

Wat is “hot and new”.

- Link tussen toekomst en verleden.
- Welke nieuwigheden.
- Direct to consumer advertising.

Geschiedenis van de TKP.

- Jaren '50 : twee principes :
 - **Scharnierprothese.**
 - Vervangingsartroplastie :
 - Campbell : femorale oppervlakte
 - Mc Intosh : tibiale oppervlakte.
- Jaren '80 : eerste total condylars.

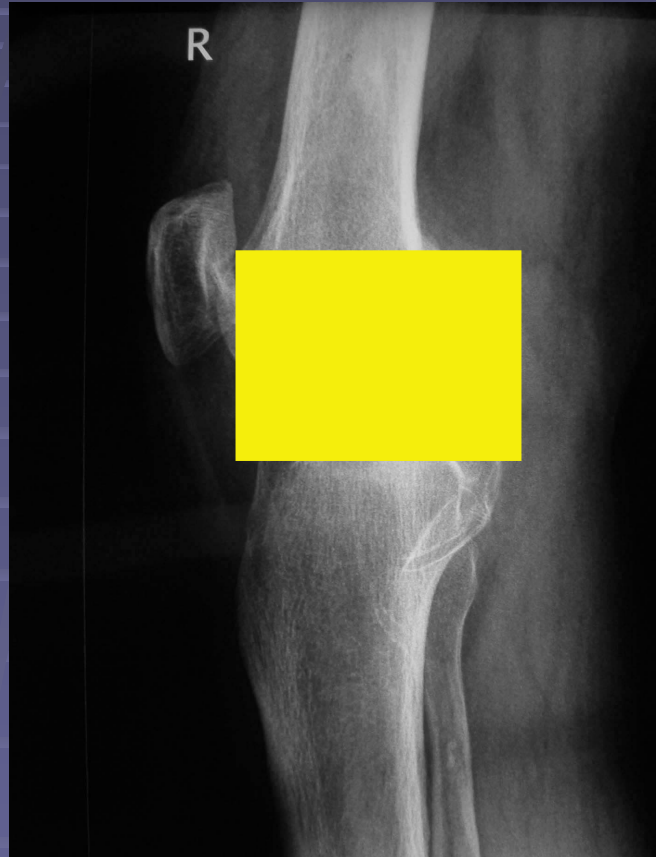
Dadurian hinge.



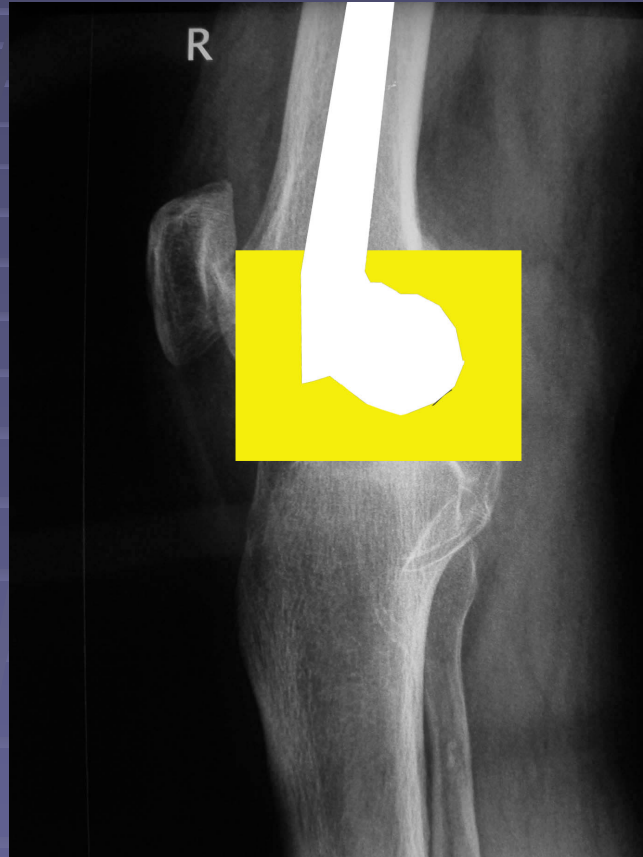
Scharnierprothese.



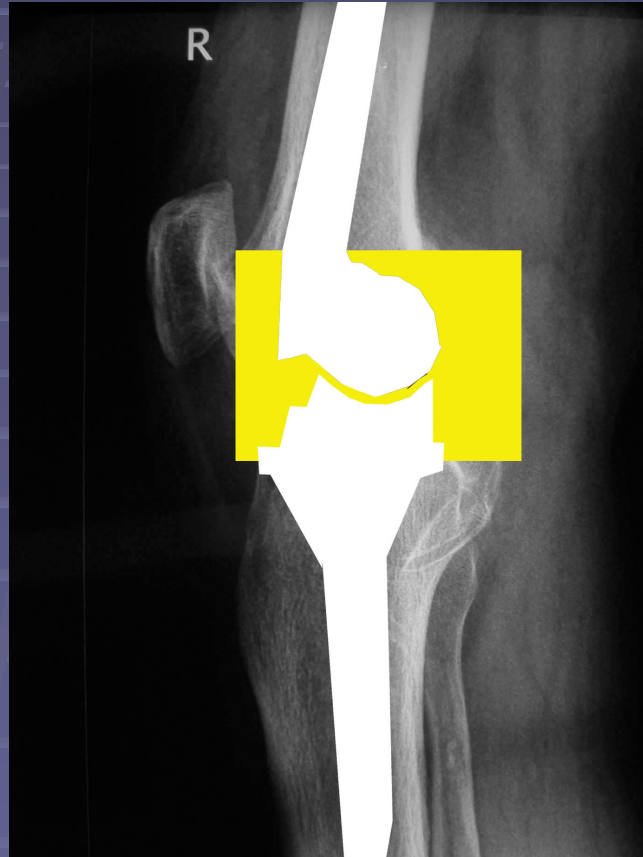
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 - Scharnierprothese.
 - Vervangingsartroplastie :
 - Campbell : femorale oppervlakte
 - Mc Intosh : tibiale oppervlakte.
 - Jaren '70 : geomedic femorotibiale prothese
- Jaren '80 :
 - **eerste total condylars.**



Lessen uit het verleden.

