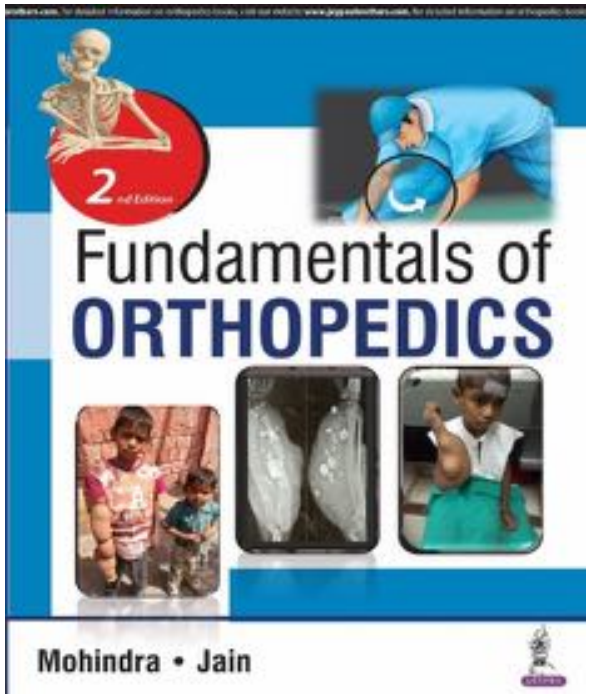

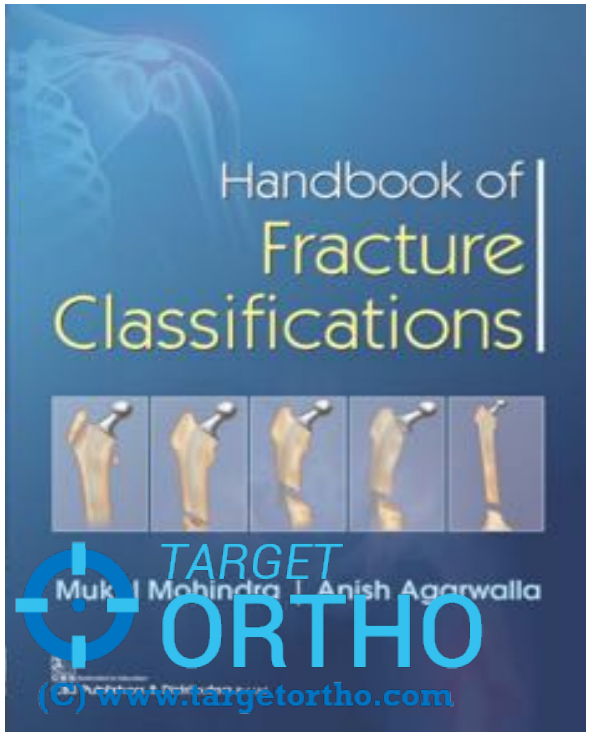

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