

Vreden's Readings-Conference

St.Petersburg, September 28-29th 2012



PLANNING

There is never time to do it right, but always time to do it over.

**Pre-Operative
Planning- more than
just templating**

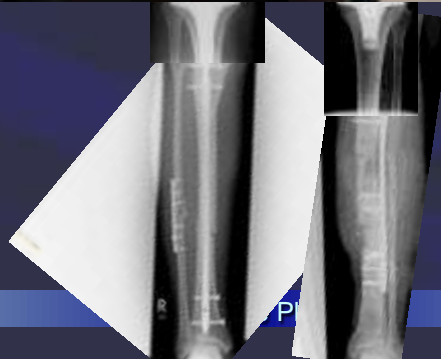
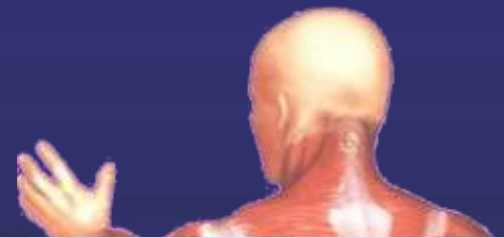
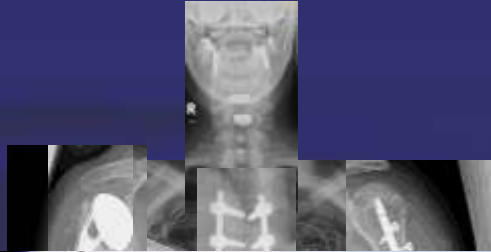
Joint replacement



maxilla joint
shoulder
elbow
radial head
wrist
finger joints
vertebra disc
hip
knee
ance ...



...since ~50 years:



Introduction

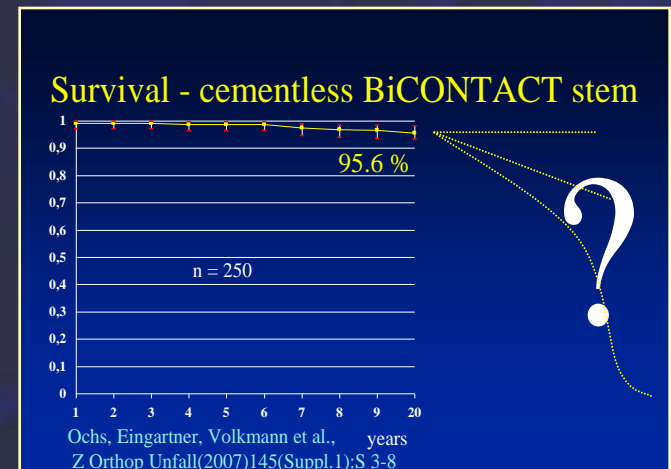
- Why do we do preoperative planning?
- What do we do in preoperative planning ?
- How do we do preoperative planning?



Pre-Operative Planning

Why do we need preoperative planning ?

- **To have an optimal result**
 - Painfree and satisfied Patient
 - Long term stability



Pre-Operative Planning

Why do we need preoperative planning ?

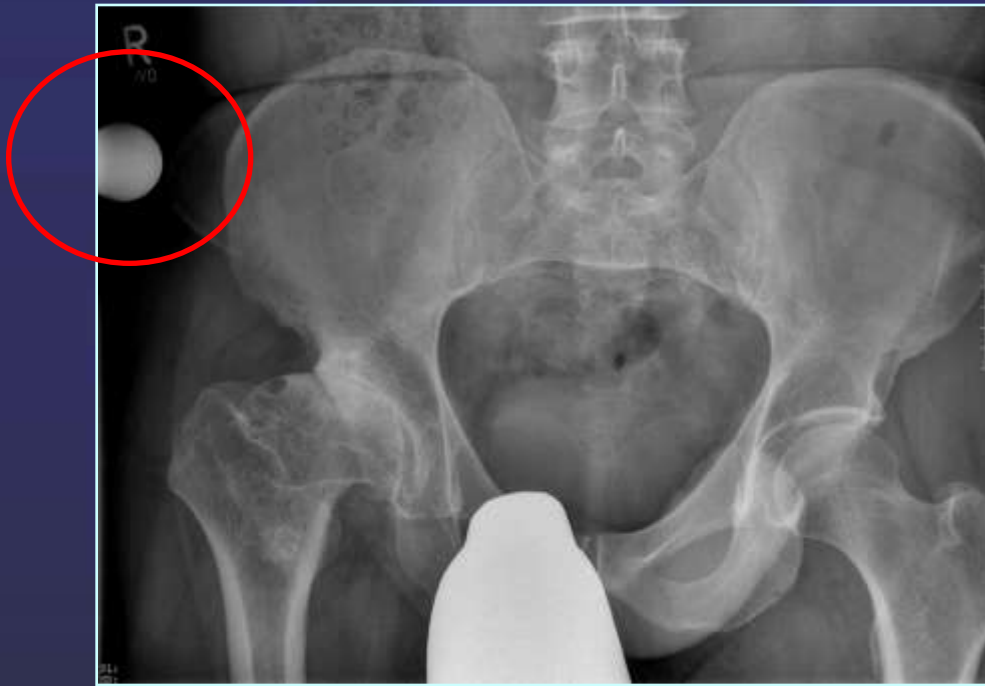
- **To have an optimal result**
- **To prevent complications**
 - Examination
 - X-Ray standard



Examination



X-Ray Standard



with reference- body...