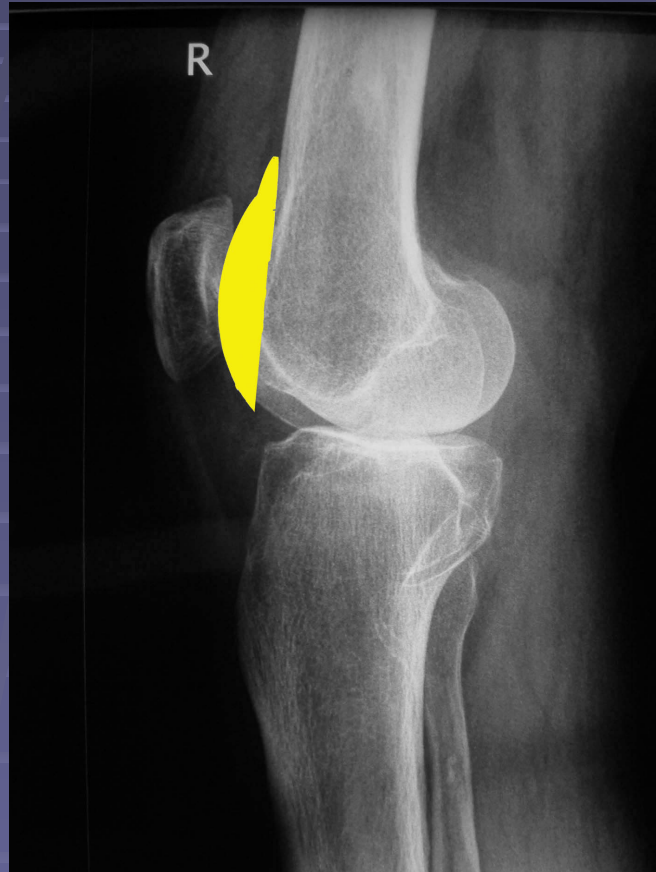
- Constraint.
- Gehele oppervlakte aangetast.
- Ligamenten.



Total condylars.



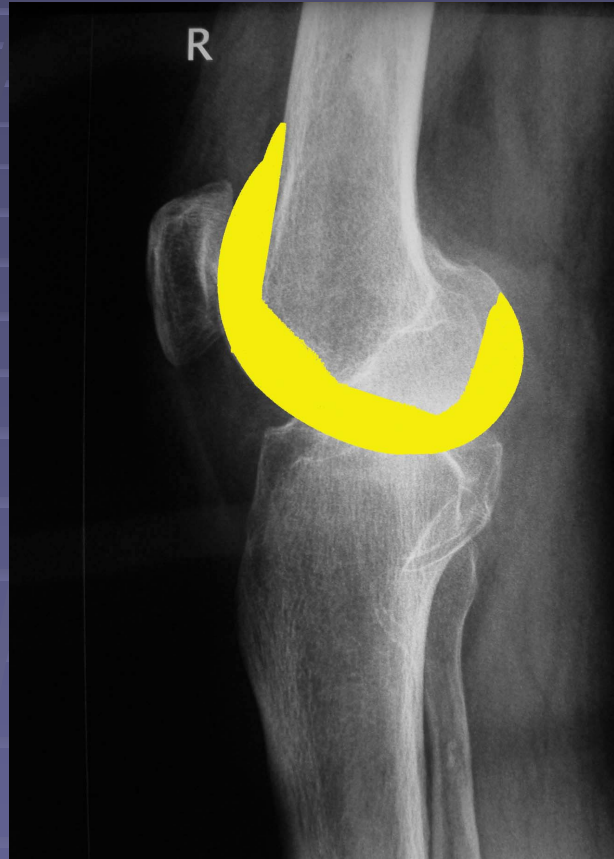
Moderne knieprothese.



