


## IMAGING

### How I assess a knee pathology

*François Kelberine & Olivier Touchard  
Aix en Provence - France*




### What do we want to check?

Tissues	Questions
<ul style="list-style-type: none"> <li>✓ Bone</li> <li>✓ Cartilage                             <ul style="list-style-type: none"> <li>✓ Arthritis</li> <li>✓ Localized defect</li> </ul> </li> <li>✓ Ligaments</li> <li>✓ Menisci</li> <li>✓ Patello femoral</li> </ul>	<ul style="list-style-type: none"> <li>✓ Is MRI the gold standard?</li> <li>✓ Timing / Trauma</li> <li>✓ Post Surgery?</li> </ul>


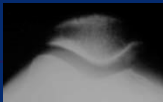

### Tools

- ✓ X rays
- ✓ MRI
- ✓ Sonography
- ✓ CT Scan (+ / - arthro)
- ✓ Bone scan





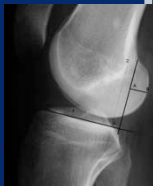
### Radiographs

- ✓ AP
- ✓ Lateral 30° (condyles overlap)
- ✓ Axial view 30°
- ✓ Stress x rays valgus/varus
- ✓ Long stand X-ray
  - ✓ Tibial shape


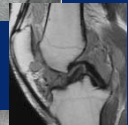
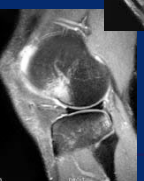
### ACL

- ✓ X rays
  - ✓ Lateral condyle notch
  - ✓ Anterior tibial translation (lateral view WB)
  - ✓ Segond's fracture
- ✓ Telos
  - ✓ Criteriae : 20° flexio, 25 kg ant
  - ✓ Lines


### ACL

- ✓ MRI
  - ✓ Direction, volume
  - ✓ Oedema (T2 weight)
  - ✓ Curved PCL
- ✓ Indirect signs
  - ✓ Lateral bone bruise
  - ✓ Lateral condyle notch
  - ✓ Kissing lesion

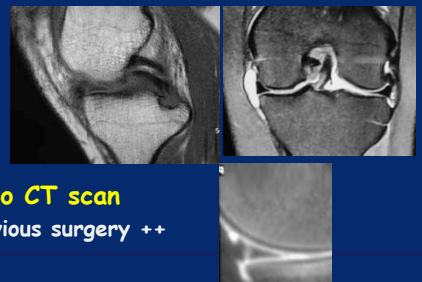
### MCL & LCL

- ✓ X rays
  - ✓ Bone detachment
  - ✓ Stress view (LCL) ++
- ✓ Sonography
- ✓ MRI ++ (T1, fat sat T2)
  - ✓ Bone bruise



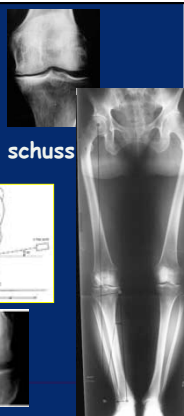
### Menisci

- ✓ X rays = mandatory
- ✓ MRI
- ✓ Arthro CT scan
  - ✓ Previous surgery ++



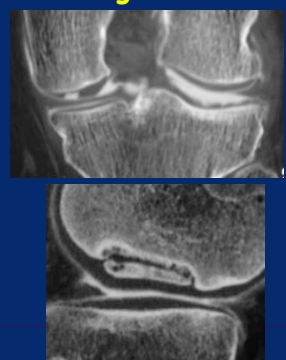
### Bone and Cartilage

- ✓ Radiographs
  - ✓ AP, Lateral 30°, Axial 30°, schuss
  - ✓ Long film alignment
    - ✓ Supine or standing
    - ✓ Uni or bipodal
  - ✓ Valgus & varus stress
- ✓ (MRI)




### Bone and Cartilage

- ✓ Arthro CT scan
  - ✓ Focal defect
  - ✓ Arthritis
- ✓ Bone scan




### Patello femoral diseases

- ✓ X rays
  - ✓ Trochlea dysplasia (cross sign), bump
  - ✓ Length of patellar tendon
  - ✓ Arthritis
- ✓ CT scan (arthro)
  - ✓ TTTG
  - ✓ Tilt
  - ✓ Translation



### Is MRI the gold standard?

- ✓ No!
- ✓ Very usefull
- ✓ False positives worse than false negatives !



### Timing / knee sprain

- ✓MRI @Trauma / main risk = to over estimate the lesions: some will heal spontaneously
- ✓Delayed prescription
- ✓Except complications



### Take home message

- ✓Standard X rays always
- ✓DJD : X rays
- ✓Ligament and menisci MRI when clinical assessment not sure : MRI
- ✓Previous surgery, chondral local defect, PF: arthro CT scan

Bone scan