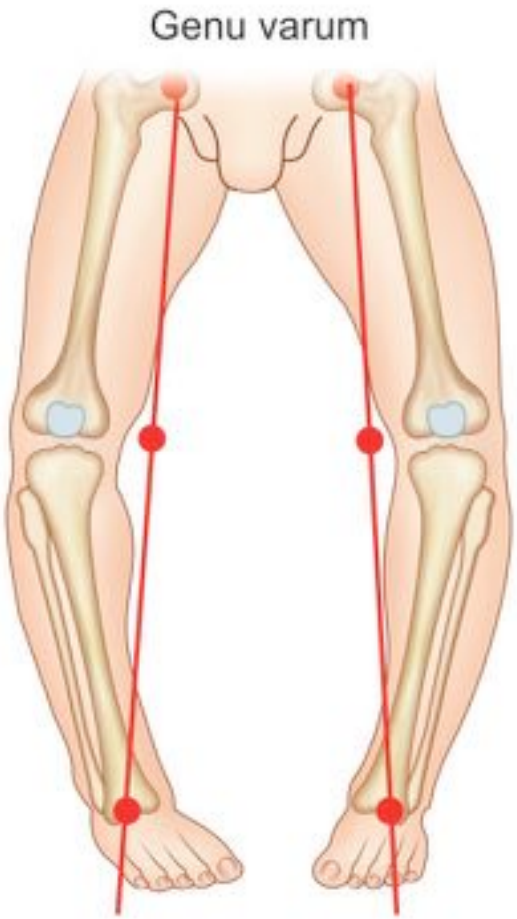
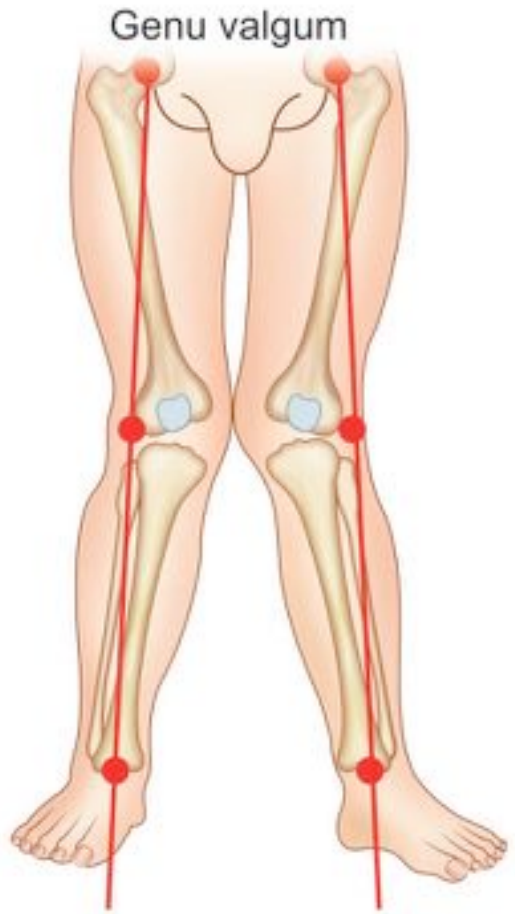
ANGULAR DEFORMITIE AROUND KNEE