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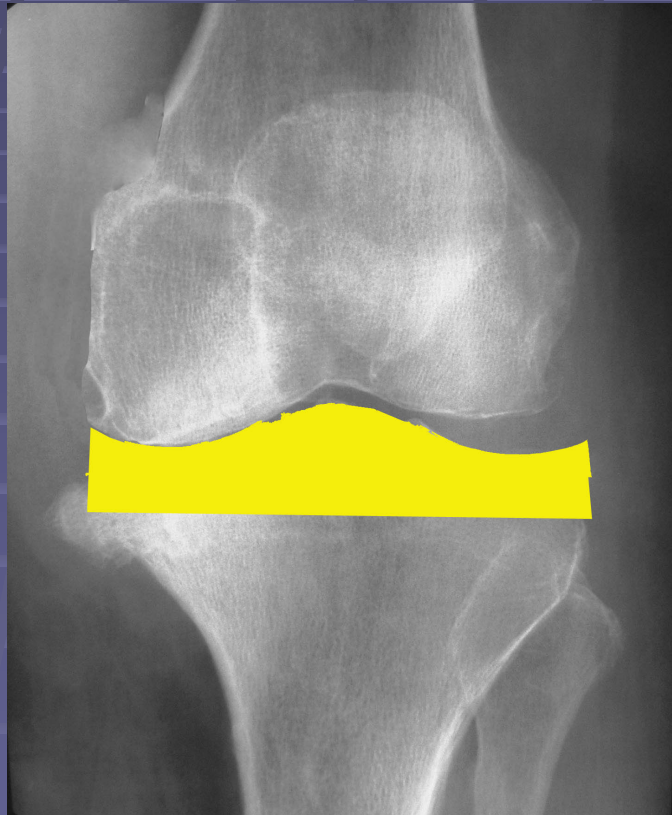
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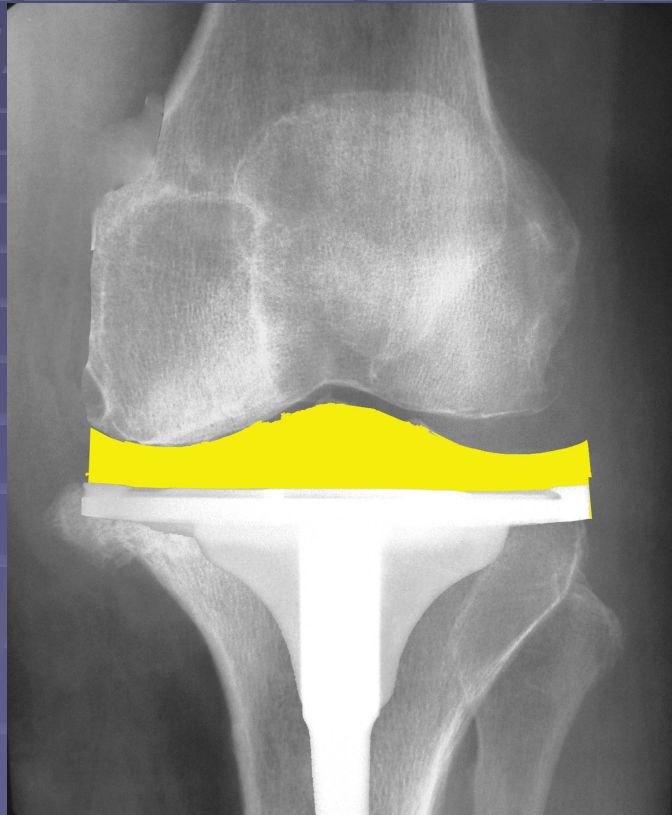
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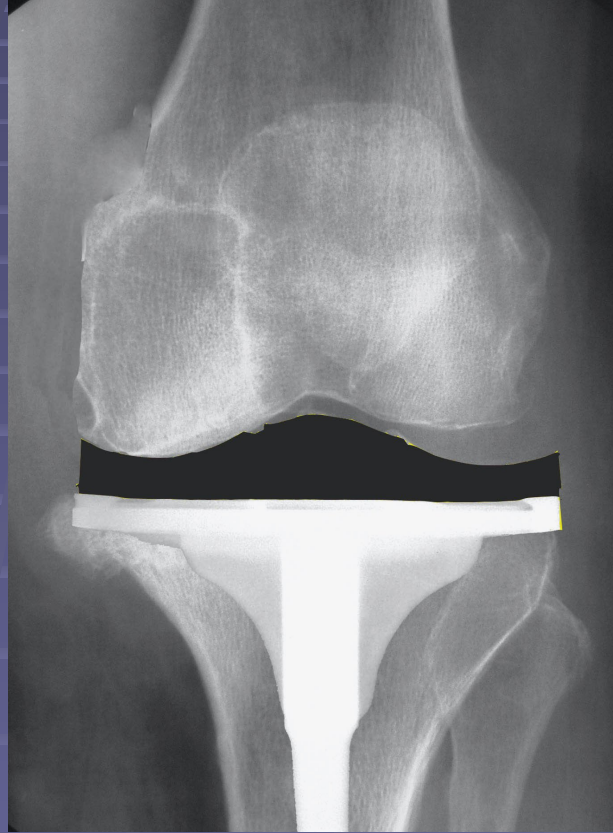
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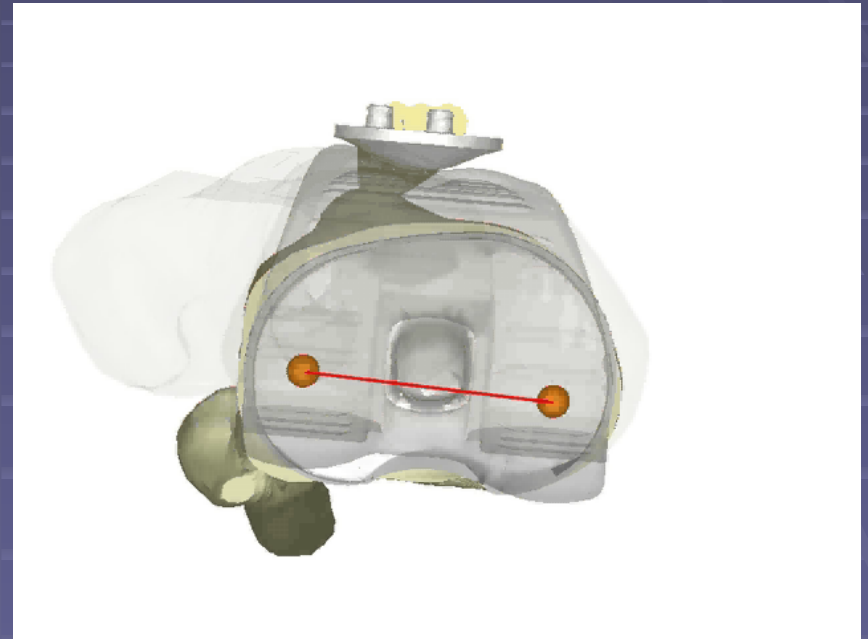


Moderne knieprothese.



