knee.**
- 2. Anatomy of the ACL.**
- 3. Functions of ACL.**
- 4. Risk Factors to ACL tear.**
- 5. Type, Pattern & Severity of Injury**
- 6. Clinical picture.**
- 7. Examinations.**
- 8. Investigations.**
- 9. Non Surgical Treatment.**
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- 17. Patient Consideration**
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## **A.C.L RECONSTRUCTION**

Anterior Cruciate Ligament Surgery

## **Part B**

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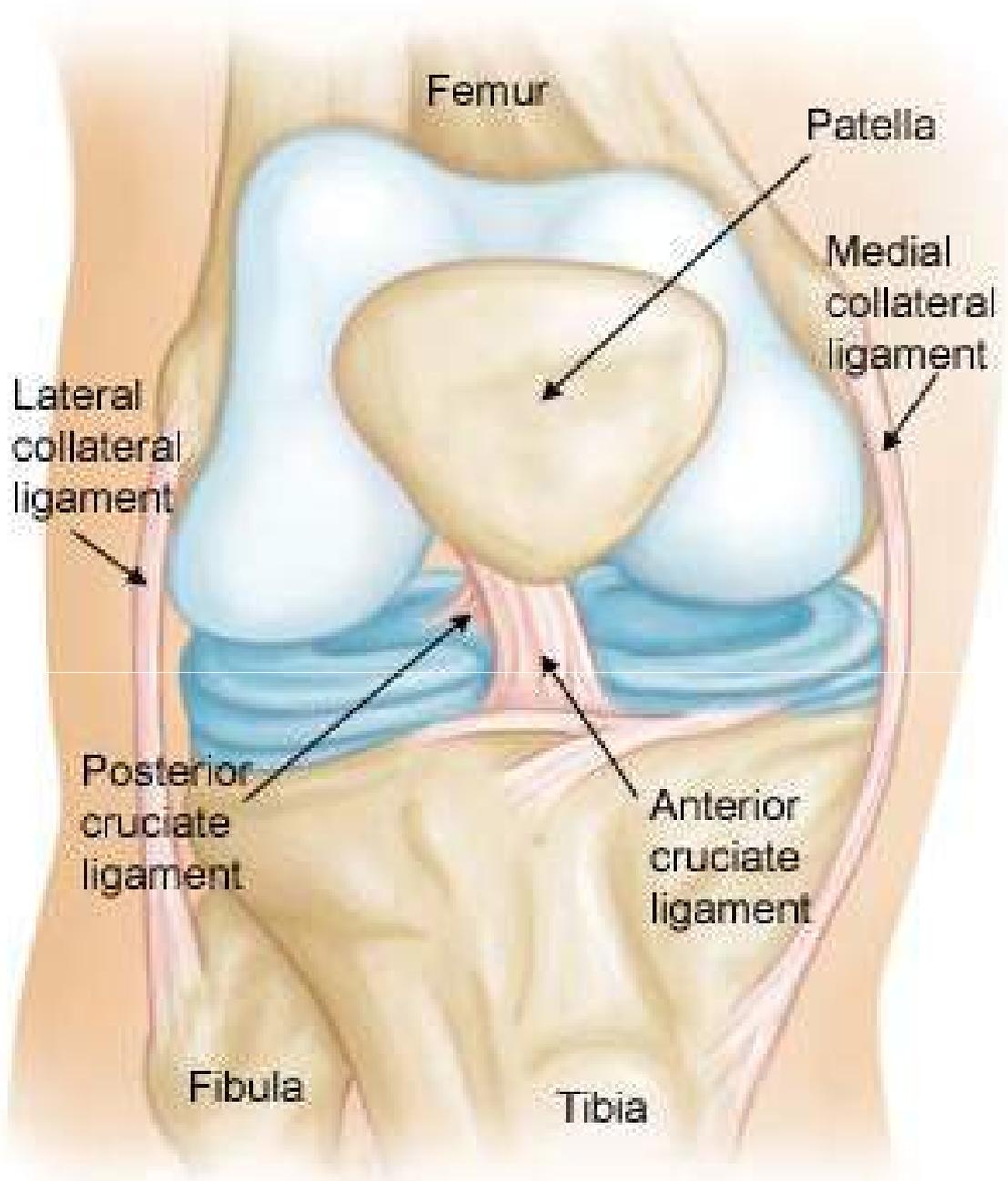


# SECTION A

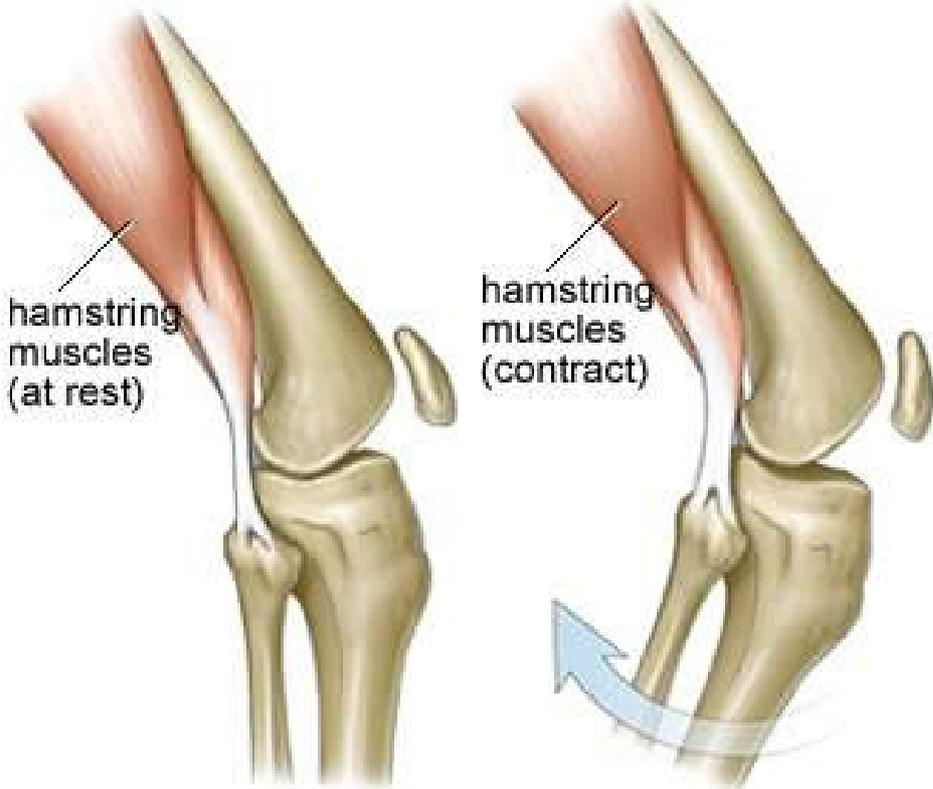
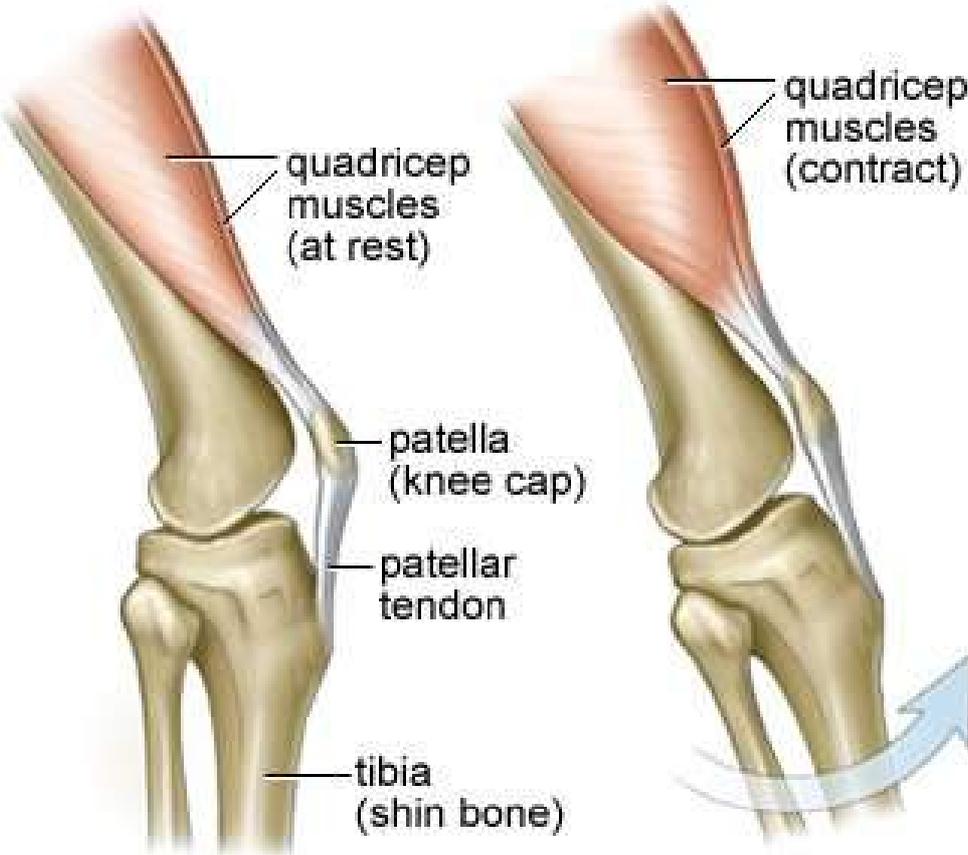


# Stability of Knee

- The knee joint is a hinge joint formed by bones – femur, tibia and patella and is held together by ligaments.
- There are four ligaments and they are: MCL (medial collateral), (LCL) lateral collateral, (ACL) anterior cruciate and (PCL) posterior cruciate ligament.