GENU VARUM AND VALGUM

Inter-malleolar distance *at ANKLE*

Distance between medial joint lines *at KNEE*





FEMORO-TIBIAL ANGLE

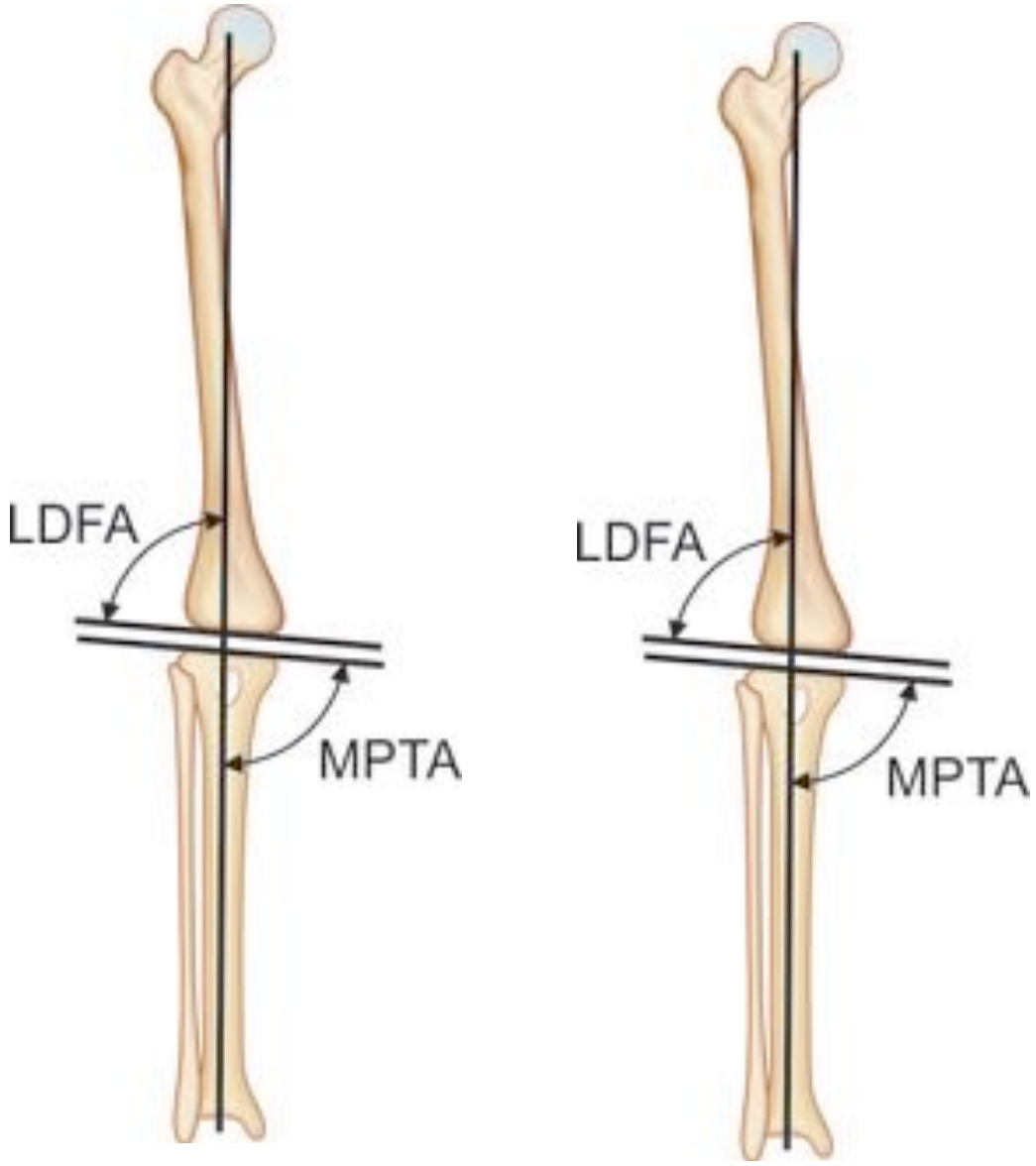
QUANTIFICATION

FINDING THE BONE THAT HAS THE DEFORMITY

FINDING THE BONE THAT HAS THE DEFORMITY

Genu
Valgum

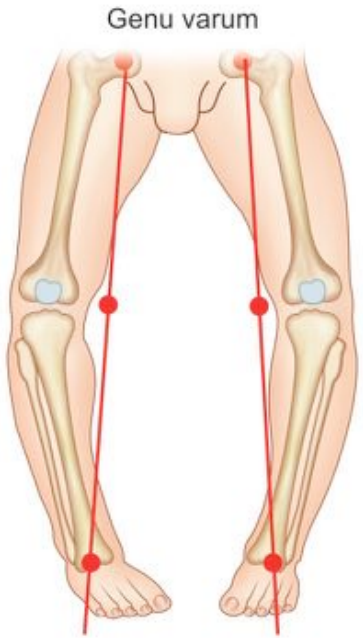
Genu
Varum

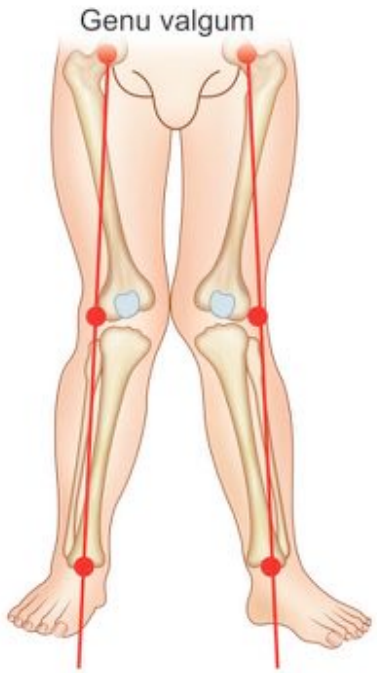


LDFA: Lateral distal femoral angle

MPTA: Medial proximal tibial angle

CAUSES



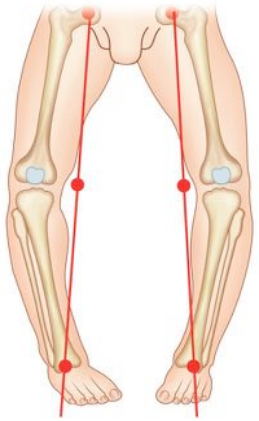


NORMAL ALIGNMENT

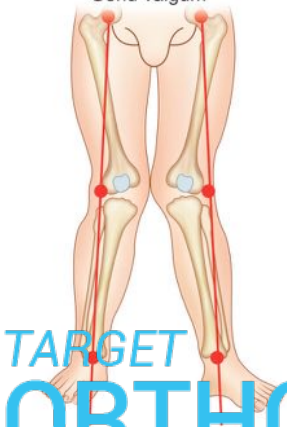
0-18 months | **18-24 months** | **2-5 years** | **5-6 years**

CAUSES