...a must !

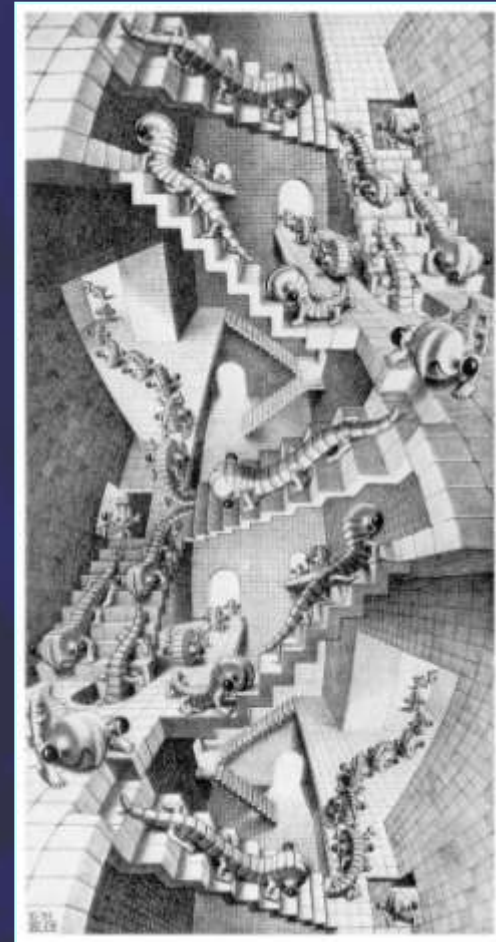
X-Ray Standard



Pre-Operative Planning

Why do we need preoperative planning ?

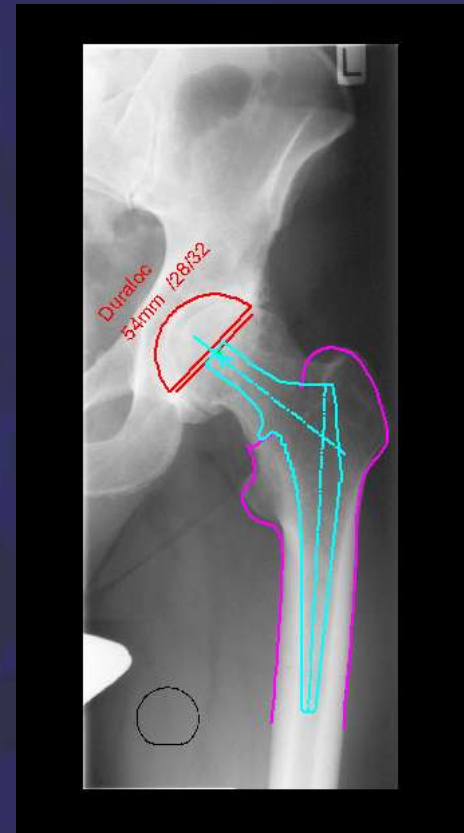
- **To have an optimal result**
- **To prevent complications**
- **To do the operation procedure before real surgery: step by step**