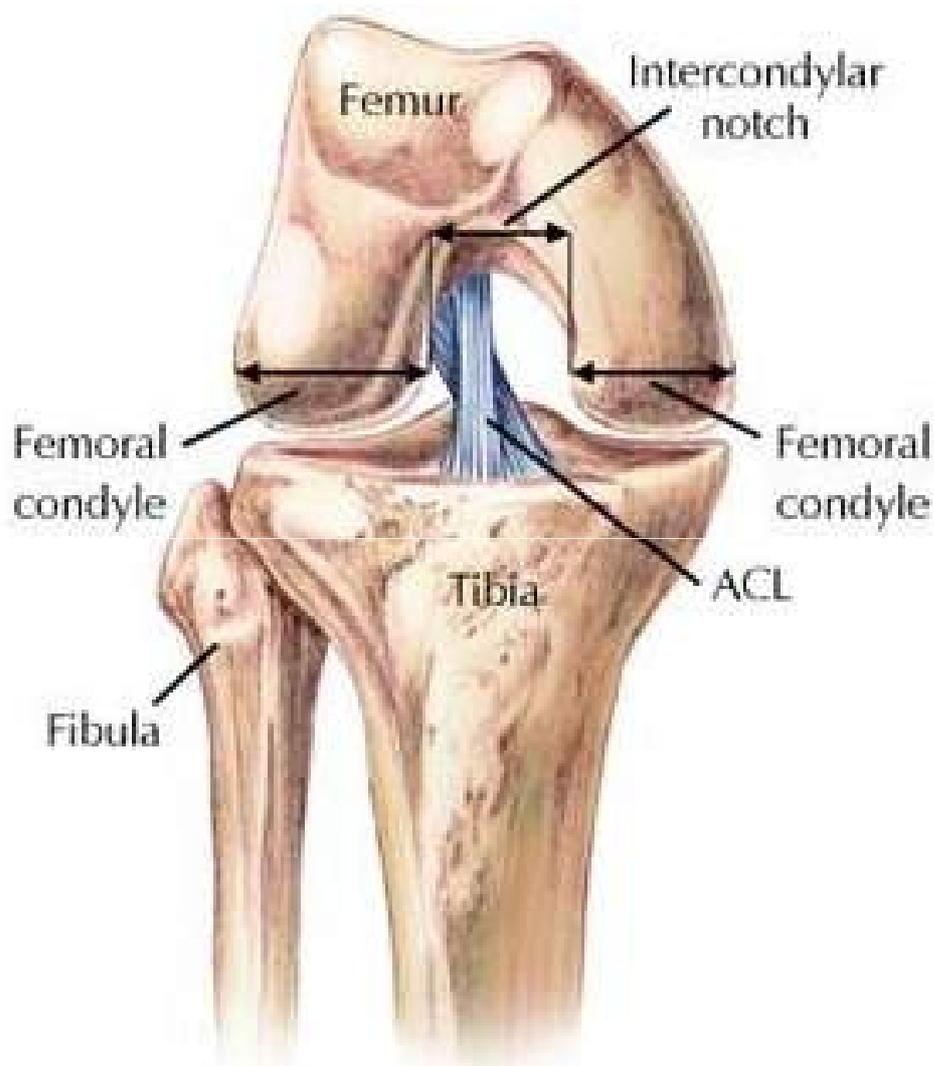


# Movement of Knee



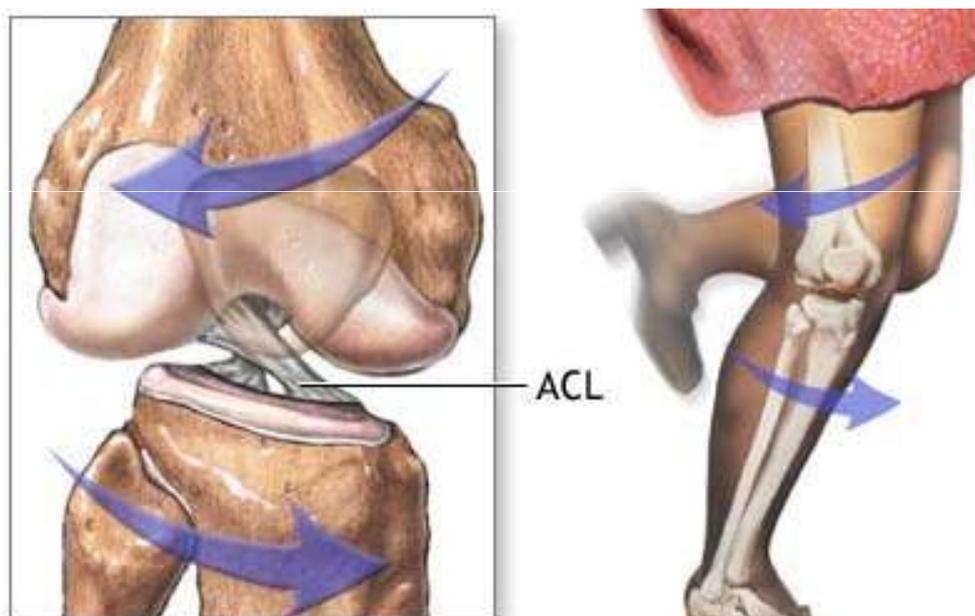
# Anatomy of the ACL

- ACL i.e Anterior Cruciate Ligament is a ligament joining the leg bone to the thigh bone. It is located inside the center of the knee joint.
- The ACL is composed of densely organized, fibrous collagenous connective tissue that attaches the femur to the tibia.



## How is the ACL torn ?

- It can be torn in sports, falls, two wheeler accidents.
- A twisting injury to the knee is the commonest mechanism of ACL injury. It occurs when the leg is planted on the ground and the thigh rotates inwards.
- Another mechanism is when the knee turns forward excessively.
- A sudden stop, twist
- Extreme hyperextension
- Direct contact



ACL injuries occur when bones of the leg twist in opposite directions under full body weight



# Pattern of Injury



A twisting and hyperextension injury commonly causes an ACL +/- PCL tear.



A hyperextension injury in a nonweight bearing leg can cause an ACL or PCL tear.



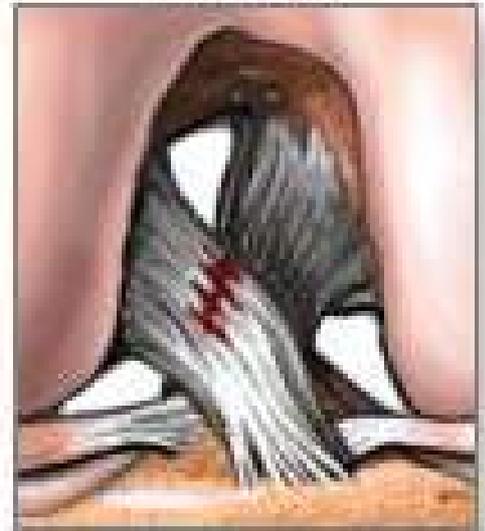
A hyperflexion injury such as a fall in skiing causes an ACL tear.



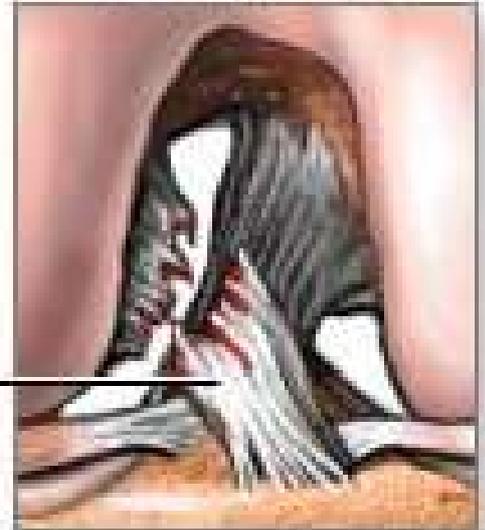
# Severity of Injury

- **Grade I** A mild injury that causes only microscopic tears in the ACL. Although these tiny tears may stretch the ligament out of shape, they do not affect the overall ability of the knee joint to support your weight.
- **Grade II** A moderate injury in which the ACL is partially torn. The knee can be somewhat unstable and can "give away" periodically when you stand or walk.
- **Grade III** A severe injury in which the ACL is completely torn through and the knee feels very unstable.

Partial



Complete

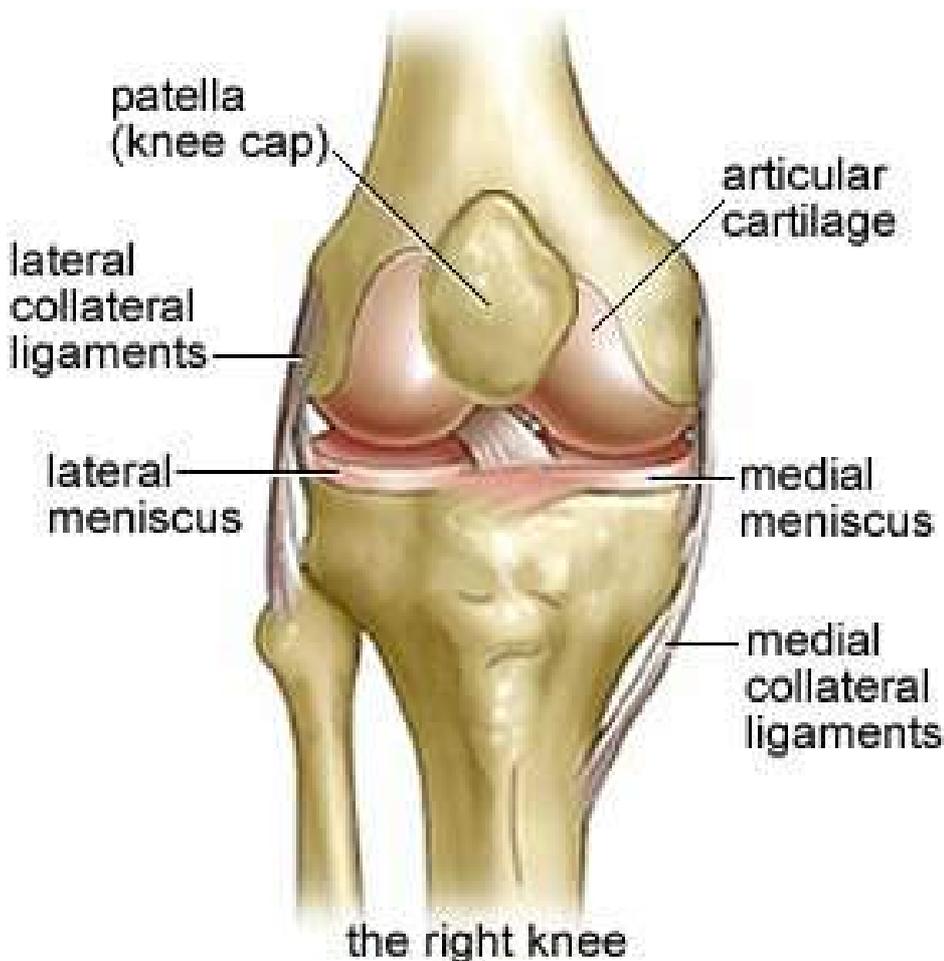


*Most ACL injuries are severe Grade III  
10% - 28% being either Grade I or Grade II.*



# ACL injuries are usually combined

- With the menisci (50 %)
- With articular cartilage (30 %),
- With collateral ligaments (30%),
- In football players and skiers, consists of injuries to the ACL, the MCL and the medial meniscus.



