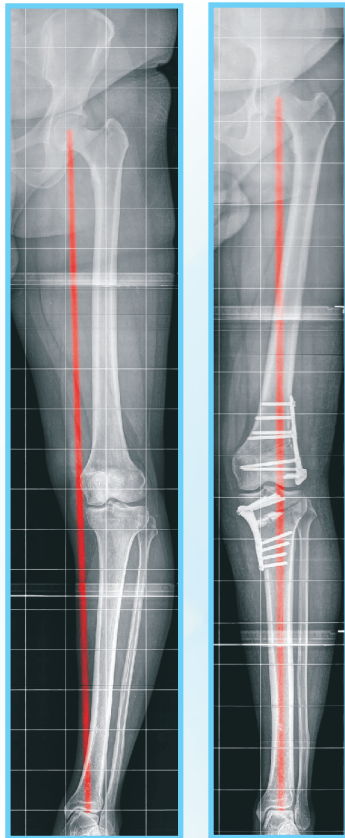




THE ORTHOPAEDIC SPECIALITY CLINIC

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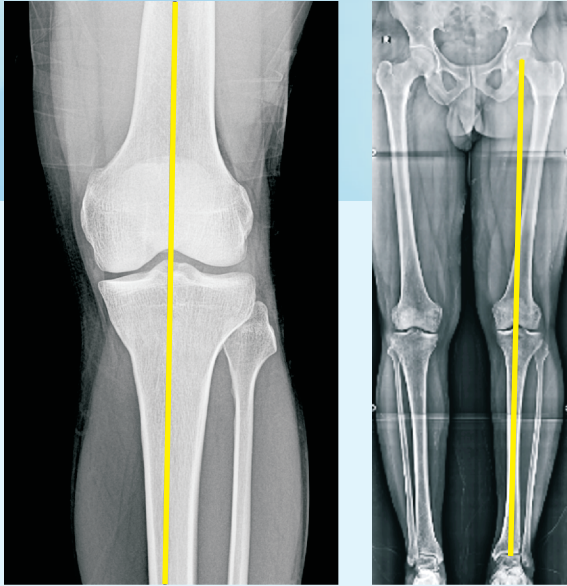


PATIENT'S GUIDE

OSTEOTOMY

What is an Osteotomy?

An Osteotomy is a surgery in which the bone is cut and realigned to correct a deformity. This cut in the bone, which makes the limb "straight" is fixed with plate and screws. The cut can be created to open a trapezoidal space called 'Open Wedge Osteotomy' or to remove a piece of bone to close the space called 'Closed Wedge Osteotomy'.



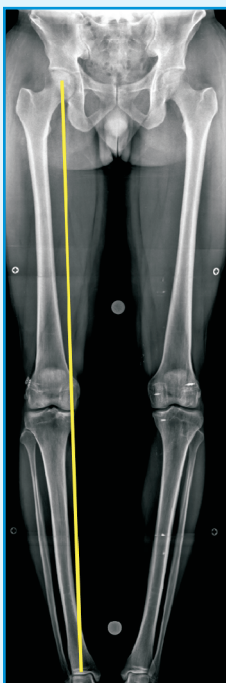
What is Normal Alignment?

Our lower limbs are aligned such that the center of hip, knee and ankle joints, are in a straight line. This alignment helps in correct transmission of loads to the bone & joints, and the muscles work in tandem to provide good function, without pain.

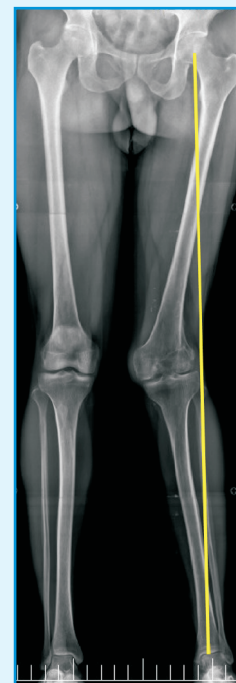
In the normal leg, the alignment is 'neutral'. This means that the weight bearing line passes through the centre of the knee.

How Alignment is measured?

Alignment is measured on full-length X rays of both lower limbs, called a 'Scanogram.' A scanogram provides information about the presence of malalignment, and also defines where the deformity lies and quantifies the extent of the same. When the leg is deviated inwards, it is called a 'varus' deformity and an outward deviation is called a 'valgus' deformity.