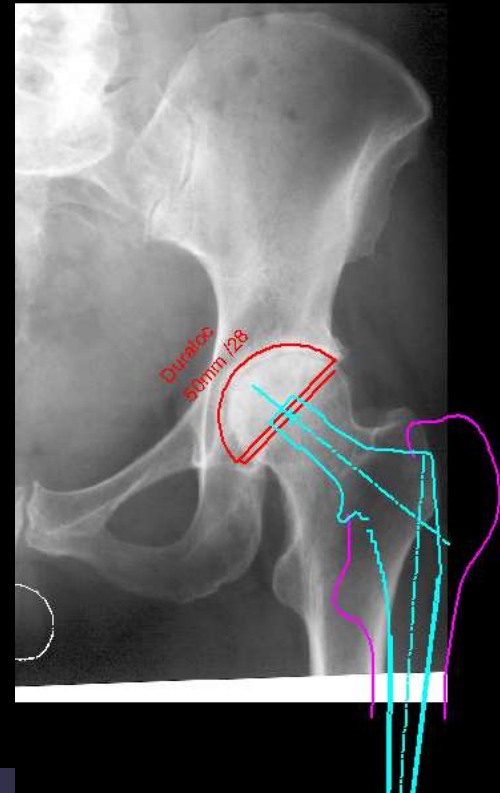
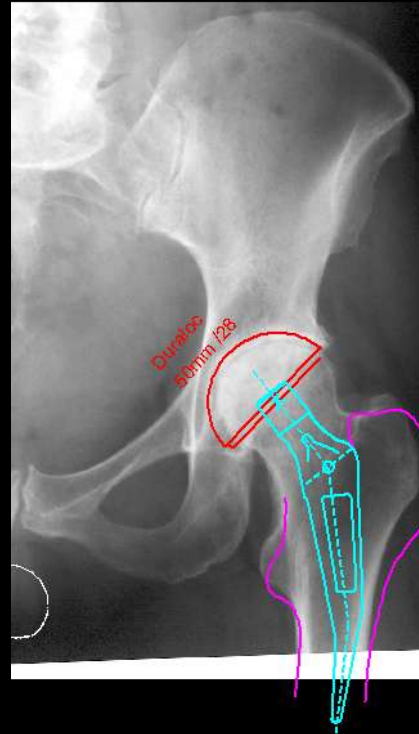
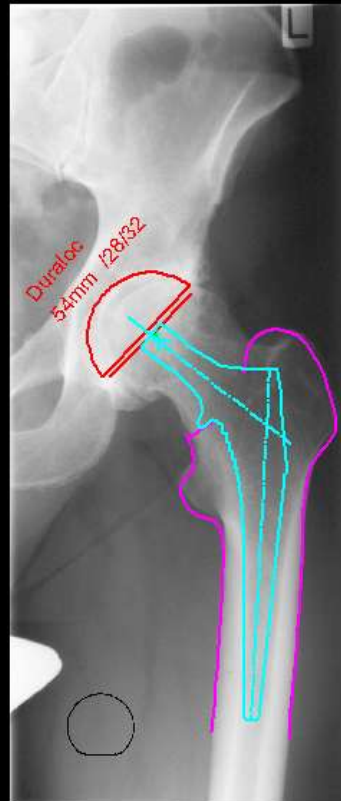
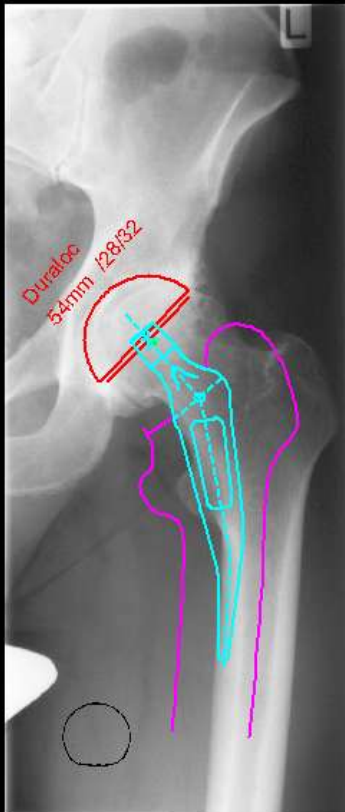
Pre-Operative Planning

Why do we need preoperative planning ?

- **To have an optimal result**
- **To prevent complications**
- **To do the operation procedure before real surgery- step by step**
- **To select the optimal implant**



There are many options to get a goal!



...only what finally
remains, is
essential!

Steve Jobs

Revisionsgrund	Implantat	Revisionsgrund in % aller Revisionen	Häufigkeit nach Primäroperation in %	Absolute Häufigkeit: Risiko nach Primäroperation 1/x Patienten
aseptische Lockerung	Hüfte	55,24	7,94	13
aseptische Lockerung	Knie	29,83	2,44	41
septische Lockerung	Hüfte	7,45	1,07	93
septische Lockerung	Knie	14,93	1,63	61
Implantatbruch	Hüfte	2,48	0,31	323
Implantatbruch	Knie	4,73	0,43	234

Quelle: Weltweite Registerdaten nach Fallzahlen und Nachuntersuchungszeiten adaptiert

Tab. 1: Wahrscheinlichkeit für Revisionsoperationen im Laufe des Lebens nach Primärendoprothetik

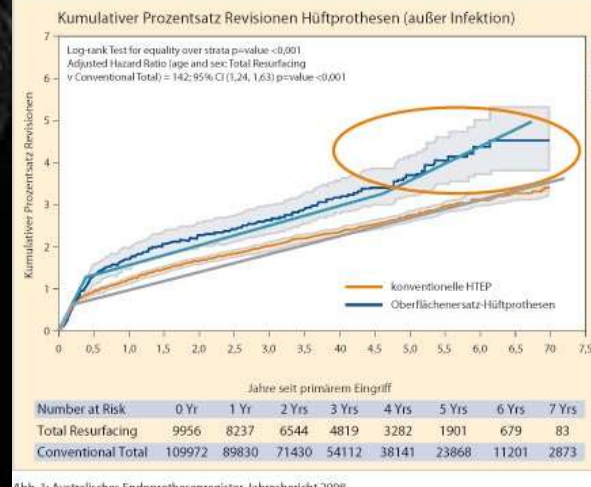


Abb. 1: Australisches Endoprothesenregister, Jahresbericht 2008



Special Instruments ?



Pre-Operative Planning

Why do we need preoperative planning ?