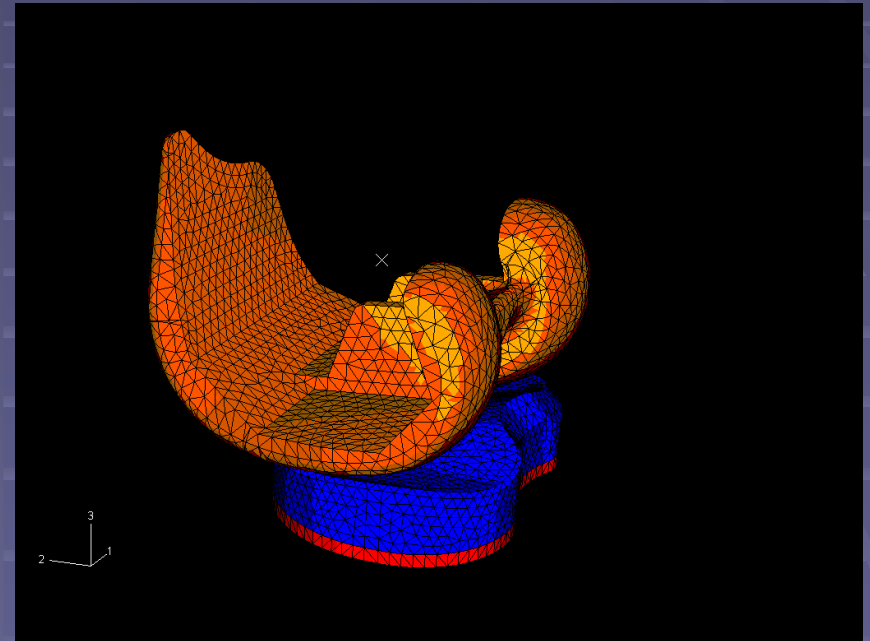
Moderne knieprothese.

- '70 -80 : resurfacing wordt "golden standard".
- Verschillende generaties resurfacing ontwikkelen.
- De evolutie :
 - Kennis biomechanica.
 - Chirurgische techniek.



3^{de} generatie resurfacing TKP.

- Reproduceerbare resultaten.
 - > 95 % tevreden
 - 95 – 98 % 10 jaars overleving.
 - Gemiddelde ROM > 115 – 120 °
- Longterm resultaten bekend.



Nieuwigheden bij TKP.

- Vele spelers (firma's)
- Harde aggressieve markt.
- Iedereen steeds op zoek naar nieuwigheden :
 - Nieuwigheden komen.
 - Vele nieuwigheden verdwijnen ook weer mee.
- Direct to consumer advertising :
 - Enige weg voor niet evidence based zaken.
 - In de kaart van de media : politiek en geneeskunde zijn hot.

Iemand moet zijn kop uitsteken.

- Zonder experimentele fase geen vooruitgang mogelijk.
- Tijd maakt uit wat revolutionair was.

Nieuwigheden bij TKP.

- Gender knee.
- Minimal invasive surgery.
- Navigatie en robotica.
- Cruciate preserving total knee cruciate substituting total knee :Sportknie.



Hypothese gender knee.

- Anatomie verschillend voor man en vrouw.
- Daarom nood aan aangepaste vrouwenprothese.

Gender knee.

- From the clothes we wear to our taste in movies, women are different from men. In fact, research shows that we are different all the way down to our knees. Yet, up to this point, all knee replacement implants have been designed based on an average size of both women's *and* men's knees combined.

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Wat is er anders aan de gender knee.

- Dunner profiel anterieur.
- Beter gecontourde prothese.
- Meer natuurlijke beweging.

Critical Design Features in Knees Designed for Women					
	<i>Zimmer Gender Solutions Knee</i>	Biomet Vanguard Knee	DePuy PFC Sigma Knee	Stryker Triathlon Knee	Smith & Nephew Genesis II Knee
Slender shape in the front of the knee replacement	✓				
Proportional contouring between front-to-back and side-to-side	✓				
Patella tracking designed to replicate women's distinct Q-angle	✓				

Basis vragen.

- Hogere failure rate bij TKP voor vrouwen?
- Verhoogde succesrate gender specific TKP bij vrouwen?

Gender-Specific Knee Replacements: A Technology Overview

J Am Acad Orthop Surg, Vol 16, No 2, February 2008, 63-67.

Gender knee.

- Een hype.
- Direct to consumer advertising.

Minimal invasive surgery.

- Chirurgie door kleinere incisies.
- Minder weke delen schade.

Minimal invasive surgery.

- Over the past 25 years, minimally invasive surgery (MIS) has revolutionized many fields of medicine. Its key characteristic is that it uses specialized techniques and instrumentation that enable the surgeon to perform major surgery without a large incision.
- **MIS Total Knee Replacement (TKR)**, unlike conventional TKR requiring a large incision (8 to 12 inches) and significant disruption of the muscles and tendons, is performed through a 3- to 4-inch incision and may also reduce the amount of soft tissue (muscles and tendons, etc.) disrupted during surgery.

