Planning before primary TKA

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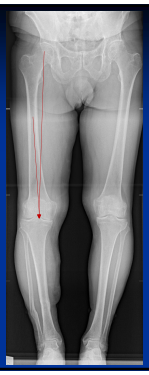
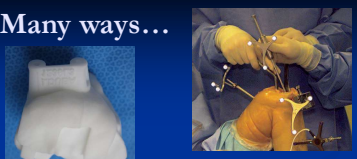


Many ways…



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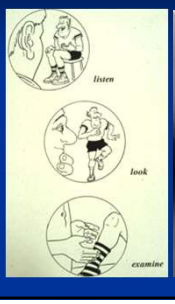
What is important?

- Listen
- Look
- Examine



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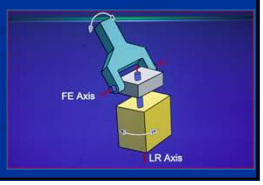
Goal = patient's satisfaction

- Obtain a pain free, stable and mobile knee
- Good function is more important than perfect alignment
- Mechanical, anatomical or kinematic alignement is of little importance
- Respect the axis of flexion of the knee



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Planning means anticipate

- Optimize the patient before the intervention
- Be prepared for particular problems during the surgery
- Obtain the necessary equipment
- Foresee the aftercare

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First office visit is essential

- Patient's complaints: pain, instability, restricted ROM, poor function…
- Patient's expectations: explain to the patient what is reasonable to expect
- Patient's wife or husband: family situation, better understanding and memorizing, more information about patient'symptoms and history…

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First office visit is essential

- **Listen** to the patient:
  - Previous medical history: infection, inflammatory disease, gout, diabetes, cancer, coronary disease, renal insufficiency, smoking, bleeding or thrombo-embolic events, angiopathy, algodystrophy, neurological disease…
  - Medications: anticoagulants, metformine, insulin, immunosuppressive agents…
  - Previous surgery or trauma: on the knee, hip, foot, spine or controlateral limb; vascular surgery or stents…
  - Mental and social status: fibromyalgia, chronic fatigue, depression, job loss, litigation, family situation…

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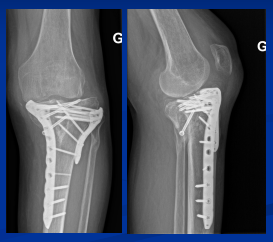
Physical examination

- Is it a routine case or will we face special problems?
- Will we need specific implants or instruments?



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Physical examination

- Look at the patient:
  - Walking from the waiting room to the examination room: habitus, limp, deformity, instability, thrust, rotational abnormality, neurological pathology, dyspnea…
  - Patient should be undressed: pants, shoes and socks off
  - Standing: alignment, flexion contracture, swelling, feet, varicose veins, trophic disorders, old scars, skin quality, fatty tissue…
  - Walking in the office: stability, glutei insufficiency, ankle instability…

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Physical examination

- Inspection and palpation:
  - Sitting: palpate the joint line, assess M-L and A-P stability, examine the kneecap (painful or unstable patella, patella baja…) and extensor mechanism
  - Supine: ROM, stability, collateral ligaments decompensation (could require constrained implants), pulses, previous scars (take the more lateral, ask a plastic surgeon, make a sham incision…)

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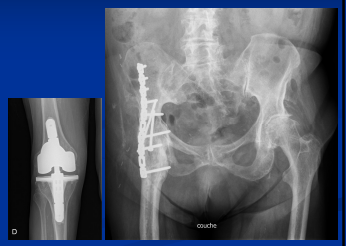
Physical examination

- Inspection and palpation:
  - Check the contralateral limb
  - Do not forget the hip, the foot and the ankle
  - Look for rotational abnormalities



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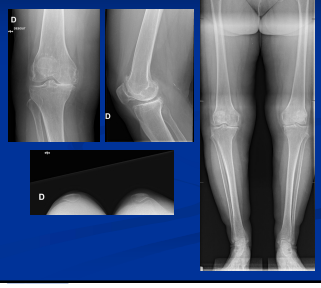
Radiographic Examination

- Standing X-rays
- True AP and lateral view + schuss
- Skyline view (Merchant view)
- Long-leg standing A-P X-ray
- Stress X-rays?



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Long-leg standing A-P X-ray

- Strict A-P view of the knee
- If needed, mesure on the opposite femur
- Detect the difficult cases:
  - Curved femur
  - Malunion
  - Hardware…

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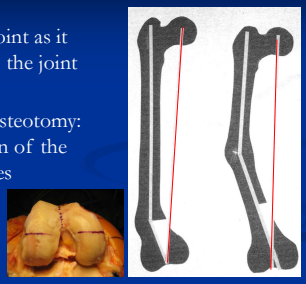
Femoral deformity

- Worse if close to the knee joint as it causes a greater obliquity of the joint line
- Could require a corrective osteotomy: goal=keep the axe of flexion of the knee through the epicondyles



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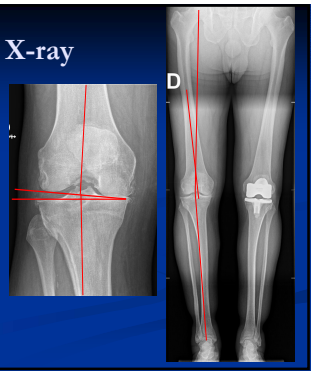
Long-leg standing A-P X-ray

- Hip-knee-ankle angle
- Mechanical axis and anticipated course of intramedullary guide (femoral axis)
- Lateral distal femoral angle
- Medial proximal tibial angle
- Joint line convergence angle



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Long-leg standing A-P X-ray

- Detect abnormal knees (hypoplastic lateral condyle, oblique joint line…)
- Anticipate the thickness of the bony cuts
- Figure out the angle between the mechanical axis of the femur and the epicondylar axis (ideal knee = perpendicular)

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A-P view

- Bone defects, osteopenia
- Wedge, augments?
- Stem?
- Bone graft?

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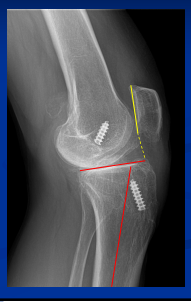
Lateral view

- Tibial slope (anatomical axis of the tibia, tangent to the tibial plateau)
- Posterior osteophytes
- Trochlea depth
- Patellar height, thickness, subluxation



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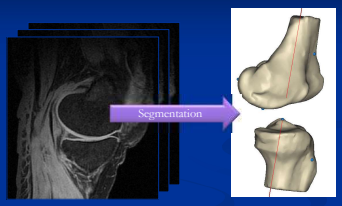
Modern techniques

- Same principles but better tools
- Improved reconstruction of axes, sizes, torsion
- Specific guides, navigation, robot…



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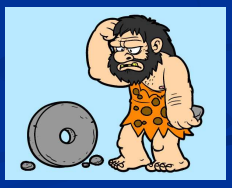
Back to Basics

- Better tools should not make you skip the steps of a careful(even if old fashioned) preoperative planning!



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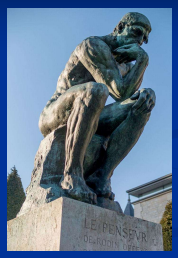
Time for reflection



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