- **To have an optimal result**
- **To prevent complications**
- **To do the operation procedure before real surgery- step by step**
- **To select the optimal implant**
- **To prevent malposition**



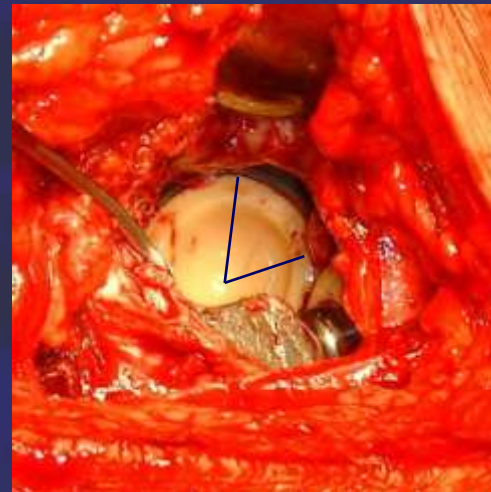
Introduction

Why do we need preoperativ planning ?

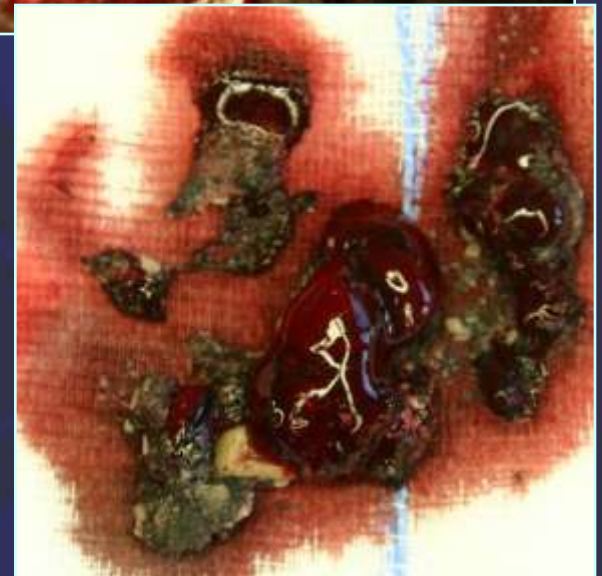
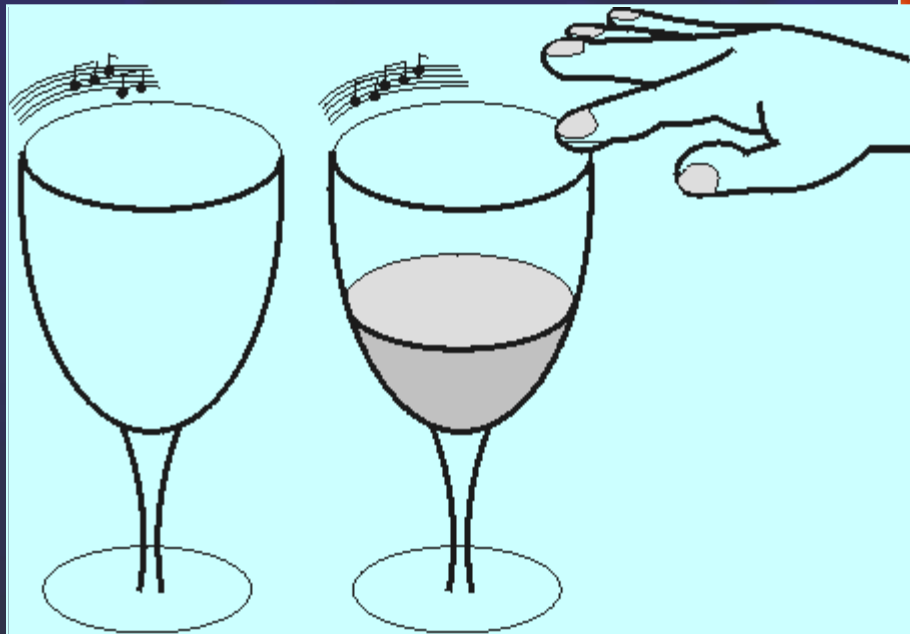
Optimal positioning of the implant