Genu varum



Genu valgum



Phenomena behind COZEN's Fracture/ deformity?

Q.

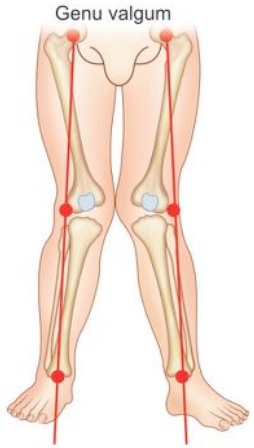
Most likely reason

A. Asymmetrical growth stimulation at physis

B. Lateral tethering of IT band

C. Weight bearing prior to fracture consolidation

D. Periosteum interposition at fracture site

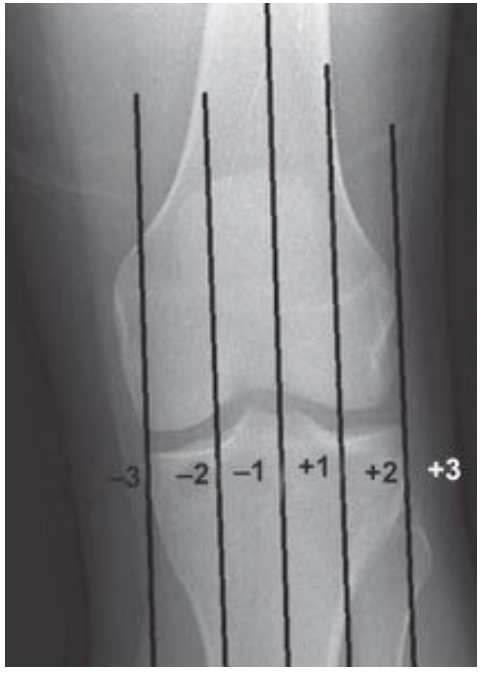


Rx

- *Idiopathic*
- *Age*

When to correct the deformity !!

- Femoro tibial angle > 15^{o}
- Inter-malleolar distance is > 10 cms
- Mechanical axis is in Zone 3
- Mechanical axis in Zone 2 but knee pain/ recurrent lateral patellar subluxation



How to correct the deformity !!

