

Knee Stress Radiographs in Orthopædic Practice (for dummies?)

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Rationale

- ✓ Diagnostic support
- ✓ Clinical relevance = pre / post op
- ✓ Easy to use in everyday practice
- ✓ Precise tool

Principles

- ✓ AP load
- ✓ Valgus / Varus load

Manual
Positioning
Instrumental

- ✓ Criteriae
 - ✓ Radiographic landmarks
 - ✓ Threshold ++



- ✓ Comparison with normal knee

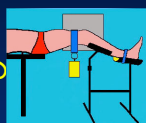
Pathology

- ✓ Ligaments
 - ✓ ACL
 - ✓ PCL
 - ✓ LCL
 - ✓ MCL
 - ✓ Multiligament Injuries
 - ✓ Arthritis
 - ✓ Knee Arthroplasty
- Patient's confidence and compliance

ACL : X-rays lateral views

- ✓ True lateral, 20 ° of flexion
 - ✓ Stress = weight bearing
- ✓ Radiological lachman test
 - ✓ measurement of \neq translations for each compartment
- ✓ Not enough accurate, large SD

Hooper JBJs 1986
Torzilli JBJs 1991
Edung Skel Radiol 1993
Dejour JBJs 1994



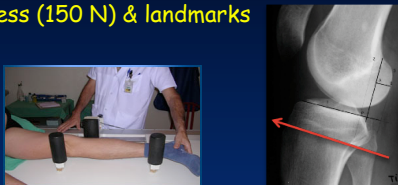
ACL = Measurements

- ✓ Global anterior translation
- ✓ Lateral and medial compartments
- ✓ Internal Rotation

Lerat JBJs 1980, Franklin JBJs 1991
Dejour JBJs 1994, Bercovy 1995


ACL Telos

- ✓Comparative stress X rays Paessler Sport & Med 1986
Staubli Acta Ortho Scand 1992
- ✓6 criteriae of reliability (fluoroscopy)
- ✓ Stress (150 N) & landmarks




ACL Telos

- ✓Precise measurements ++ Seuk Am J Sport Med 2011
- ✓150 N / cut-off 8.5 mm
- ✓Side to side difference ++
- ✓Cut-off 4 mm
- ✓Contraction of the hamstring muscles ?
- ✓(28 % false negatives)



PCL

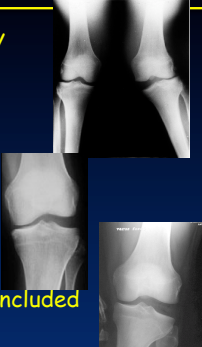
- ✓90° of flexion Schultz & Strobel Am J Sport Med 2005
Staubli JBJS Br 1990
- ✓Positioning : Hamstring contraction
- ✓Telos Post load @ 150N
- ✓6 landmarks
- ✓Δ Cut off 5 mm
- ✓12 mm = PLC included



Hewett & Noyes Am J Sport Med 1997
Seuk Am J Sport Med 2011
Laprade Am J Sport Med 2012

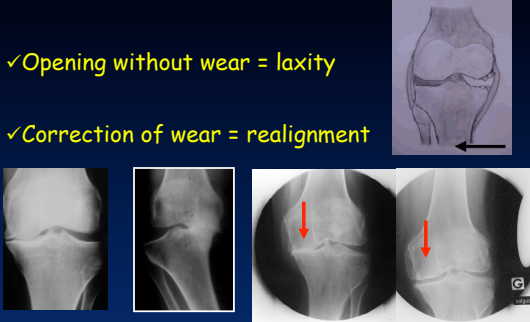
Valgus / Varus / ligament

- ✓Opening without wear = laxity
- ✓Gap compared
- ✓20° of flexion and extension
- ✓3mm = superficial MCL
- ✓9mm = POL included
- ✓2,7 mm for LCL
- ✓4mm = popliteus tendon and PFL included



Valgus / Varus/ arthritis

- ✓Opening without wear = laxity
- ✓Correction of wear = realignment



Valgus / Varus / TKA

- ✓Loosening
- ✓Disbalance