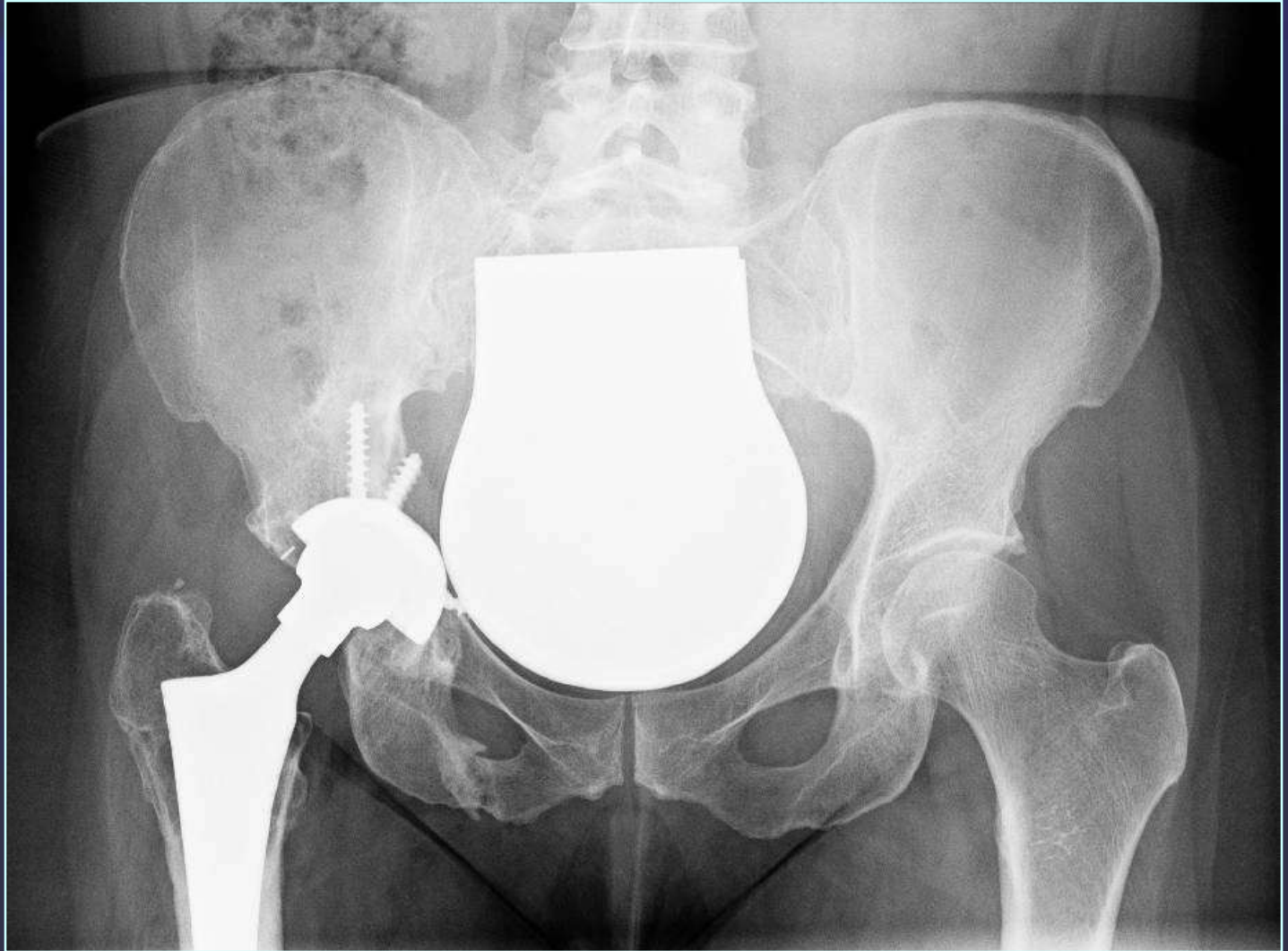
(Sub)Optimal positioning of the implant



(Sub)Optimal positioning of the implant



(Sub)Optimal positioning of the implant



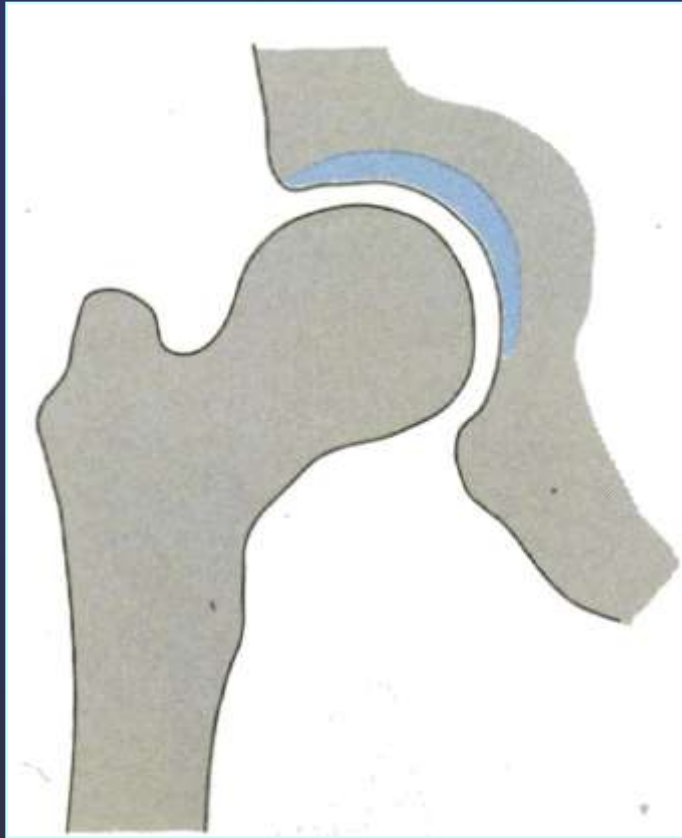
Pre-Operative Planning

Why do we need preoperative planning ?