*In cases of combined injuries, surgical treatment may be warranted and generally produces better outcomes*



# What are the Symptoms of an ACL injury?

- Hear a "pop" from inside the knee
- Feel the knee give away at the time of injury
- Severe pain can not continue play
- There is immediate swelling as shown below.
- Pain may accompany.
- The knee may feel loose.
- Bruising may be present.

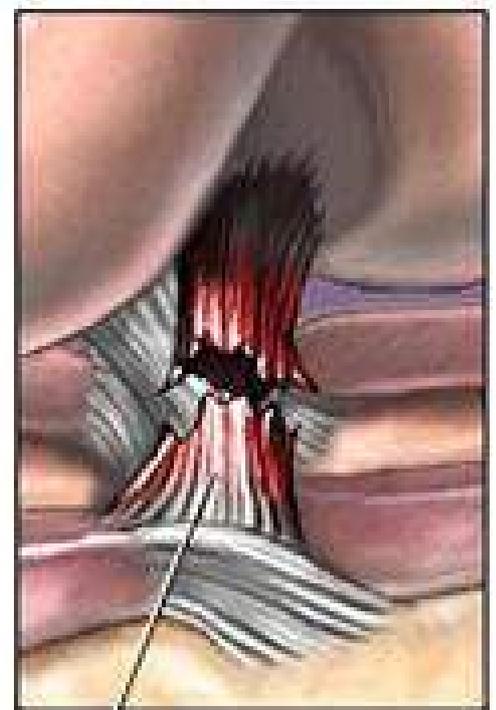


# What are the Outcomes of ACL injuries?

- The knee feels unstable and may give away repeatedly while coming downstairs or running
- Damage can result to the cartilages and menisci within the knee
- Early **osteo-arthritis** may set in.



Viewed  
Through  
Arthroscope



Torn anterior  
cruciate ligament

## What are the Risk Factors to ACL tear ?

- High-risk sports like : football, baseball, soccer, skiing, and basketball
- Females at more risk than male
- Certain types of Footwear:



# What Examinations are done ?

1. Inspection:

-immediate effusion >> intra-articular trauma.

2. Assess ROM:

Lack of complete extension.

3. Palpation:

Any meniscus or collateral tears or sprain.

- **Lachman test: most sensitive test**



## Examinations 2

- **Pivot shift test:**



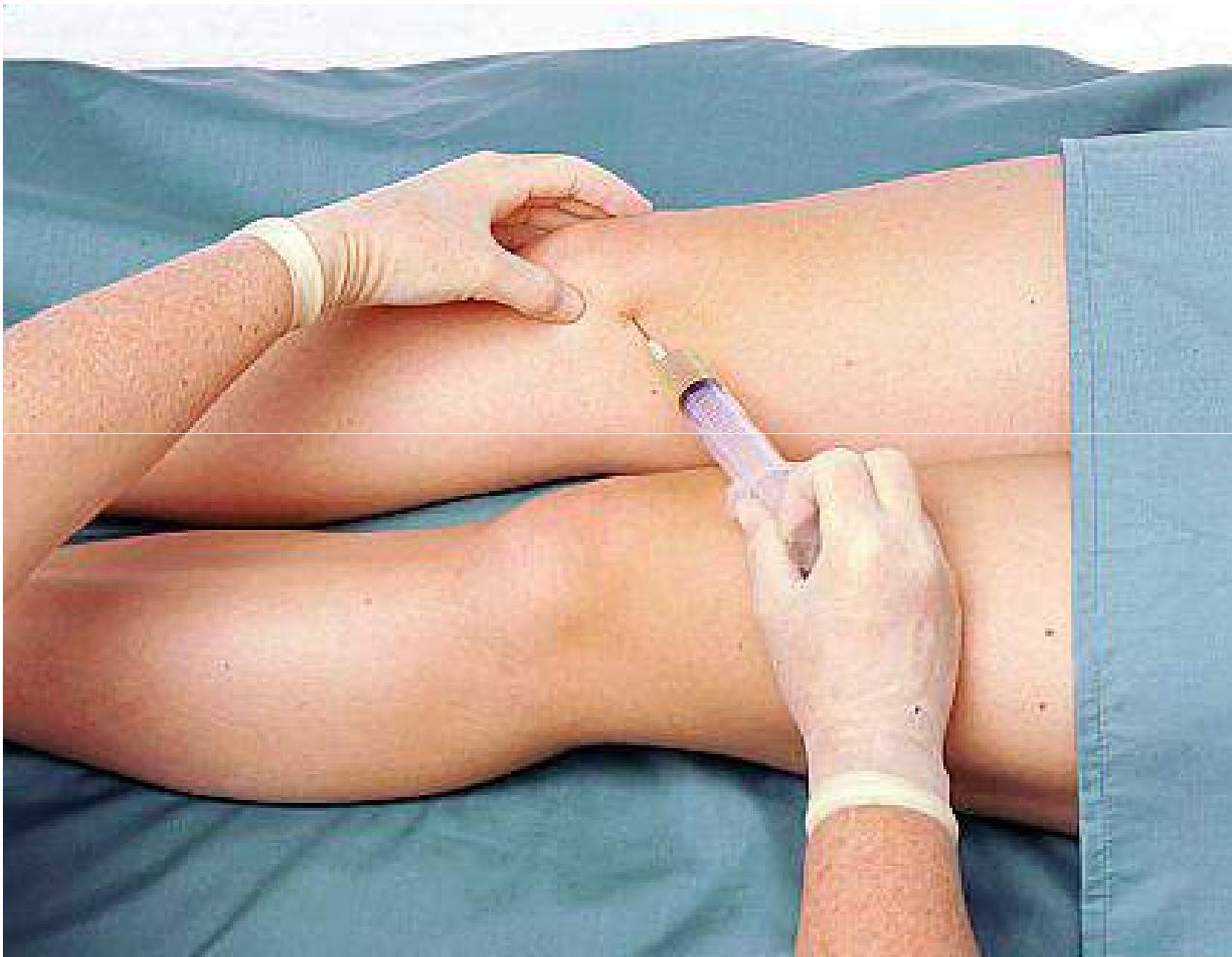
- **Anterior drawer test : least reliable**



# What Investigations are done ?

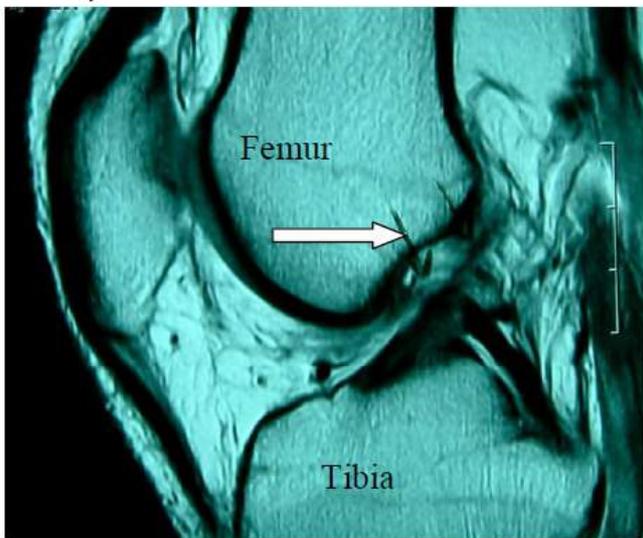
- **Laboratory Studies**
- **Imaging Studies**
- **Other Tests**

**Laboratory Studies : Arthrocentesis (rarely performed)**

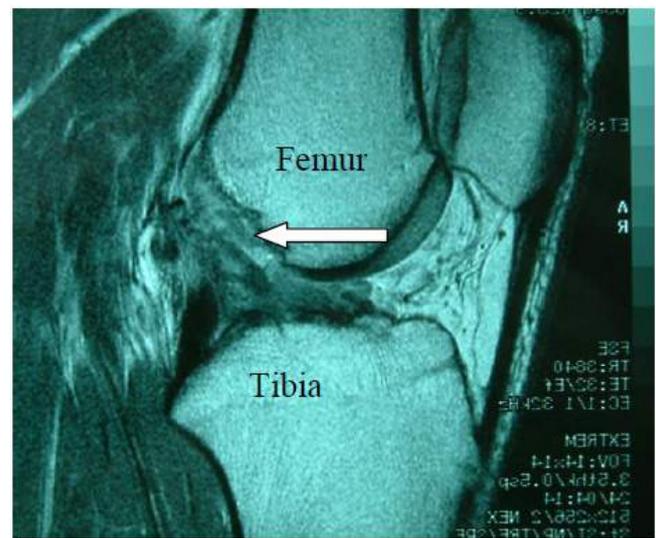


## Imaging Studies:

- Plain radiographs. Usually -ve
- Arthrograms replaced by MRI
- MRI
  - \* *Gold standard,*
  - \* *90-98% sensitivity.*
  - \* *identify bone bruising.*