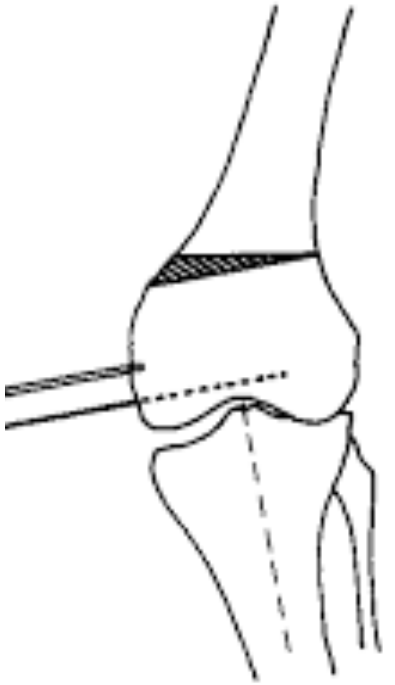
Years of Growth Pending

1-2 years

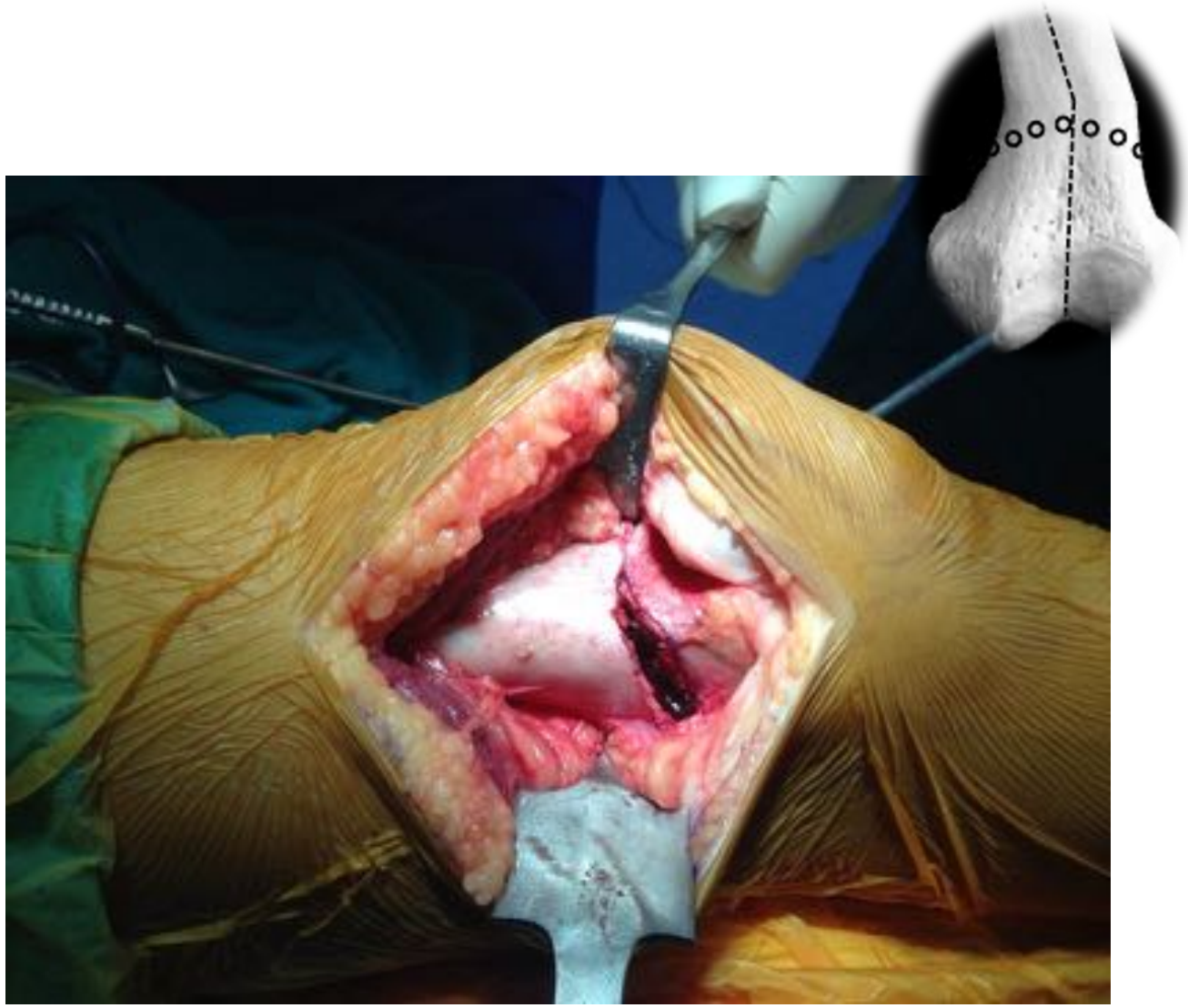
> 2 years

Growth
plates fused

DISTAL FEMORAL OSTEOTOMY

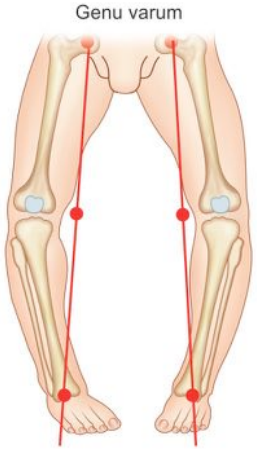


DOME OSTEOTOMY



SUPRACONDYLAR “V” OSTEOTOMY

STEP CUT
TRANSLATIONAL OSTEOTOMY



Rx

Cause

Age

Indication

BLOUNT'S DISEASE (TIBIA VARA)

Developmental disorder (not Congenital) with progressive bow leg deformity (usually Bilateral)

Osteochondrosis of proximal medial tibial physis

Presentation

Early walker kids

Overweight children (> 95th percentile)

Infantile (< 4 years onset)

Juvenile (4-10 years)

Adolescent (> 10 years)

C/Fs

Bilateral (usually) or Unilateral deformity

Obese child

Acute angular bowing below the knee

Genu recurvatum (hyper-extension)

Limb Length may be short

SIFFERTZ KATZ SIGN:
Medial femoral condyle subluxates postero-medially into depressed medial tibial plateau as child walks !!