- **To have an optimal result**
- **To prevent complications**
- **To do the operation procedure before real surgery- step by step**
- **To select the optimal implant**
- **To prevent malposition**
- **To achieve original leg length**



...depends on preoperative anatomy !

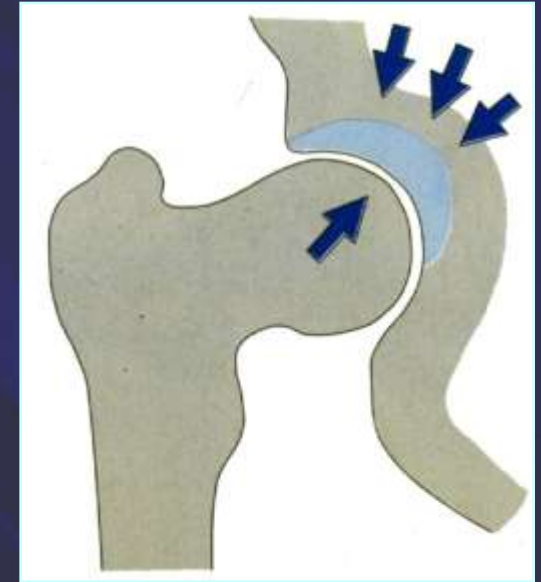


„normal“ (135°CCD)

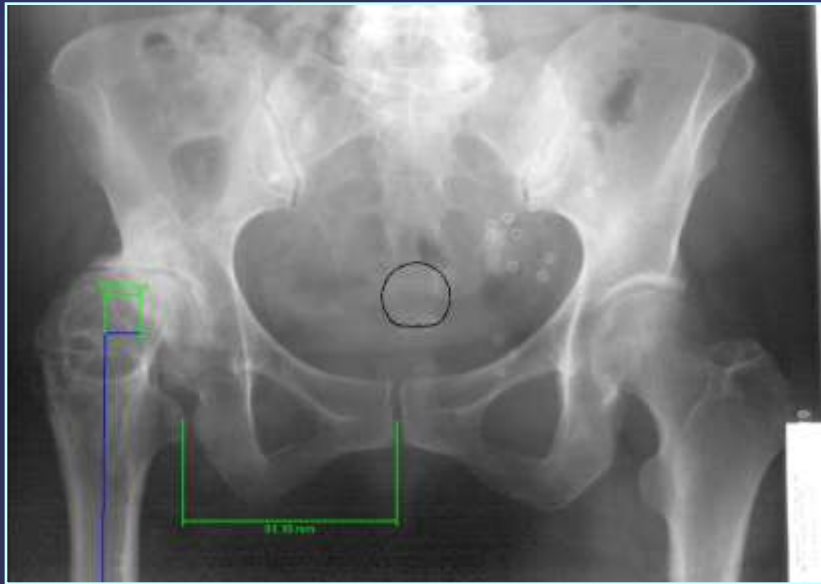
Coxa valga
($>150^\circ$ CCD)