MRI scan shows the ACL torn from its attachment to the femur



MRI scan shows the ACL has 'blown out'



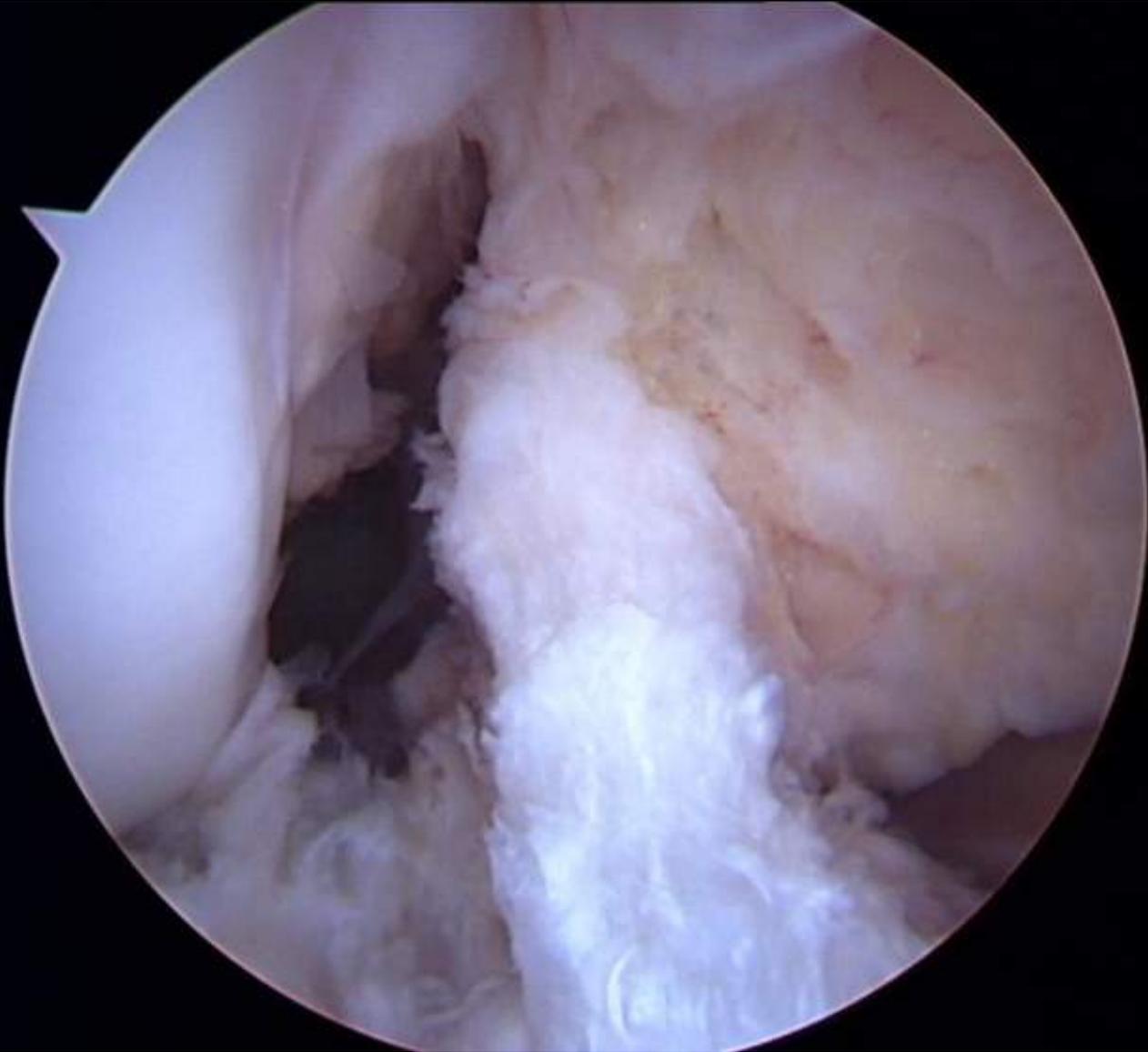
## Other Studies:

### KT-1000

greater than 3 mm as measured by the KT-1000 is classified as pathologic.



# Arthroscopic View



Arthroscopic view of a torn ACL. Note that the ligament has detached from the femur



# What are the modes of treatment ?

- If the patient has repeated symptoms, then surgical reconstruction is the best form of treatment.
  - Non operative treatment may be indicated in older patients.
  - Surgical treatment is known as ACL reconstruction. The ligament cannot be repaired at present and has to be reconstructed.
- 

## Treatment Options At A Glance

- Immediately after injury
  - **R.I.C.E ( Rest Ice Compression Elevation )**
- Non surgical treatment
  - **Exercise (after swelling decreases and weight-bearing progresses)**
  - **Braces**
    - Rehabilitation Brace
    - Functional Brace
- Surgical treatment



# Patient Consideration

- For Active adult patients: consider surgical treatment
- For Young children or adolescents: delay ACL surgery until the child is closer to skeletal maturity.
- If necessary, one should modify the ACL surgery technique



# Rehab Total Range of Motion

- **Ideal for total knees, meniscus repairs, regenerative chondroplasty, ligament surgeries and patella realignments,**
- **Range of motion control and short cuffs for extended rehabilitation.**



# Hinge Functional Knee Braces

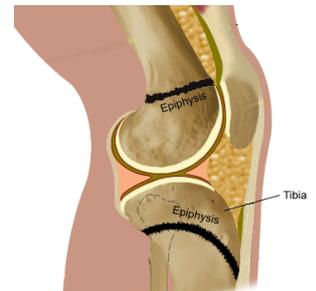
- **Have rigid metal supports down the sides of the brace to reduce knee instability following injury.**



# Non Surgical Treatment

- **Isolated ACL tears**

- With partial tears and **NO** instability symptoms
- With complete tears and **NO** symptoms of knee instability during low-demand sports who are willing to give up high-demand sports
- Who do light manual work or live sedentary lifestyles
- Whose growth plates are still open (children)



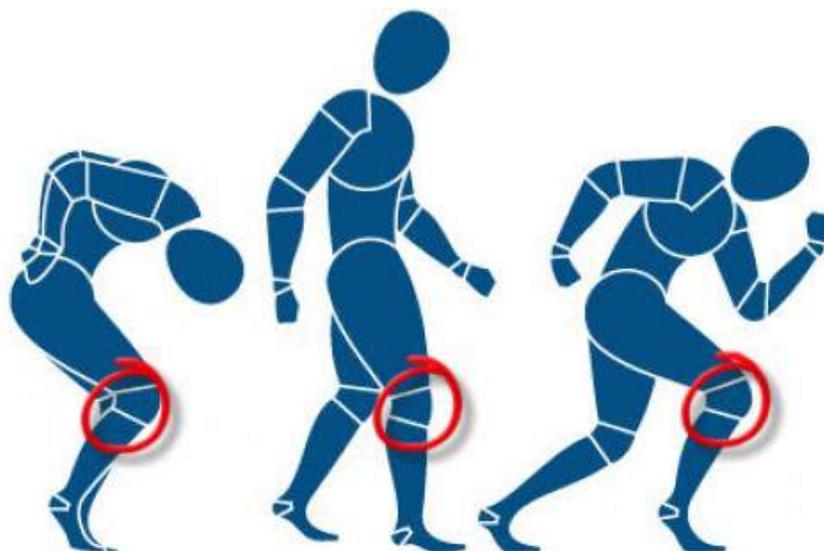
## Non surgical Precautions

- Modification of active lifestyle to avoid high demand activities
- Muscle strengthening exercises for life
- May require knee brace
- Despite above precautions, secondary damage to knee cartilage & meniscus leading to premature arthritis



# Surgical Intervention and Considerations

- ACL tears are not repaired using suture
- Replaced by a graft made of tendon
- The goal is
  - prevent instability
  - restore the function of the torn ligament
  - allows the patient to return to sports
- Not performed until several weeks after the injury
  - To allow the swelling to decrease, inflammation to subside, and range of motion to improve

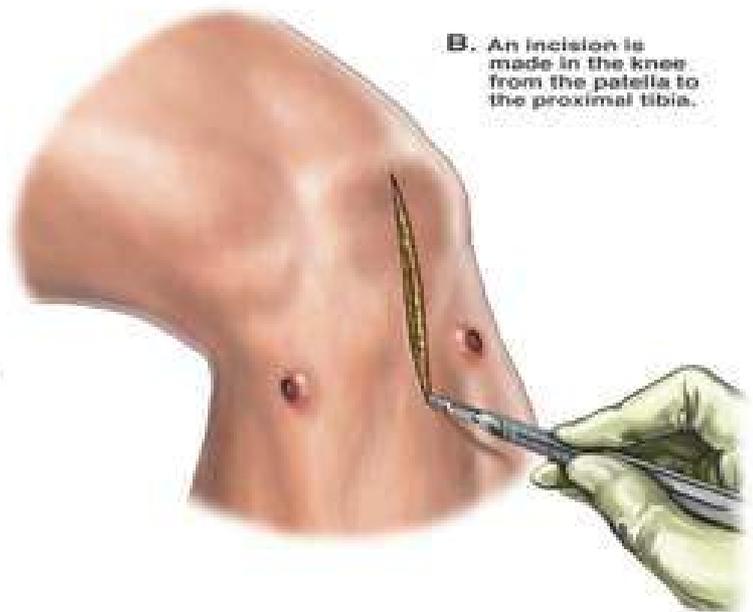
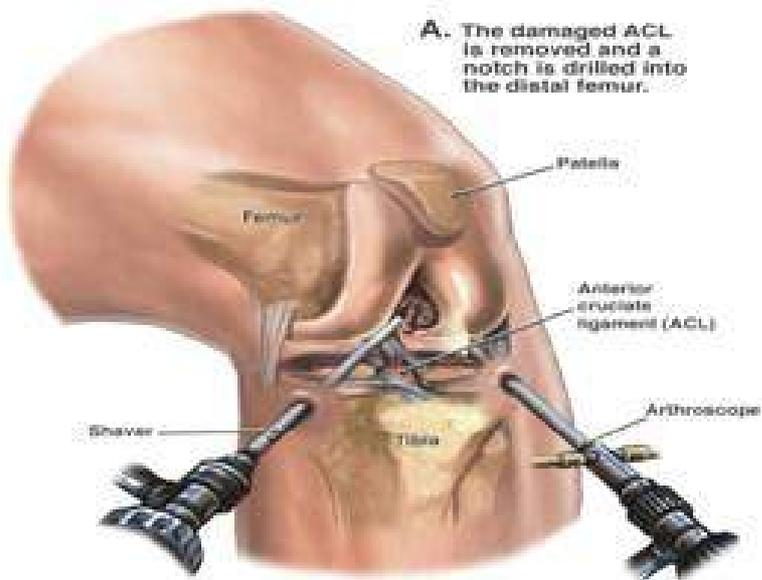