Radiology

Physeal enlargement

Fibular physis very near to knee

Physeal bar may be seen

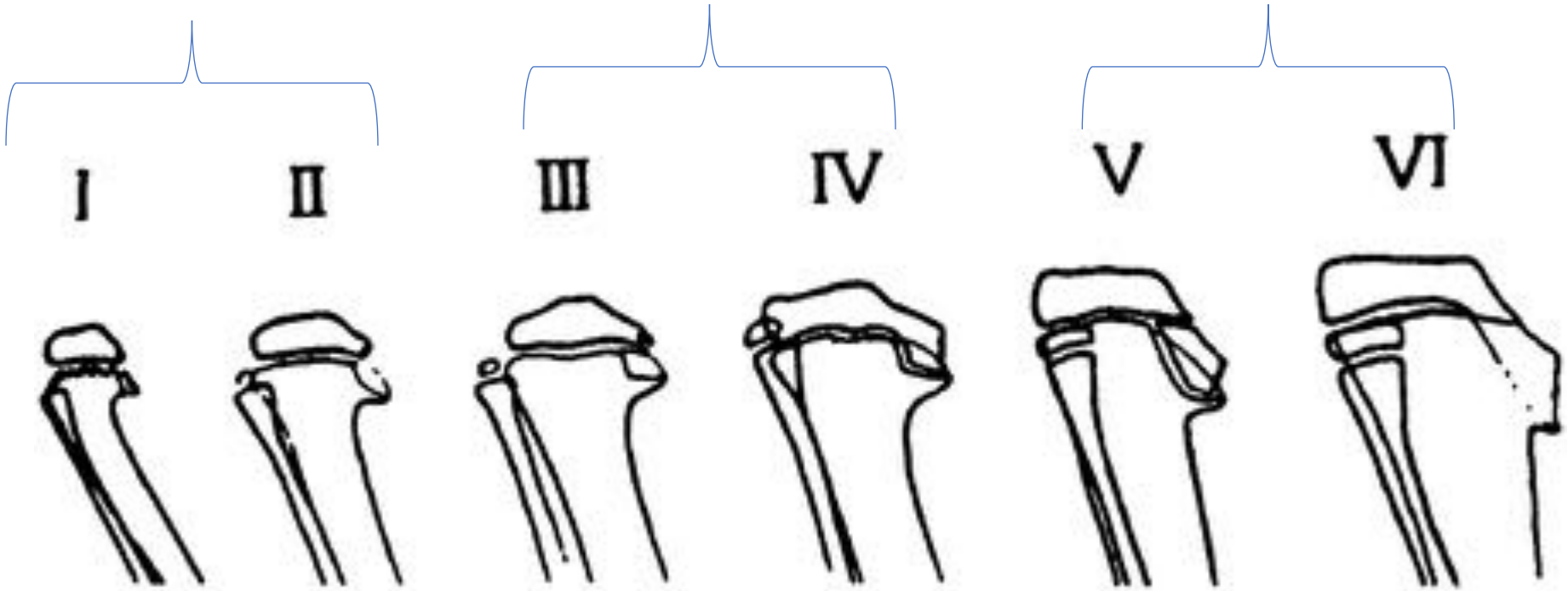
Metaphyseal-Diaphyseal angle of Drenan

LANGENSKIOLD CLASSIFICATION






Stage	I	II	III	IV	V	VI
Features	Medial and distal beaking of the metaphysis	Depression/ tapering in the medial metaphysis	Deepening of the metaphyseal beak to form a sharp angular step	Ossification into the metaphyseal step causing epiphyseal enlargement	Cleft in the epiphysis (a separate medial fragment can be seen)	Closure of the medial proximal tibial physis (bony bridge formation)
Pictorial description						



Surgery must not be delayed beyond the age of

Q. A 12 years male has come to you with Blount's disease. What else must be searched for having been missed?

A. DDH

B. SCFE

C. CTEV

D. Metatarsus adductus

RICKETS WITH A DEFORMITY (GENU VARUM OR VALGUM)

Q. Best method to assess healing in a case of Rickets?

A. Serum Vitamin D levels

B. Serum Alkaline phosphatase levels

C. X ray

D. Serum calcium phosphorous levels

Q. Best method to assess healing in a case of Rickets?

A. Serum Vitamin D levels

B. Serum Alkaline phosphatase levels

C. X ray

D. Serum calcium phosphorous levels

Q. A child comes to you with Rickets and has genu varum at the knee. Vitamin D was given for 3 months and growth plates healed on x ray. But deformity did not disappear. What will be best time to refer this patient to the Orthopedic surgeon for a corrective osteotomy?

A. When serum Vitamin D levels become normal

B. When serum Alkaline phosphatase levels become normal

C. When serum calcium phosphorous levels become normal

D. Only when Femoro-tibial angle is < 0^{o} on X-ray

RICKETS WITH A DEFORMITY (GENU VARUM >> VALGUM)

Q. Patient has RA and has multiple deformities in both lower limbs. Supposedly all are troubling the patient equally and there is no response to conservative treatment; then what is the recommended preference for surgical intervention?

A. Knee > Hip > Foot

B. Foot > Knee > Hip

C. Hip > Knee > Foot

D. Foot > Hip > Knee

Q. Patient has RA and has multiple deformities in both upper limbs. Supposedly all are troubling the patient equally and there is no response to conservative treatment; then what is the recommended preference for surgical intervention?