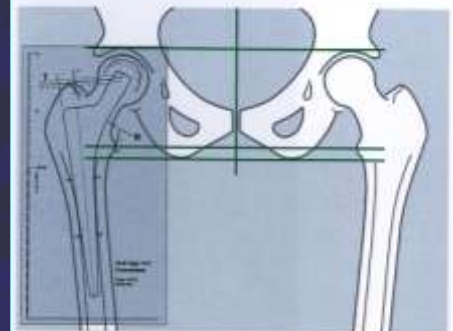
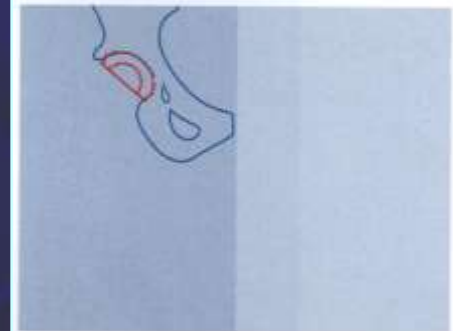
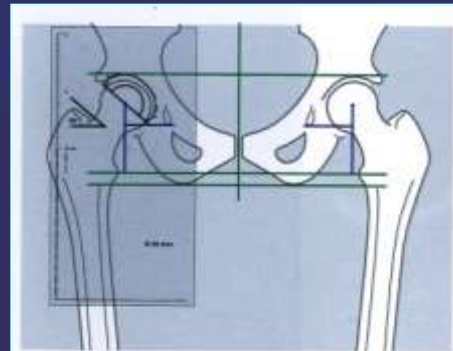
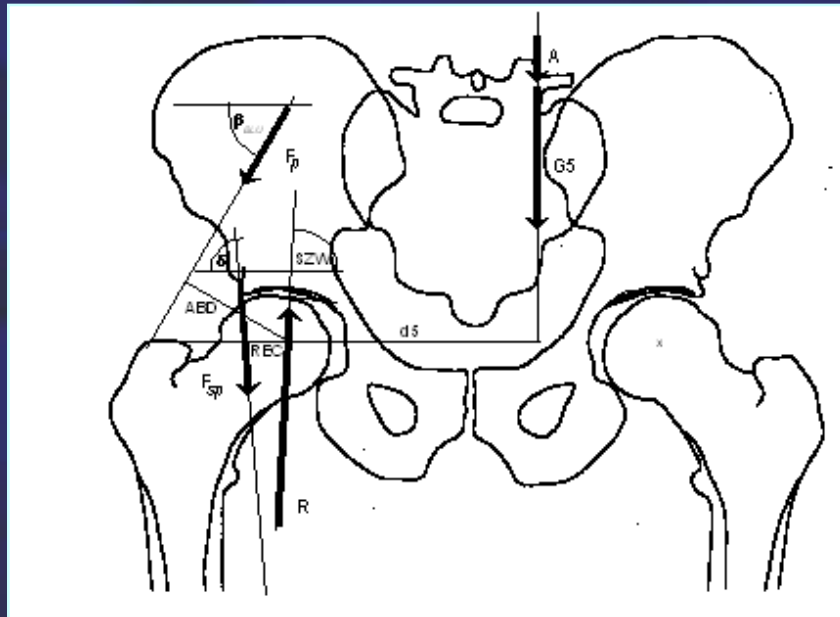
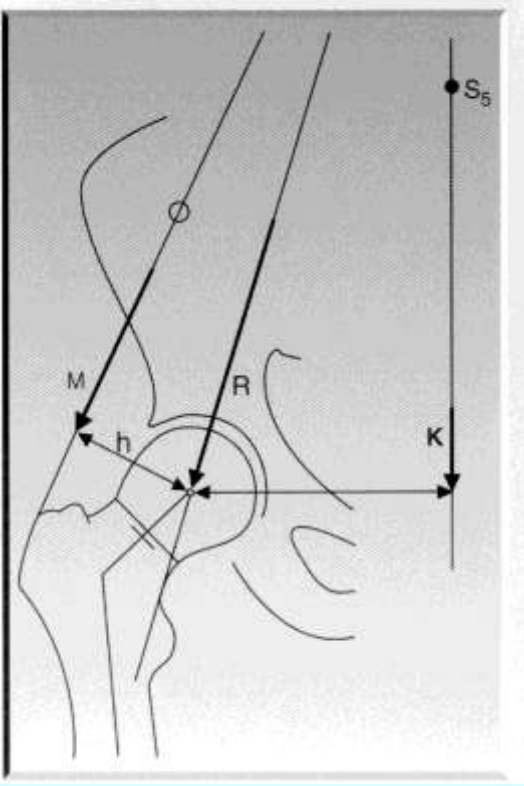
Coxa vara
($<120^\circ$ CCD)



...depends on offset and CCD!



...regular muscle tension!



Pauwels 1974

Pre-Operative Planning

- Why do we do preoperative planning?
- What do we do in preoperative planning ?



Pre-Operative Planning

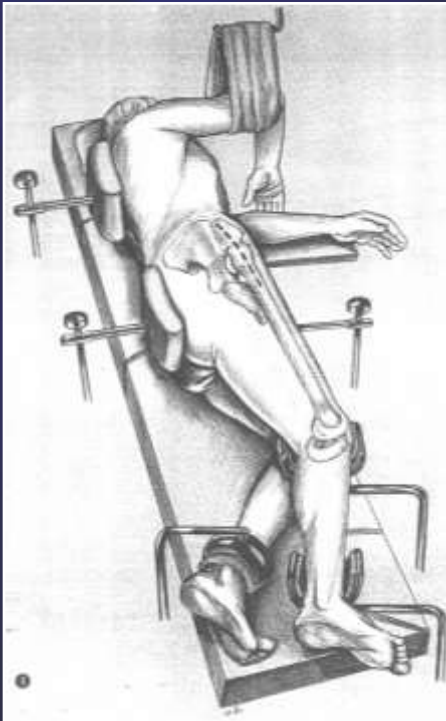
What do we do in preoperative planning ?