Varus deformity



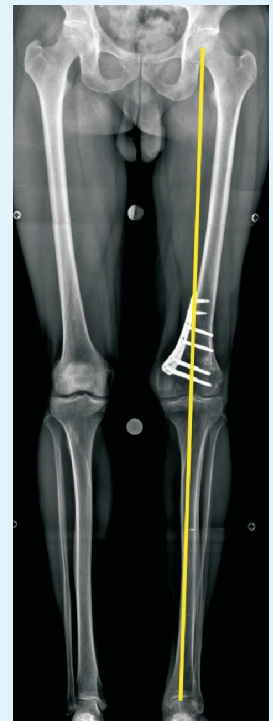
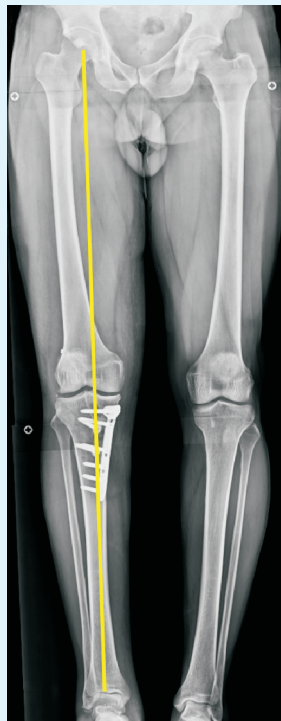
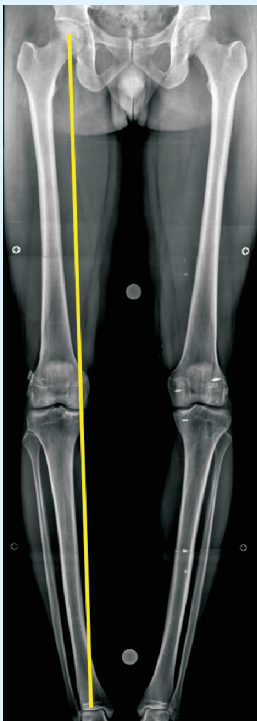
Valgus deformity

When is an Osteotomy performed?

An Osteotomy is performed when correction of the malalignment is desired. Malalignment may occur either at the level of the joint, or within the thigh bone (femur) or the shin bone (tibia). An uncorrected malaligned limb produces harmful forces on the joint surfaces which then causes rapid progression of arthritis in the affected joint. The causes of malalignment may be an old fracture, a neglected ligament injury or progression of pre existing osteoarthritis.

In about 20 to 25% of Indian patients, the legs are bowed since birth. This is called Constitutional Tibia Vara. This may predispose to arthritis.

Sometimes an Osteotomy is suggested as an additional surgical procedure, when a torn cartilage is repaired or a torn ligament in a malaligned leg. It is imperative to correct any associated malalignment in these patients to ensure long lasting success of the ligament, meniscus or cartilage repair procedure. The Osteotomy “off-loads” the damaged area of the joint and results in better outcomes for the patient.



Principles of Correction

When we decide to do an Osteotomy and we have obtained the necessary X ray images, we feed these images to a specific computer program such as Trauma Cad, MediCad or Bone Ninja. On these software programs, we calculate different angles to give us a precise idea as to where the correction will be required and to what extent. Based on the same, we go ahead and plan the Osteotomy such that we achieve a 100% accurate result.

Sometimes after calculating the various angles, we find that the deformity is present at more than one location. In such cases we may have to perform a Double Level Osteotomy – an Osteotomy at 2 sites.

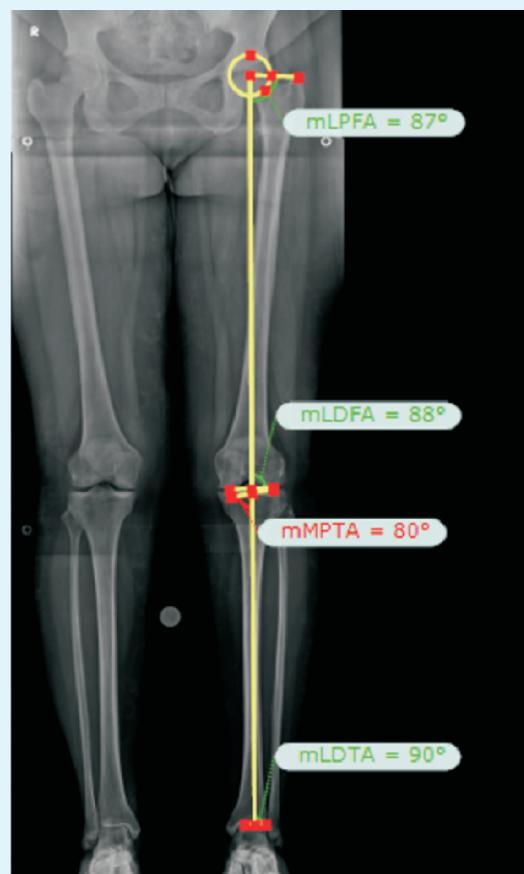
TraumaCad Client using TraumaCad Server on <https://services>