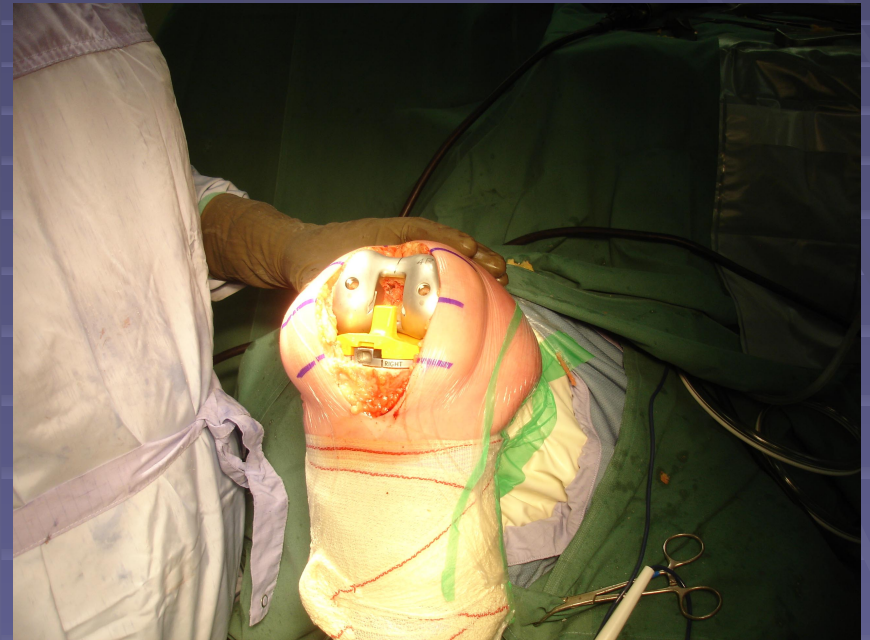
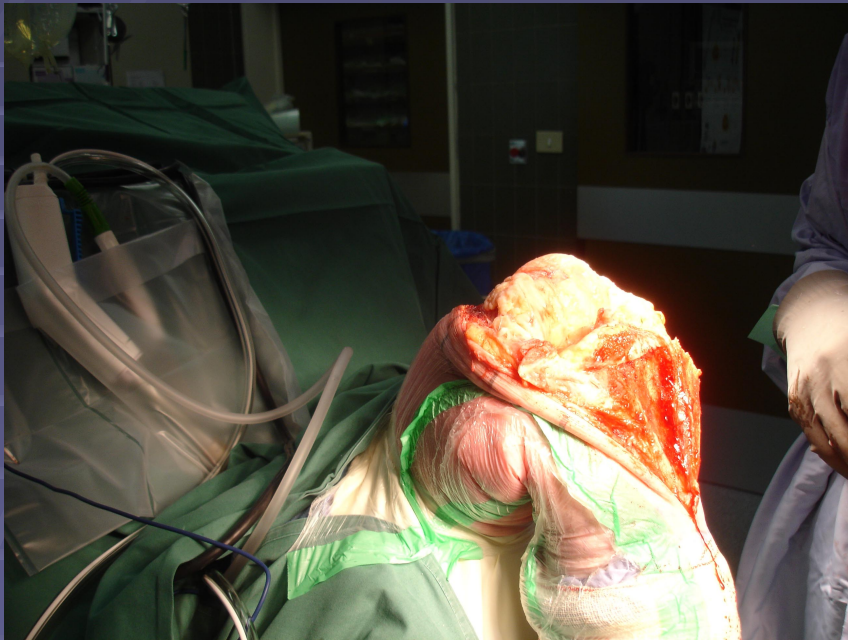
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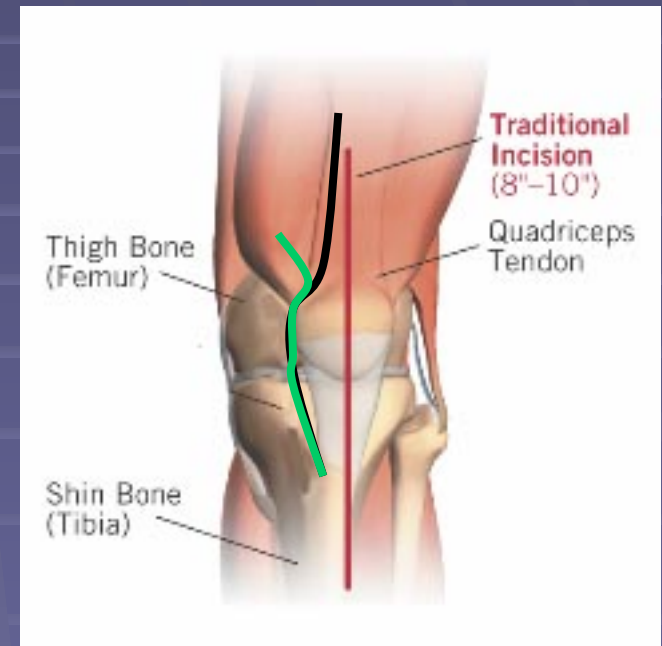
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Maximal versus minimal invasive.



De toegangsweg voor een TKP.

- Klassieke toegangsweg : peripatellair of subvastus.
- MIS :
 - Mini midvastus.
 - Kleiner huidincisie.
 - Mobile window.
 - Technisch iets moeilijker.
 - Gelijkaardige resultaten.
 - Learning curve.



Wat blijft er overeind van MIS?

- ≠ over grootte incisie.
- ≠ betere overleving.
- ≠ Beter alignement.
- = respect voor de weke delen.
- = Geeft zelfde resultaten indien correct uitgevoerd.

Navigatie en robotica.

- Electronische snufjes zijn hot.
- Wie rijdt nog zonder GPS?
- Genavigeerde knie : beter.
- Een navigatiegestuurde robot : perfectie.

Wat zegt het internet.

- ... , standard knee replacement surgery has its limitations—the laws of physics being chief among them. The surgeon's task is daunting.
- If, during the procedure, a surgeon shaves off bone at an angle just five degrees from perfection, the uneven wear and tear during normal physical activity literally will shave years off the life expectancy of the device.

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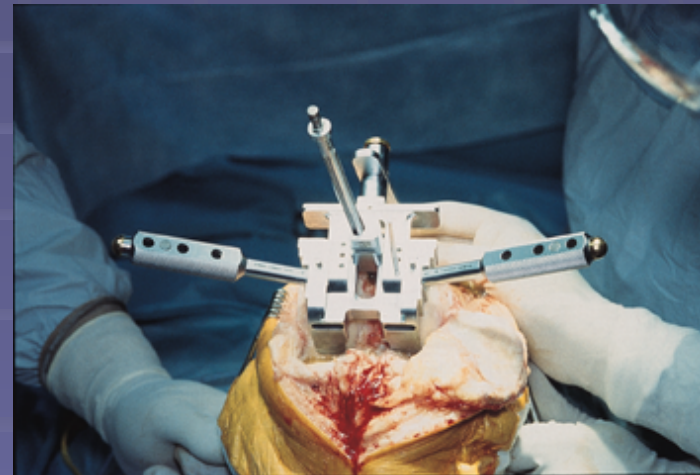
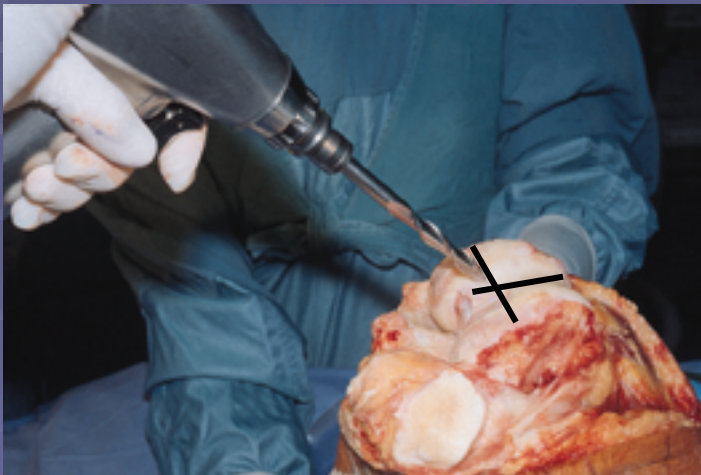
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The new solution