# How is the Surgery done?

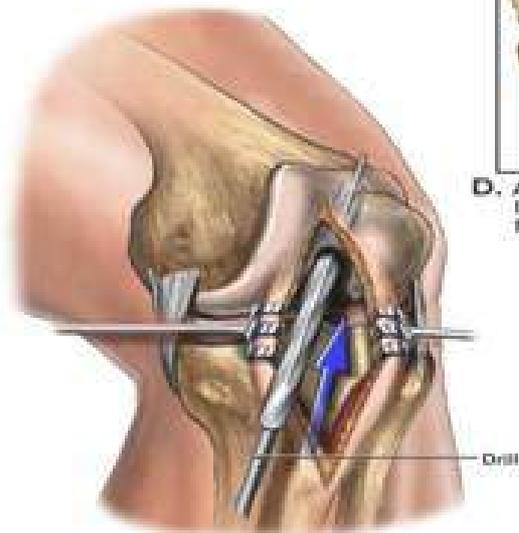
- A piece of tissue either taken from your own body or a cadaver is used to reconstruct the ACL.
- It is commonly done through key hole surgery to prepare and position the tissue ( graft)
- The procedure is a day care procedure
- The patient follows the physical therapy program



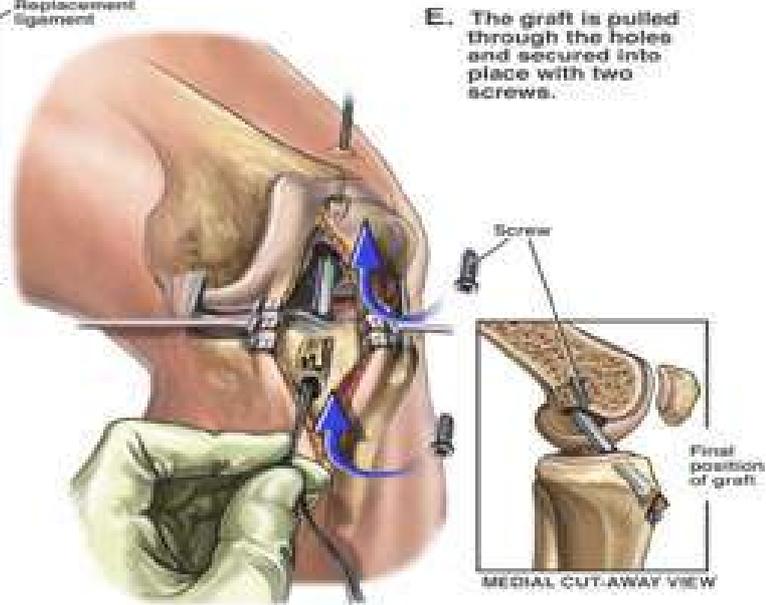
# Surgical Technique



**C.** Drill holes are made into the tibia and the femur.



**D.** A graft and replacement ligament are harvested from the patellar region.



# Grafts Used in ACL Surgery

- **Autograft**
  - Patellar tendon
  - Hamstring tendon
  - Quadriceps tendon
- **Allograft (from a cadaver)**
  - Patellar tendon,
  - Achilles tendon,
  - Semitendinosus,
  - Gracilis, or posterior tibialis tendon



# FACILITIES

State of the art Equipments & Advanced Diagnostic & Surgical Facilities are available here



## How long does it take to recover?

- You should be able to go home the same day or the day after.
- It takes **six months** to recover sufficiently to return to running
- And **one year** to return to sports.



# Physical Therapy & Rehabilitation

## Physical Therapy Before Surgery

- Physical therapy plays a crucial role in successful ACL surgery
- Usually patients are sent to a physical therapist. The main goal of the therapy session is to attain the full range of motion. Patients who have stiff, swollen knee during surgery may have problems regaining motion post surgery. It takes 3 or more weeks to gain full range of motion after the initial injury. Braces are recommended during this time so that the injury may heal before the surgery

## Physical Therapy After Surgery

- After the surgery, precautions are taken to keep the wound dry and clean. Initially, physical therapy sessions emphasis on straightening knee and resorting quadriceps control.
- Ice is used to reduce swelling and pain. Physician determines if crutches and post operative braces should be used.
- The primary goal of physical therapy is to attain full range of motion as well as strengthening quadriceps and hamstring muscles while keeping swelling and pain under control.



# Rehabilitation

After you have been treated for your condition, we want to ensure that you heal properly and regain strength. Our rehabilitation team will work with you in a private setting, at your own pace and comfort level, so that you can return to your daily lifestyle. Through exercises and training, our certified physical therapy team is here to help you get back to the things you love.

**Your post operative care takes place here**



## Statistics of ACL injury

- Most often anterior cruciate ligament (ACL) of the knee is injured. It is estimated that about 200,000 injuries occur annually and about 100,000 ACL reconstruction surgeries are performed.
- The incidence of ACL injuries is higher in people who participate in sports such as basketball, skiing, football and soccer.
- 95,000 ACL Tear in USA annually. Similar is the high rate of incidence in India



# FAQS on ACL Surgery

**Can I take a shower?** You may shower, and the leg may get wet. **DO NOT REMOVE THE BUTTERFLY TAPES (IF PRESENT) UNTIL 14 DAYS AFTER SURGERY.** Remove the brace and the wraps and either sit on a chair or steady yourself with hand rails. No immersion in water is allowed for 14 days post op. This means – No soaking the leg in a bathtub, hot tub whirlpool or swimming in the ocean/pool.

**Can I Drive?** If surgery was performed on your left leg and you drive an automatic transmission car, you may drive within 2-3 days of surgery as long as you are not taking the narcotic pain medication. If you had surgery on the right leg, or drive a manual transmission, you may drive once you have adequate strength in the leg. This usually occurs between 10 and 14 days post op. We recommend you test your driving ability in an empty parking lot with supervision until you determine whether or not you can drive safely.

**What is this small puncture wound on my thigh from?** We use a guide pin to place the ACL graft in the knee. The guide pin is used for a few minutes during the surgery and there are no lasting negative effects. There may be some soreness in this area for a few weeks after surgery.

**When do I start Therapy?** You must begin therapy as soon as possible (unless instructed otherwise). This means that you must call for an appointment immediately after your first post operative visit. You **DO NOT** need to wait until the stitches are removed. Therapy can be done anywhere that is convenient and paid for by your insurance. A list of facilities is available.

**Do I need crutches?** **UNLESS INSTRUCTED OTHERWISE** – we encourage full weight bearing immediately post op. This means you may put full weight on the leg (with the brace locked straight). **YOU DO NOT NEED CRUTCHES.** We prefer that you put weight on the leg to maintain strength and to encourage healing to occur.

**When do I get my stitches out?** Your stitches will be removed between 7 and 14 days after surgery. Do I need pain medication? Most patients use the Percocet for the first few days after surgery. Most patients change over to Tylenol or Advil during the first 7-10 days. Some patients require pain medication for longer periods of time.

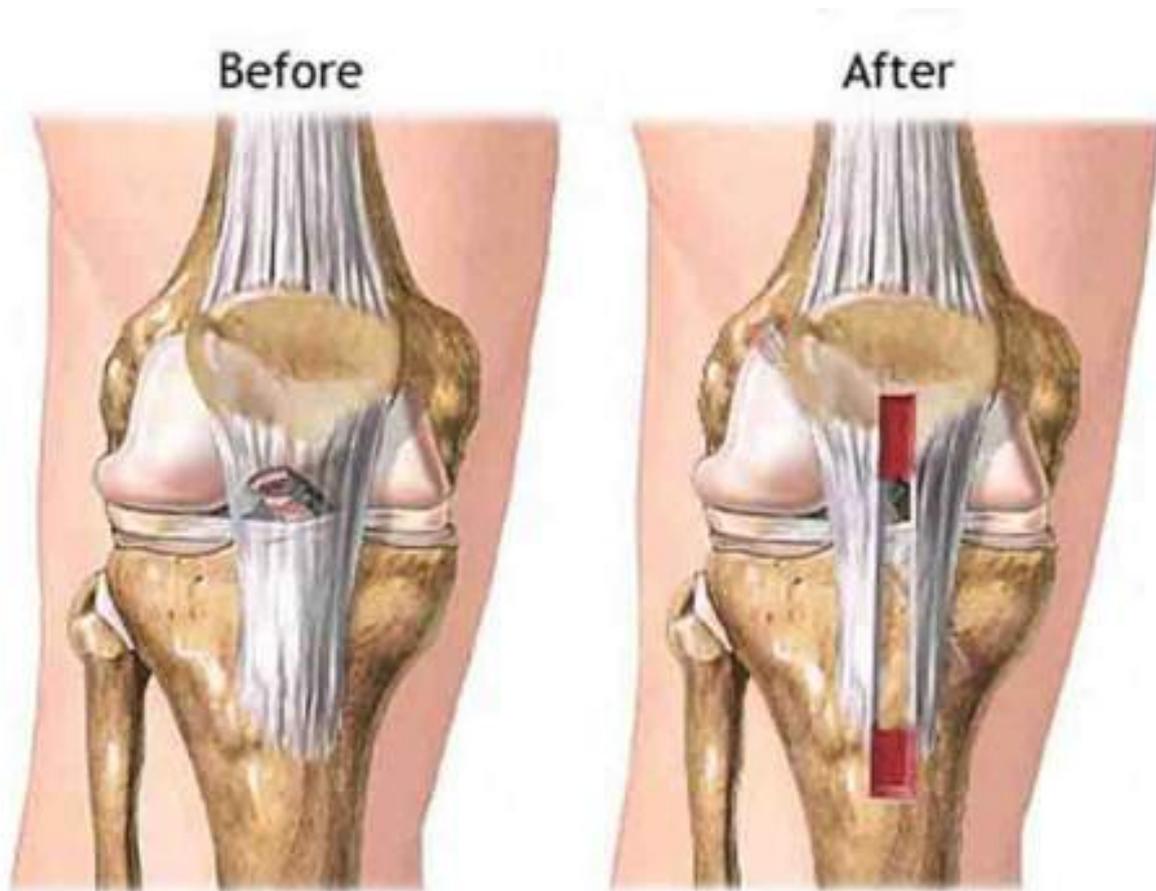
**How long do I need this brace?** The brace is used to give support so that you don't need crutches. Initially, you lack the strength to stand and the brace enables you to stand and walk. Most people use the brace for about 4 weeks. The brace is adjustable and is usually shortened at your second post op visit if appropriate for your situation. Most people gradually wean themselves off the brace. You begin by not wearing it around the home in a controlled setting and gradually lessen its use.