A. Shoulder > Elbow > Hand

B. Elbow > Shoulder > Hand

C. Hand > Elbow > Shoulder

D. Hand > Shoulder > Elbow

GENU RECURVATUM

- Congenital dislocation of knee
- Ligament Laxity
- Weak Quadriceps
- Physeal injury/ Malunited fractures

CONGENITAL DISLOCATION OF KNEE

Congenital absence of Cruciates

Quadriceps fibrosis

Hypoplastic patella

Rx

Often a part of Neuro-muscular syndromes like
Arthrogryposis Multiplex Congenita

Q. A newborn male has come to you with Congenital dislocation of knee. What else must be searched for having been missed?

A. DDH

B. SCFE

C. Blount’s disease

D. Metatarsus adductus

HOW TO ASSESS LIGAMENT LAXITY?

BEIGHTON SCORE

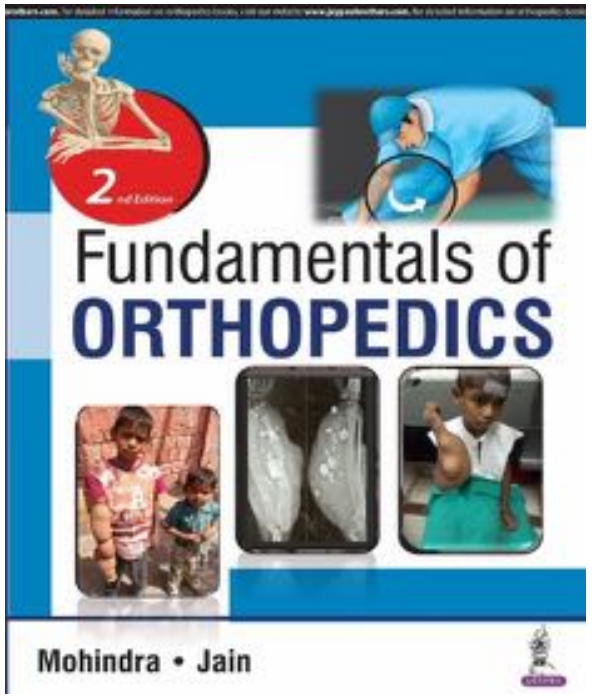
Critical Score for children

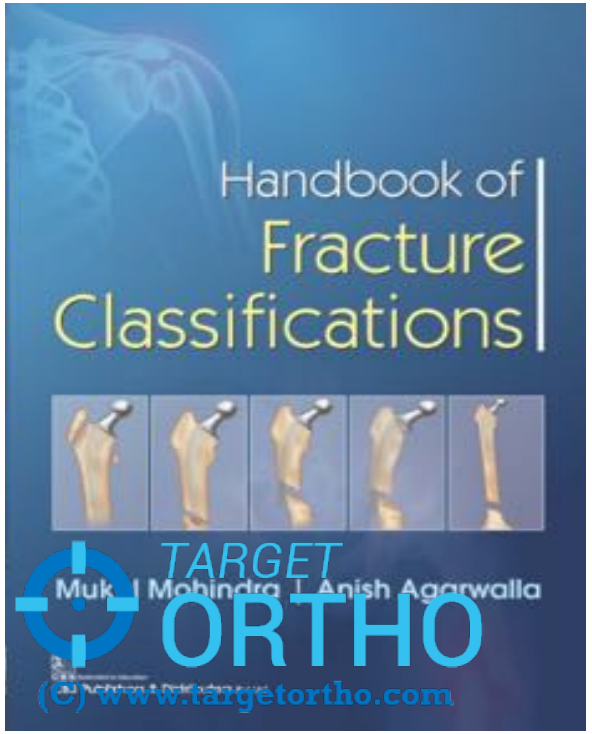
A. >4

B. >5

C. >6

D. >7





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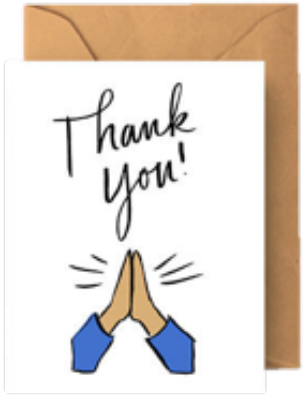

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