- **Computer-assisted surgery** addresses this issue of alignment with an advanced convergence of multiple medical technologies. Using infrared cameras, fluoroscopic images and simple tracking devices, Smith & Nephew's computer-assisted knee replacement procedure achieves alignment to **within one degree and one millimeter of total accuracy.**

CAOS of Chaos?

- Cutting blocks of robot moeten nog altijd gericht worden op anatomisch te bepalen richtpunten.
- Deze moeten nog steeds manueel door de chirurg worden ingegeven.



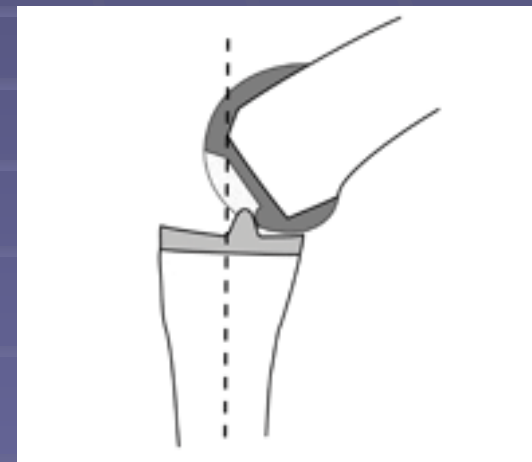
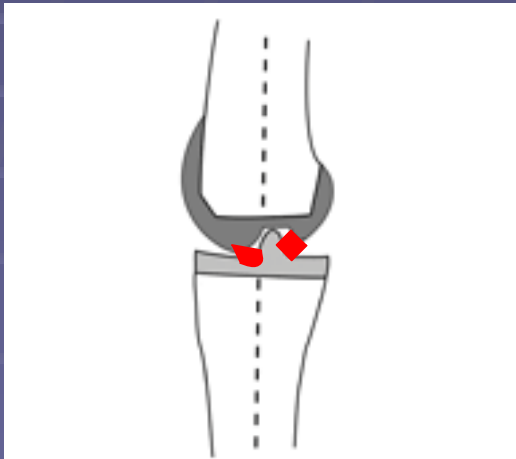
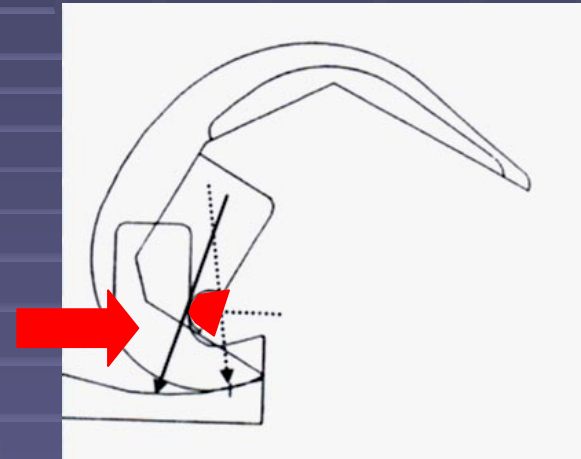
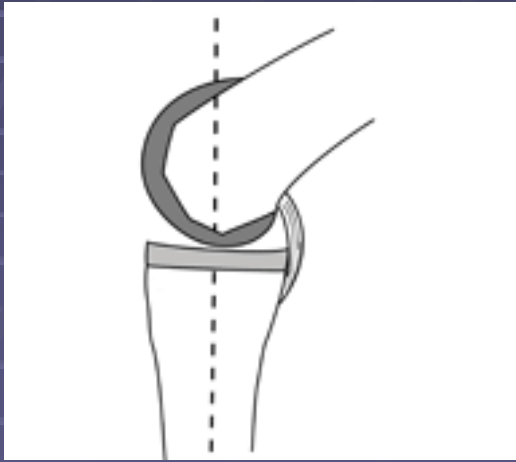
Navigatie.

- Is here to stay.
- Onmisbaar in complexe situaties
- Quantificeerbare informatie – nieuwe inzichten in de knie kinematica.
- Beginstadium : wat geeft de toekomst?

De sportknie.

- Variant van de Genesis knie die in Lier sedert 10 jaar gebruikt wordt.
- Principe van guided motion.
- Terug naar het verleden : terug meer constrained (loosening?)

Terug meer constraint.



Geomedic.



Dus wat is er nu van aan.

- De nieuwe prothese is motion guided.
- Vroegtijdige resultaten = derde generatie.
- Het concept is mooi gevonden.
- Verdient zeker onze aandacht.
- Wordt ook door ons op indicatie gebruikt.

Oxinium.