**When will my appointments be?** Routine post op appointments occur at 4-5 days after surgery, 7-14 days after surgery, 4 - 6 weeks after surgery, 3 - 4 months after surgery, 6 months and 1 year.

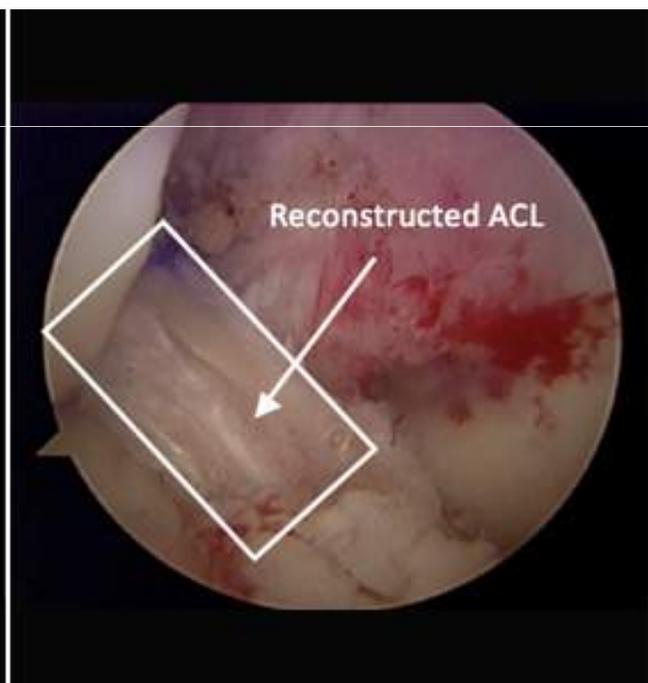
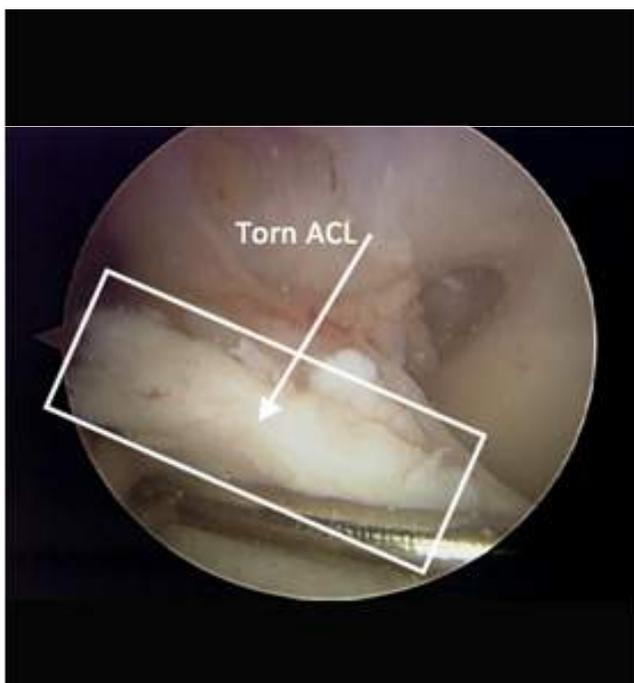
**Can I get a note for Work or School?** Notes for missing school and work are available upon request.



# Before & After – ACL Surgery



ADAM.



## Success Rate of ACL surgery

Success rate of ACL reconstruction is up to 95 %.



# A life changing experience

**“It has been 5 months now since I've had my ACL surgery and I am really pleased overall. I think I recovered very well. I can bend my knee to 100 percent of where I was before my injury. I've been walking without pain for more than 3 months, have been jogging for a month and can start doing more "aggressive" movements such as kicking the ball, changing directions suddenly, etc. Thank You Doctor.”**

**- A patient who underwent ACL Reconstruction Surgery**



# SECTION B



# What The Press Says : Set 1

## THE TIMES OF INDIA

21 November, 2013

### New surgery boon for knee patients

TIMES NEWS NETWORK

**Kolkata:** The periods of hospitalization and recovery for knee-replacement surgery patients have come down significantly, thanks to improved techniques and quality implants. Such surgery was conducted on three patients at Belle Vue Clinic on Wednesday.

Earlier, a knee-replacement surgery meant at least six days of post-operative hospitalization and the patient would be able to walk only four days later. But now, patients can stand up within hours of the surgery and start walking on the second day.

While doctors in the city have been performing minimally invasive surgery for quite some time now, minimally invasive computer-assisted total knee arthroplasty was performed on three patients—Sambhunath Bit (52), Meena Devi Chowdhury (65) and Chhaya Chattopadhyay (72)—at Belle Vue on Wednesday.

“Computer-assisted total knee arthroplasty and minimally invasive surgeries have been performed in the city, but independently. Minimally invasive



A patient after surgery

computer-assisted total knee arthroplasty is being done in Belle Vue Clinic for the first time in eastern India,” said Dr Santosh Kumar who performed the surgery, one of them live, on Wednesday.

The conventional procedure enabled the patient to stand up on the third day of surgery, walk on the fourth day and get discharged from the hospital either on the fifth or the sixth day. But minimally invasive surgery enables the patient to stand within a few hours of the surgery, walk on the second day and walk out of the hospital on the third.

## The Telegraph METRO

29<sup>th</sup> January, 2013

### Tech boost for surgery

OUR SPECIAL CORRESPONDENT

Hip and knee replacement surgeries in the city will now be more precise and less risky with a new computer-navigated technique that can tell from outside the exact position of bones and the alignment of ligaments.

Belle Vue Clinic on Monday claimed to be the first in the city to introduce the “fourth generation” machine from Germany. The new technique will make the surgeries at least 10 minutes longer. “It has more checks and balances and so it takes more than the standard one-and-a-half hours for other

computer-assisted procedures,” said Santosh Kumar, orthopaedic surgeon and head of the joint replacement surgery unit at Belle Vue.

Computer-navigated surgeries have been conducted in Calcutta since 2006, but the German technology promises to increase the accuracy of knee-replacement surgeries from around 80 per cent to up to 95 per cent, say doctors.

The machine maps the position of bones in the knee joint using sensors. These sensors create a detailed image and provide information on a computer screen that help the surgeon install the implant. “The equipment not only

takes into account the bones but also aligns soft tissues like ligaments. So there is less chance of damage to ligaments and other uncertainties too,” Kumar pointed out.

Buddhadeb Chatterjee, orthopaedic surgeon with Apollo Gleneagles Hospitals, said the software would make things easier for surgeons. “Steps like bone registration are not required. Bone registration is a process in which pointers are rubbed on the bones and the images are transferred to the computer through infrared,” said Chatterjee.

He said the software was more precise and therefore better results were expected.

## THE ASIAN AGE

21 November, 2013

### Advanced knee surgery raises patients' hopes

AGE CORRESPONDENT KOLKATA, NOV. 20

For the first time in eastern India, Minimally Invasive Computer-Assisted Total Knee Arthroplasty (MICA-TKA) surgery was performed on three patients on Wednesday. The knee surgery reduces recovery time for patients.

The surgeries were performed at Belle Vue Clinic under the supervision of Dr Santosh Kumar. Interestingly, the live surgery performed on the knee of 72-year-old Chaya

Chatterjee was shown on a giant screen at the clinic. It was a unique way to introduce one of the best medical advancements.

This latest (MICA-TKA) procedure enables patients to stand up on his feet on the same day of the surgery, climb the stairs on the second day and are released on the third day. While the conventional procedure takes at least seven days' time for the knee of a patient to function properly.

According to Dr Kumar, the knee transplant is useful for professionals who need a high performing knee.

“The surgery results in fantastic tackling of knee cap bone which leads to improved and full knee bending.

“With this knee transplant, people now will be able to use public transport, indulge in sports activities and lead a normal life,” said Dr Santosh Kumar, who is also the head of the clinic's Computer-Assisted (Navigated) Joint replacement Centre.

## The Statesman

KOLKATA, THURSDAY 21 NOVEMBER 2013

### Urgent joint replacement at prominent city hospital

STATESMAN NEWS SERVICE KOLKATA, 20 November

Good news awaits for people requiring urgent joint replacement and expecting a speedy recovery. The Belle Vue Clinic has introduced a minimally invasive procedure, which would take one-and-a-half hours to conduct knee surgeries and more importantly, the patient would be able to stand on his feet on the same day of the surgery.