File Image Basic Tools Measurement Tools Window Help

Deformity

	Image	Templates	Measurements	Report
Angle (°)	Pre	Normal	Post	
mLPFA	87	85-90		
mLDFA	88	85-90		
mMPTA	80	85-90		
mLDTA	90	86-92		
JLCA	8	0-2		
Length (mm)	Pre	Normal	Post	
MAD	1			
Femur	401			
Tibia	306			
Total Length	711			

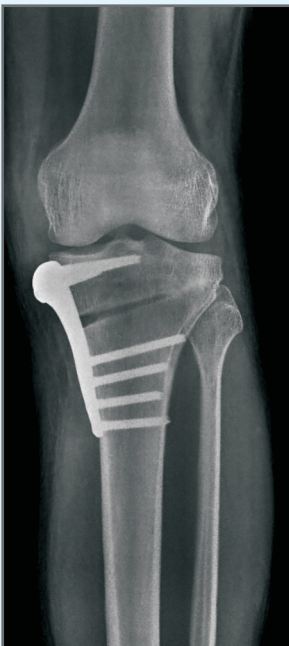
☒ Show Limb Alignment Analysis



Why is an Osteotomy fixed?

An Osteotomy is fixed with the help of plates and screws. This is to maintain the corrected position until the Osteotomy heals. Fixation is done with titanium plates and screws and each Osteotomy will have its own specially designed plates.

In an Open Wedge Osteotomy, a gap is created at the site where the bone cut is made. This opening may at times be left open to heal naturally and fill up with bone. Gaps of usually upto 10 mm heal naturally. Larger defects may require filling of the gaps with bone grafts. These may be either harvested from the patient's own pelvic area, or with bone that is stored in a bone bank (allograft). In certain special situations, we may also use artificial bone graft wedges.



What is the Rehabilitation after Osteotomy?

The rehabilitation after Osteotomy is determined by whether an additional surgery was performed simultaneously for a torn meniscus, cartilage or ligament.

After an Osteotomy one can take full pressure and walk on the same day. This has been made possible with the use and advent of specially designed plates, which are able to take the full weight of the patient.

A long knee brace is used for rest and to keep the knee straight. Initial rehab is focused on reduction of swelling and pain with cryotherapy and activation of quadriceps muscle with exercises.

When an Osteotomy is combined with another procedure such as a ligament reconstruction or repair of the meniscus or cartilage, this protocol may be changed. Based on the associated procedure performed, it may be advised to walk with a pair of crutches for 3 to 6 weeks. Knee range of motion is usually allowed and most patients return to normal level of activities in about 4 to 6 weeks.

Driving is usually permitted around 6 weeks, and light gym programme may be started around 3 months.



Long Knee Brace



Cryocuff

What will be my function after an Osteotomy?



The biggest advantage of performing an Osteotomy for arthritis is preserving the native joint and its mechanics. This provides excellent function, which a joint replacement can possibly not. You will be able to squat, sit cross-legged, perform yoga, and participate in any sports or gym activities. This is a major advantage when one intends to lead an active lifestyle.

What are the complications of Osteotomy Surgery?

An Osteotomy surgery is a major undertaking but can be performed safely. Complications like pain, infection, clotting of blood in leg veins, injuries to blood vessels or nerves are no greater than any other orthopaedic procedure. An inadvertent fracture of the bone during Osteotomy is a possibility but can be avoided with technical expertise. If this does happen, rehabilitation is more gradual and does not impact the outcome greatly.

This was an overview of indications and the benefits of performing an Osteotomy. Do reach out to us if you have any questions or have any doubts that need to be cleared.

- Sports Injuries & Arthritis
- Advanced Knee / Shoulder Arthroscopy
- Primary / Revision Joint Replacement
- Joint Preservation

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Next to Ruby Hall Clinic,
Lane Before Gold Field Plaza,
Sassoon Road,
Pune - 411 001



Patient education initiative by "Tapasvi Charitable and Medical Center"