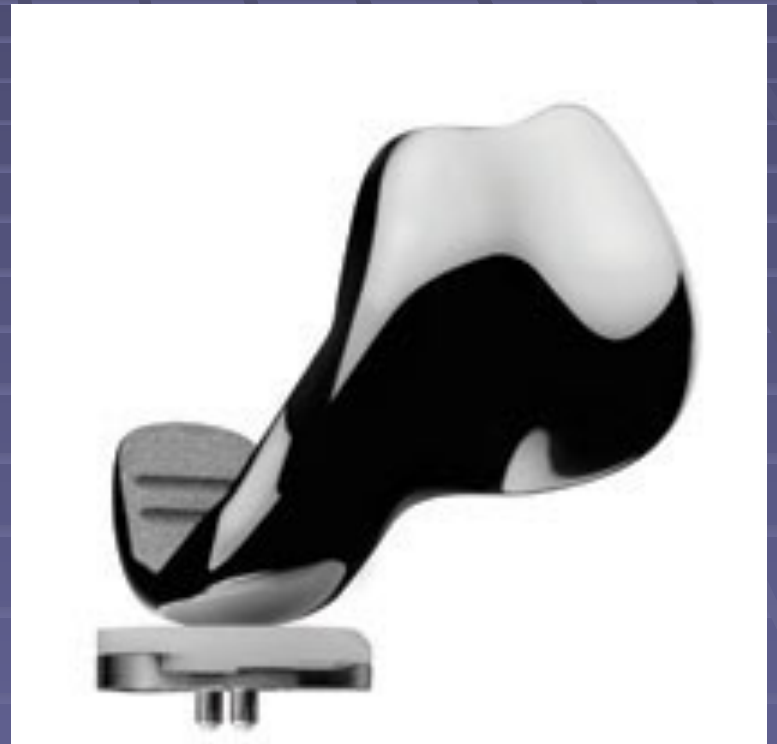
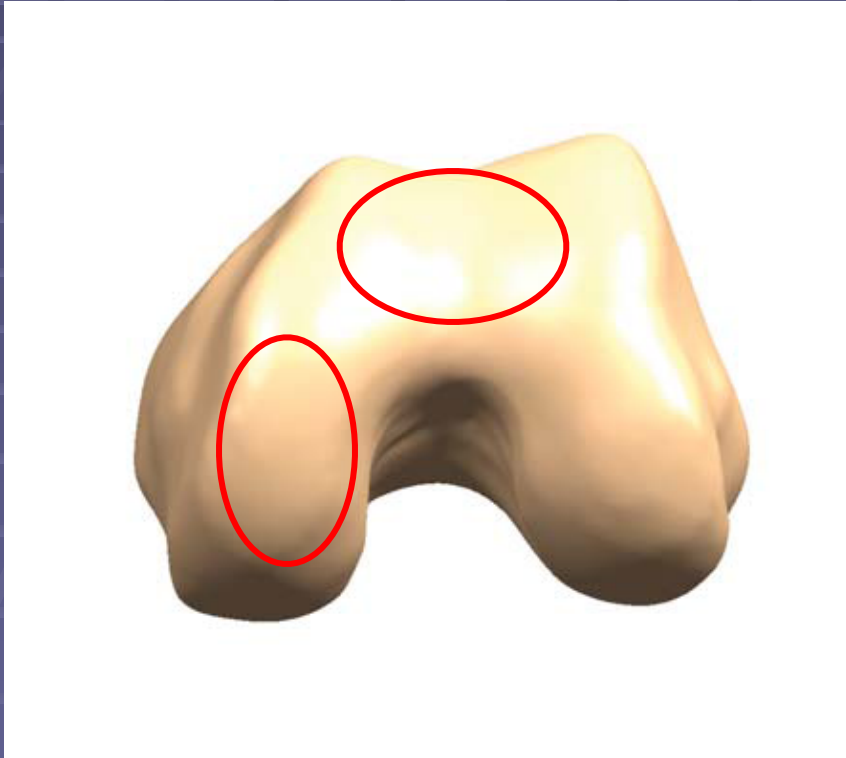
- Geoxideerd zirconium.
 - Harder.
 - Krasresistenter.
 - Beter dan CoCr in biomechanische studies.
 - Eerste 10 j resultaten met genesis oxinium goed.
 - CoCr al 95 % overleving op 10 j : beter is moeilijk statistisch te bewijzen.



Andere nieuwigheden.

- Meer en meer reproduceren normale knie.
- Sparen kruisbanden in:
 - 1/2 knie : unicondylaire
 - 2/3 knie.
 - Totale knie.

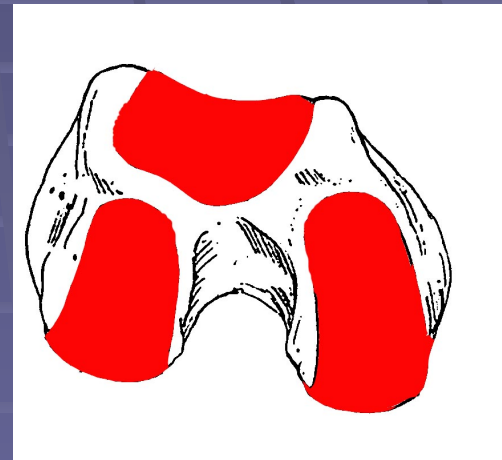
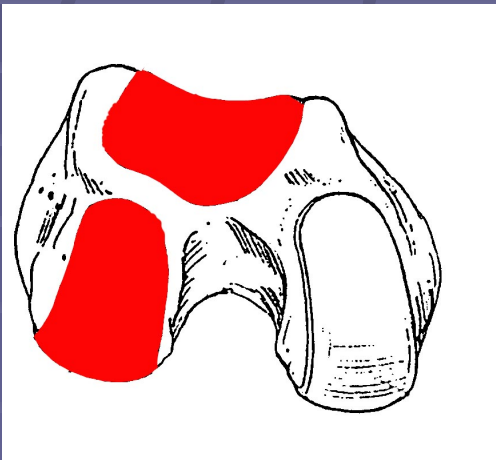
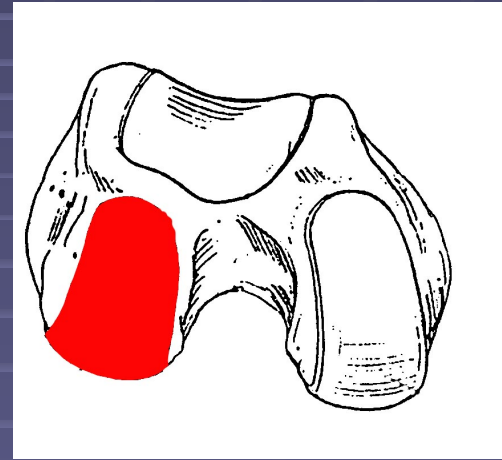
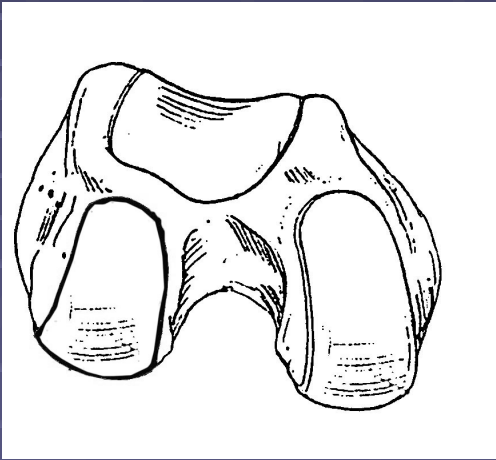
Bicompartamental replacement.