A team of doctors led by Dr Santosh Kumar, who performed a live surgery before a battery of media persons at the Belle Vue today said, “The minimal invasive technique is less time taking and the patient can stand on his feet on the same day of the surgery and can walk or climb stairs on the second day.”



total knee arthroplasty has been done for the first time in the eastern part of the country. Unlike conventional surgeries where the patient takes a longer time to heal, the latest procedure not only saves time, but also leads to a very minimal blood loss,” said Dr Kumar, the head of computer-assisted (navigated) joint replace-

ment centre at Belle Vue. He further said, the transplant costs a little more than Rs 1 lakh, and can last for several years. “The treatment is of immense help to those who are at the peak of their professional lives and look for early recovery. They can resume normal life within a few days of surgery.”

## THE ASIAN AGE

29<sup>th</sup> January, 2013

### KNEE JOINT REPLACEMENT MACHINE UNVEILED

AGE CORRESPONDENT KOLKATA, JAN. 28

The world's most modern and advanced knee-joint replacement navigation machine, OrthoPilot, an innovation to make knee and hip surgeries accurate and mathematical was unveiled on Monday at Belle Vue Clinic.

Made in Germany, the

fourth generation machine is said to be the first of its kind in eastern India. Consultant orthopaedic surgeon and head of KIMS, Hyderabad, Dr Krishna Kiran said: “It's the precision which has enhanced with OrthoPilot. It is more accurate as machine allows error-free surgery.”

## hindustantimes

29<sup>th</sup> January, 2013

### NOW, COMPUTERS AID IN JOINT REPLACEMENT SURGERY IN CITY

HT Correspondent

letters@hindustantimes.com

**KOLKATA:** Belle Vue Clinic installed ‘orthopilot’; on Monday, the fourth generation navigation system that helps doctors eliminates human errors in hip and knee replacement and corrective surgeries.

“The machine's efficiency is much higher than the devices normally used for knee and hip replacement surgeries. Orthopilot is a hi-tech machine for enhancing precision during surgeries,” Dr Krishna Kiran, director, Institute of Computer Assisted Joint Replacement Centre, Hyderabad, said during the launch of the German-manufactured device.

“Prior to computer-assisted devices, we couldn't be certain that an implant would be placed in the optimal position. It allows easy minimally invasive surgery, decreasing recovery time and post-operative pain,” he said.

The increased accuracy also help increase the life of the implants, while causing less blood loss in the patient. In fact, most patients are able to walk one day after the surgery.

Stating that Orthopilot is a powerful surgical tool that combines dedicated software with superior instrument design, knee

surgeon, said Dr Santosh Kumar, head of the institute of Computer-assisted (navigated) joint replacement centre at the clinic.

“It guides a surgeon to make precise cuts in the joints and remove deformities, by using infrared camera. It gives patient specific information during surgery while virtually eliminating expensive and radiation intensive CT and MRI scans before the surgery,” Dr Kumar added.

## THE TIMES OF INDIA

29<sup>th</sup> January, 2013

### Orthopilot for accurate joint surgery

**Kolkata:** Have someone in your family, who needs to undergo a hip or knee joint replacement surgery? Yes, these surgeries are common in the city now but precision levels depend on the surgeon's eyes. Hence, many patients complain of problems post surgery as the replaced knee is misaligned. So, those asked to go under the scalpel may harbour apprehension after hearing tales of misalignment.

But help is at hand in the form of a computer-guided orthopilot. The fourth generation hip and knee joint replacement navigation machine was inaugurated at the Belle Vue Clinic on Monday. Housed in the hospital's Institute of Computer Assisted (navigation) Joint Replacement Centre, the orthopilot is the first in eastern India.

The institute's head, Dr Santosh Kumar, said: “Orthopilot eliminates uncertainty and enhances precision. It also enhances long term results as deviation from goals during surgery is eliminated and the implants survive 1.5 to two times longer.” According to him, a replaced knee under conventional surgery lasts 8-10 years, while one implanted with an orthopilot stays intact for 15-20 years. The costs under both techniques remain around the same—Rs 1.80 lakh. The same surgery costs Rs 15 lakh in Indian currency in the UK, he said.

“The treatment is of immense help to those who are at the peak of their professional lives and look for early recovery. They can resume normal life within a few days of surgery.”

## News About Dr.Santosh Kumar, About Ortho Pilot & Advanced Procedures Done By Him



POORVA ORTHOPAEDIC



# Patients' Experiences [ All Ortho Procedures ]



**Maya Ghosh, 66 years  
Kolkata**

"I had been suffering from knee pain for last one year. It was difficult to walk. I heard of Dr. Santosh Kumar from my friend and got my knee operated. I now can walk. My friend too is well now. Thanks to Dr. Kumar".



**Mr Das, Ulta Danga, Kolkata**

Operated for Rheumatoid Arthritis of knee. Total knee replacement done in may 2012. Retired but socially very active, was crippled and home bound, till he started moving out after knee replacement. He says, " it feels as if my age has reduced by 20 years".



**Prem Lakhani, 75 years, Kolkata**

"I had long knee problem . I consulted Dr. Santosh Kumar. I was operated on 7 Jan, 14, detained in hospital for 4 days and started walking within 4 days. No pain and I am walking almost normally. I am back to normal work. Thanks to Dr"



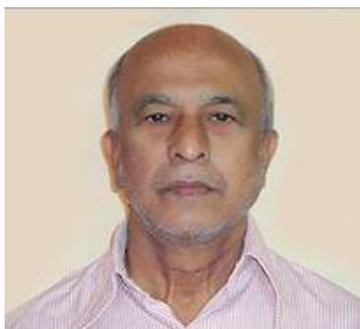
**Parbati Roy, 67 years, Kolkata**

"I am 67 year. I have been suffering since 2005 and was under medication. In Oct 2013, I was almost crippled. At this stage, one of my cousins suggested for Dr. Santosh Kumar. He operated my right knee and my left knee was operated in next July. Am fine now"



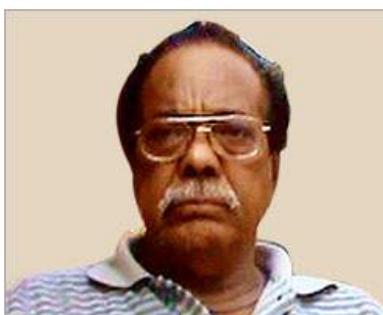
**Sister Jaya, Belle Vue Clinic**

"Working as in-charge nurse had become so painful till I saw some operated cases by Dr Kumar and their results at our hospital. I decided to go for Knee Arthroplasty( replacement). Am happy that within a month I joined back my work with confidence."



**Mr Banerjee, Beliaghata, Kolkata**

An retired footballer says, "knee pain and stiffness had crippled my life in sharp distinction to the joy of playing football in my early age, actually I had suffered from ACL injury which accelerated osteoarthritis. I am happy that the joy of movement has been restored".



**Arun Kumar Jana, 71 years**

"I have been suffering from knee pain since 2005. I got Dr. Santosh Kumar's contact through internet. He advised for knee replacement. Although I was scared by many, yet Dr. Kumar explained all in details and operated. He and his team had been cooperative".



**Prof. Malabika Deb**

After the knee replacement, I can climb up the stairs and walk. Feeling much better...



**A Patient rides a bicycle with ease after undergoing Knee Replacement by Dr. Santosh Kumar using Orthopilot, an advanced computer navigation procedure.**

**More Patients Experiences & Testimonials can be provided on request**



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7	Bajaj Allianz Life Insurance Co Ltd
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**Almost All Insurance Companies & Majority of TPAs Accepted By Us**



# Consult the Doctor via Online or Video Conference

Dr. Santosh Kumar is available for video conference with the patients for better understanding between the patient and the doctor. What you need to do is to fill in the form in the website [ format given below ] and submit. You will be intimated duly over phone/through mail the date and time for video conference.



You need to have Skype ( free software for video conferencing ) downloaded in your computer. Now add Dr. Kumar in the contact with his ID, E-mail and Phone No that will be communicated to you. You should have a web camera attached to your computer. You can interact with the doctor at the pre appointed date and time.

* Name :	<input type="text"/>
* Address :	<input type="text"/>
* City :	<input type="text"/>
* Pincode :	<input type="text"/>
* Phone :	<input type="text"/>
* E-mail :	<input type="text"/>
* Why do you want to go for video conferencing with the doctor :	<input type="text"/>
	<input type="button" value="Submit"/> <input type="button" value="Reset"/>



# For Outstation Patients

If you reside outside of Kolkata, you can contact us in either of these ways :



## Online Consult with Doctor.

Please check our website for details



## Video Conference with Doctor

Kindly go through the Video Conference page



## Tele Consult with Doctor

Please call the Helpline numbers



## Meet Doctor In Person.

Before surgery / procedure, do meet the Dr in person once.



## Patient's Suite / Room

Patient can choose either Suite or Normal room



## Treatment Centre Location

This is situated at the heart of Kolkata city



Guest Suite / Room [ Family members / Friends accompanying the Patient can choose to stay at this Star Hotel situated adjacent to the Treatment Centre : as per their budget / preference ]





# For Communities & Institutions

For The Kind  
Attention Of

- Hon. President / Secretary
- Admin. Dept. / Committee Heads
- Medical Officers / Office Bearers / Volunteers Of :

Government /  
Para Govt. Bodies

NGOs / Voluntary  
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With Special Needs [ Orthopaedic ]

We can help you or involve with your organization in any the following ways :

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Seminars for your members

Special Health Cards /  
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Concessions in Procedures /  
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Or Email : [santdr@gmail.com](mailto:santdr@gmail.com)





## For Corporate Clients

For the Kind  
Attention Of

- **CMOs [ Chief Medical Officers ]**
- **HR / PMIR / Admin. Heads**
- **VP / Centre / Divisional Heads**
- **CEOs / Directors / Management**

By having a Corporate Tieup with us, You & Your employees can have the following benefits :

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Screening

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Ortho Panel  
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Ortho Concierge

Ortho Health  
Tele Triage

Health Education  
via Corp. Intranet

**Please Call :** +91 98319 11584

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**MASSIVE SAVINGS**



**ENGLISH SPEAKING DESTINATION MANAGER**



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Conditions apply



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**WARRANTY OF IMPLANT**



**PRE & POST SURGERY CARE**



**SUITABLE PACKAGES**



**DIRECT CONSULTATION WITH DOCTORS**

Kolkata is 3<sup>rd</sup> largest metro in India & one of the largest in Asia. Meditourism is flourishing here with patients from all over the world including USA, UK, Australia, Europe, Gulf, African & surrounding Asian countries.