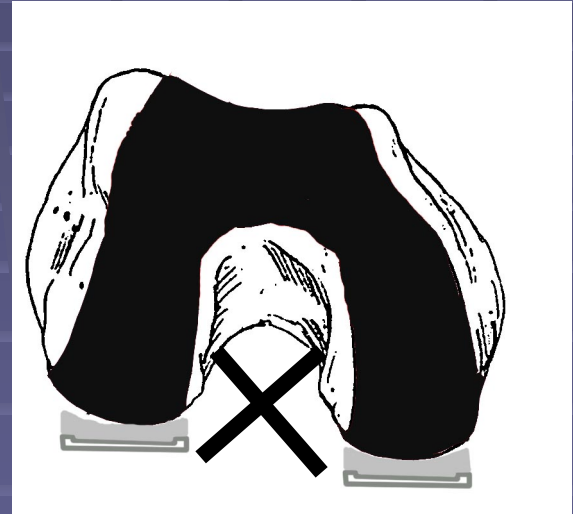
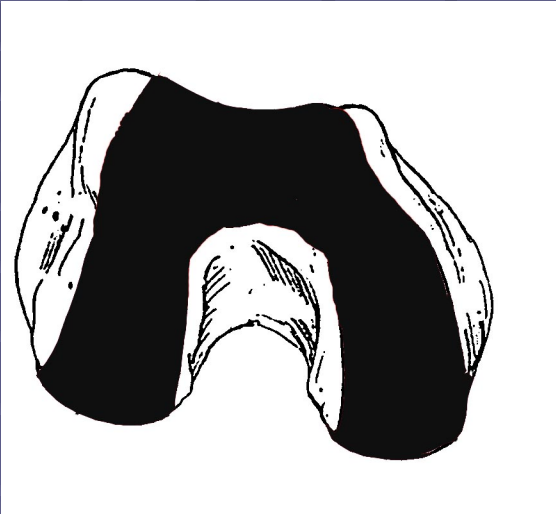
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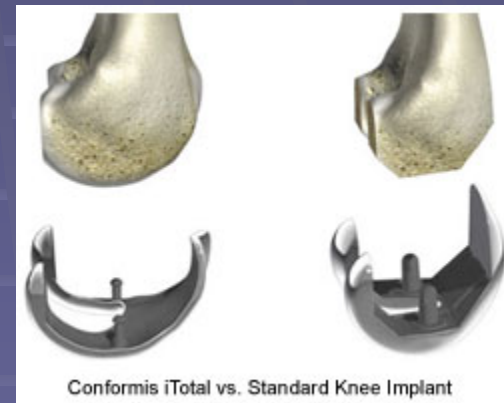
Jerry Engh.



Jerry Engh



Conformis patient specific implants.



Joint care.

- Joint care en klinisch pad.
- Gebaseerd op groepsgeest.
- Uniformisatie een voordeel?
 - Als het een dag tegen zit.
 - Sociale situatie.

Joined care principe ontstond.

- Informatie op maat.
- Uitgebreide info-map.
 - Gestructureerde preop's.
 - Wat te verwachten ZH / thuis.
 - Info andere zorgverleners.
- Coach.

Prothese Unit.

- Orthopedie naar derde verdieping.
- Prothese-revalidatiezaal grenst aan de afdeling.
 - Klassieke fysiozaal.
 - Deel voor zelftherapie in huislijke setting.
 - Patiënten komen tussendoor oefenen.
 - Krijgen het nodige vertrouwen.
 - Kunnen er vertoeven met bezoek.

Revalidatie – concept.

- Ieder op eigen tempo.
- Samen dingen doen mogelijk, niet verplicht.
- Verschillende oefensessies :
 - Begeleid.
 - Vrij.

Doel joint care afdeling.

- Vertrouwen geven.
- Zo veel mogelijk zelfredzaam maken.
- Betrekken familie en omgeving.

Take home messages.

- De laatste 30 jaar is er veel bijgeleerd :
 - Operatie technisch.
 - Materialen.
 - Prothese design.
- 95% goede resultaten op 10 j. met huidige totale knieën.
- Prothese kan zich slechts statistisch bewijzen indien zij beter is na 10 – 15 jaar.

Take home messages.

- Sterk concurrentiële business.
- Jonge patiënten kiezen best voor winners.
- Derde generatie prothese nog niet overtroffen door nieuwkomers.
- Zonder experimentele geneeskunde geen vooruitgang.
- Onze taak patient wegwijs te maken in informatiestroom.

Wat is “hot and new”.