Please Call : +91 98363 65632  
International Patient Manager / Co-ordinator  
Or Email : santdr@gmail.com

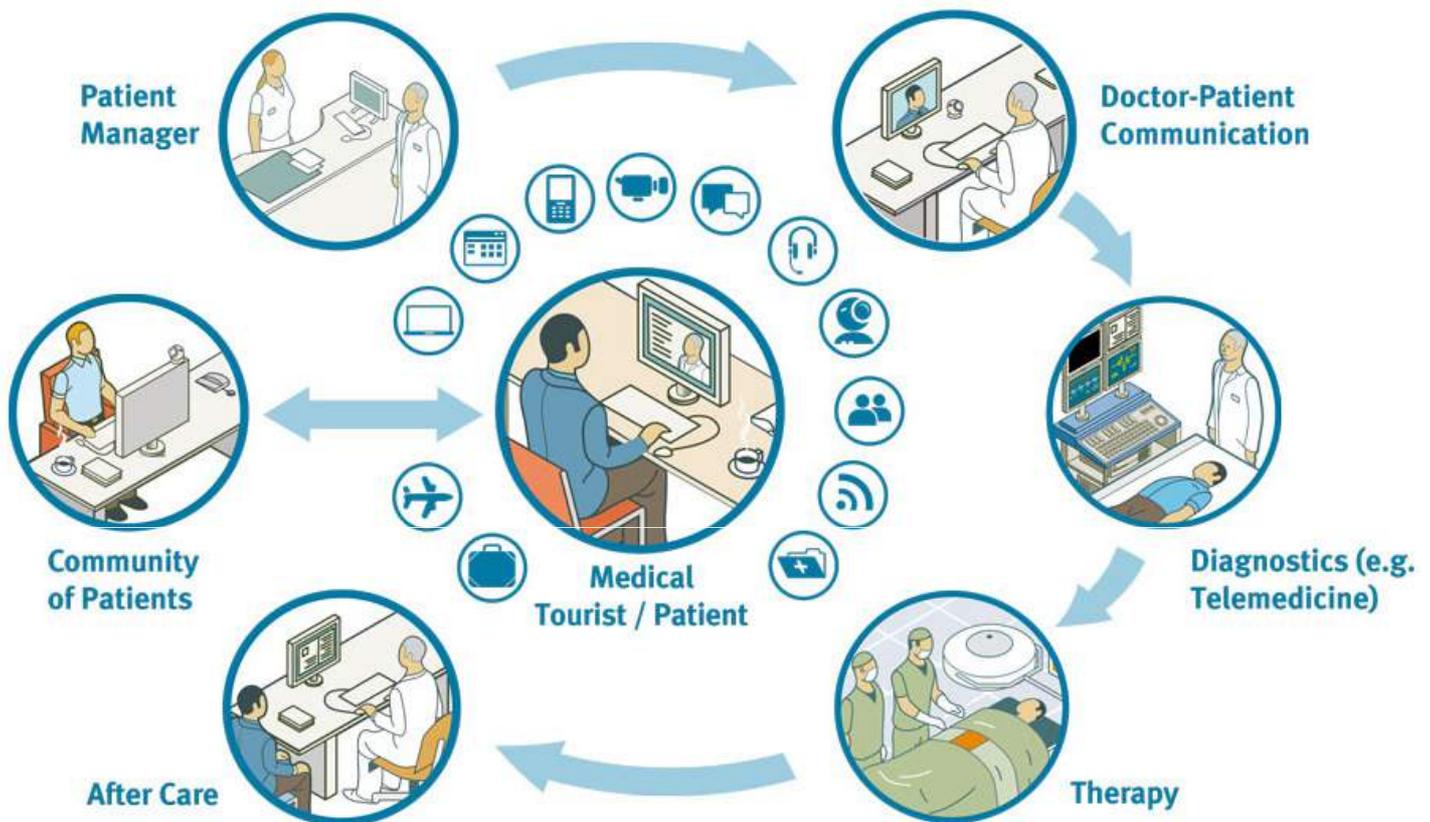


**POORVA ORTHOPAEDIC**



# For International Patients

If you reside outside India, you can contact our Patient Relation Manager who will guide you through these process to make your treatment comfortable.



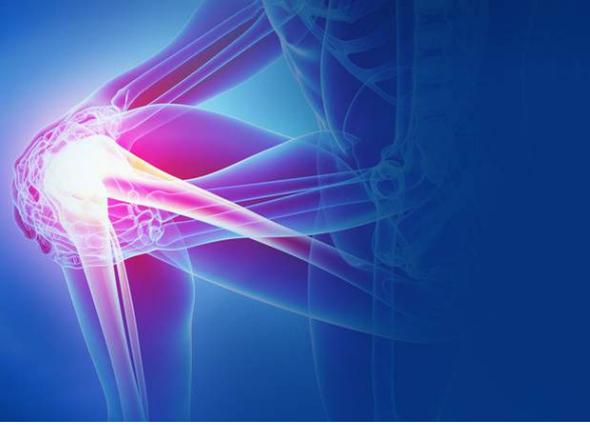
**Please Call :** +91 98363 65632

International Patient Manager / Co-ordinator

**Or Email :** [santdr@gmail.com](mailto:santdr@gmail.com)



# The Fees



For Consultation  
In Person / Visit

- **Rs 800 INR**
- **\$ 13 [ US Dollars ]**

For Consultation  
With Digital X-Ray

- **Rs 1,000 INR**
- **\$ 16 [ US Dollars ]**

For Video Conference  
With Doctor

- **Rs 600 INR**
- **\$ 10 [ US Dollars ]**

For Tele  
Consultation

- **Rs 300 INR**
- **\$ 5 [ US Dollars ]**

For Special  
Consultation

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- **\$ 2 [ US Dollars ]**

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Via Email.  
Will be Co-ordinated with  
Patient Relations Manager

For Group  
Consultation

- **As Per Case  
& No. of Patients**

For Communities /  
For Charitable Groups /  
For NGOs / VOs / Etc

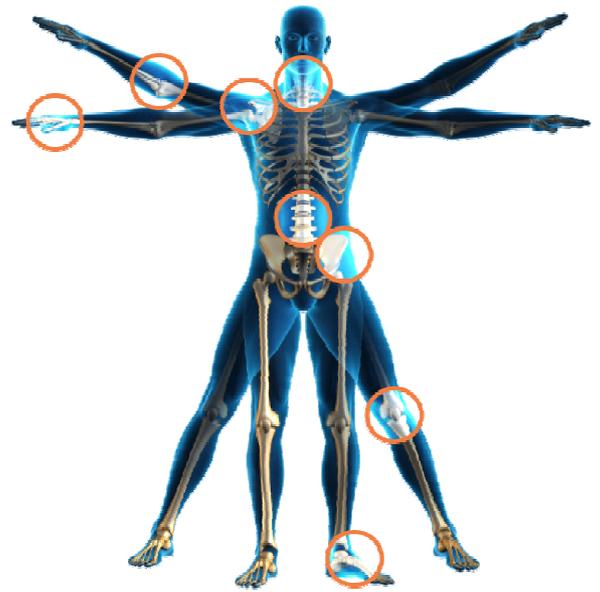
**Please Call : +91 98363 65632 [ Patient Relations Manager / Co-ordinator ]**  
Or Email : [santdr@gmail.com](mailto:santdr@gmail.com)



# About the Foundation

Poorva International Orthopaedic Foundation was created as a health charity dedicated solely to help people build, maintain and restore their bone and joint health. We do this by raising and allocating funds for the research, education, treatment and care that help patients to live and move independently - longer and stronger.

We invite you to help us in whatever capacity you can to fight against orthopaedic diseases & disorders. Your participation helps the tens of thousands of people living with pain, isolation, unhappiness and an inability to enjoy life due to bone and joint disorders such as arthritis, osteoporosis and injury.



Founded in 2014, Poorva Orthopaedic Foundation is a national registered charity powered by professional staff and network of volunteers. The Foundation is Kolkata's only health charity dedicated solely to helping people maintain and restore their bone and joint, or orthopaedic health.

## What we do

Poorva Orthopaedic Foundation raises money through the trustees' donations and invests those funds in programs to advance orthopaedic research, promote patient and public education, and improve community care.

The Foundation is committed to patient education and to providing patients and their families with accurate, up-to-date information that will make going through orthopaedic surgery a little easier and less frightening.

## Our Vision:

To be Patients' voice for bone and joint health.

## Our Mission:

To achieve excellence in bone and joint health, mobility and function for all patients through the advancement of research, education, and care.

## Our Values:

**People:** We work in the interest of orthopaedic patients, their families, and the professionals who treat them and for the future of any Individual who may require orthopaedic care.

**Making a Healthy Difference:** We contribute to the health of our communities and our nation by working with volunteers, patients, professionals, government and industry toward timely and quality access to bone and joint care.

**Good Governance:** We are committed to excellence in the governance of our organization and will do so ethically, morally, according to the law, and towards the achievement of our Mission.

**Help to keep people on the move!**





**POORVA INTERNATIONAL  
ORTHOPAEDIC FOUNDATION**



## **Connect with us**

**Call :** +91 98363 65632

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**Email :** [santdr@gmail.com](mailto:santdr@gmail.com)

**Visit :** [www.mykneemylife.org](http://www.mykneemylife.org)

### **Consult :**

Ortho Dept., Belle Vue Clinic,  
7 Loudon Street, Kolkata 700 017,  
West Bengal, India

Regd. Office : Beliaghata, Kolkata 700 010