- **Position on the table**



Position on the Table

Side



Supine



Position on the Table



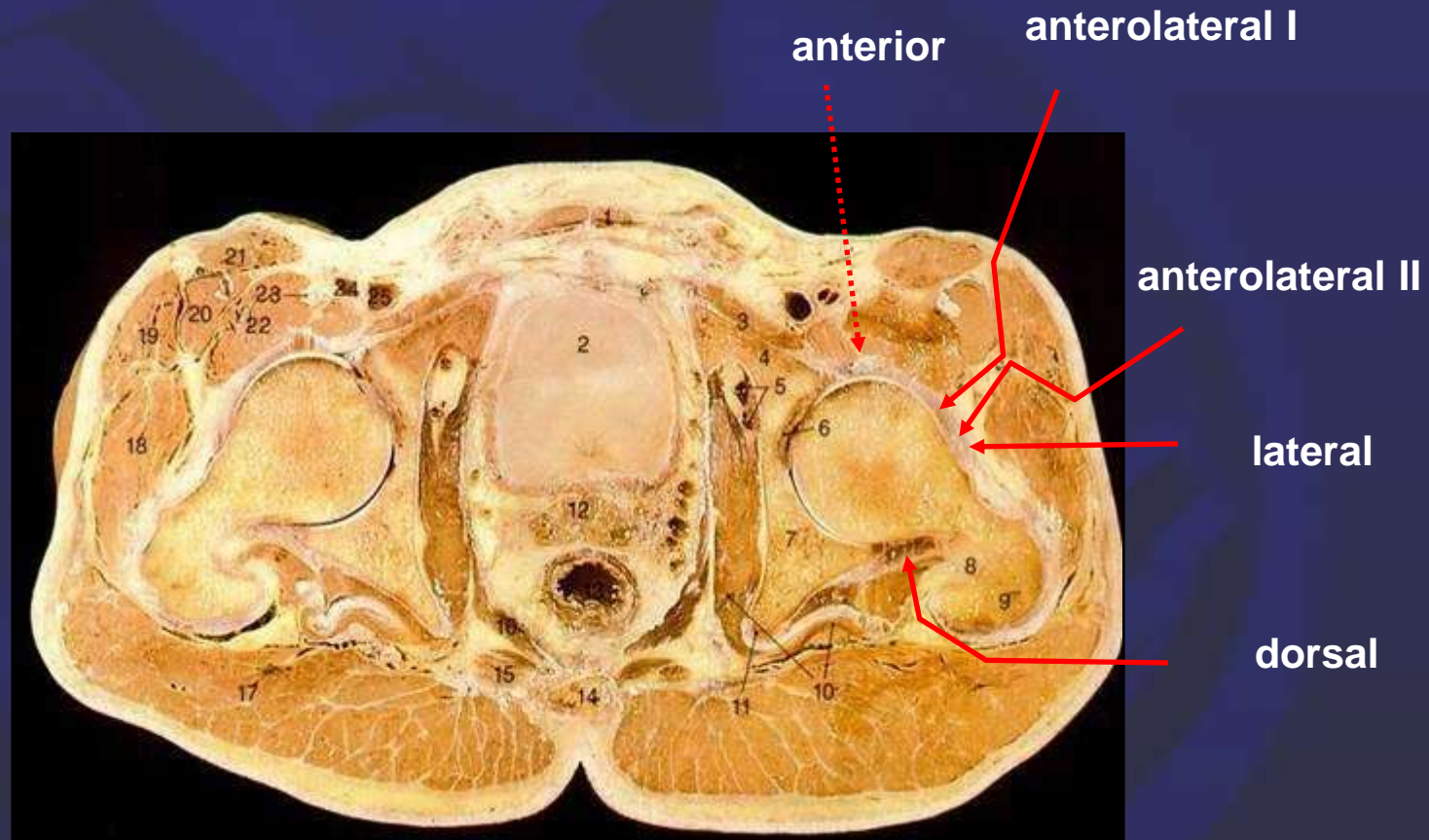
Pre-Operative Planning

What do we do in preoperative planning ?

- **Position on the table**
- **Approache**



Approaches to the Hip Joint



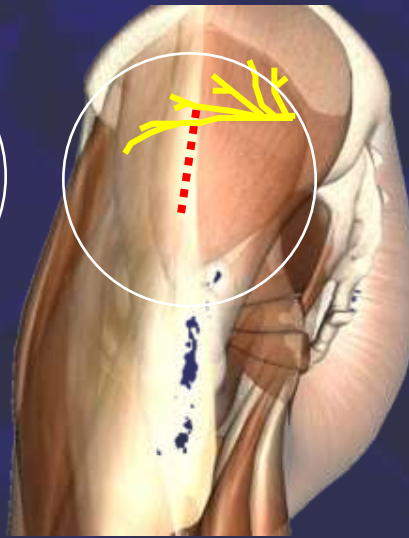
Approaches to the Hip Joint (MIS)



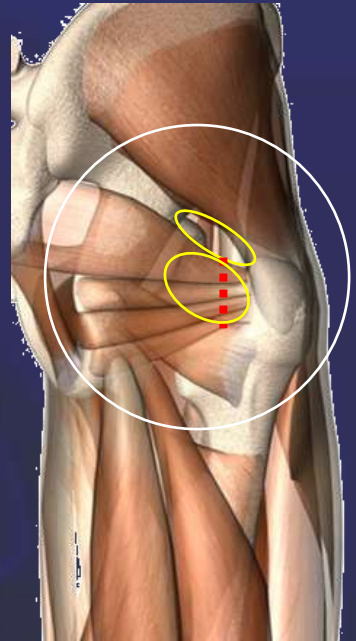
Smith-Petersen *anterior*



Watson-Jones *antero-lateral*



Hardinge *direct lateral*



Moore
postero-lateral

Pre-Operative Planning

What do we do in preoperative planning ?

- **Position on the table**
- **Approach**
- **Anaesthesia**



Pre-Operative Planning

- Why do we do preoperative planning?
- What do we do in preoperative planning ?
- How do we do preoperative planning?

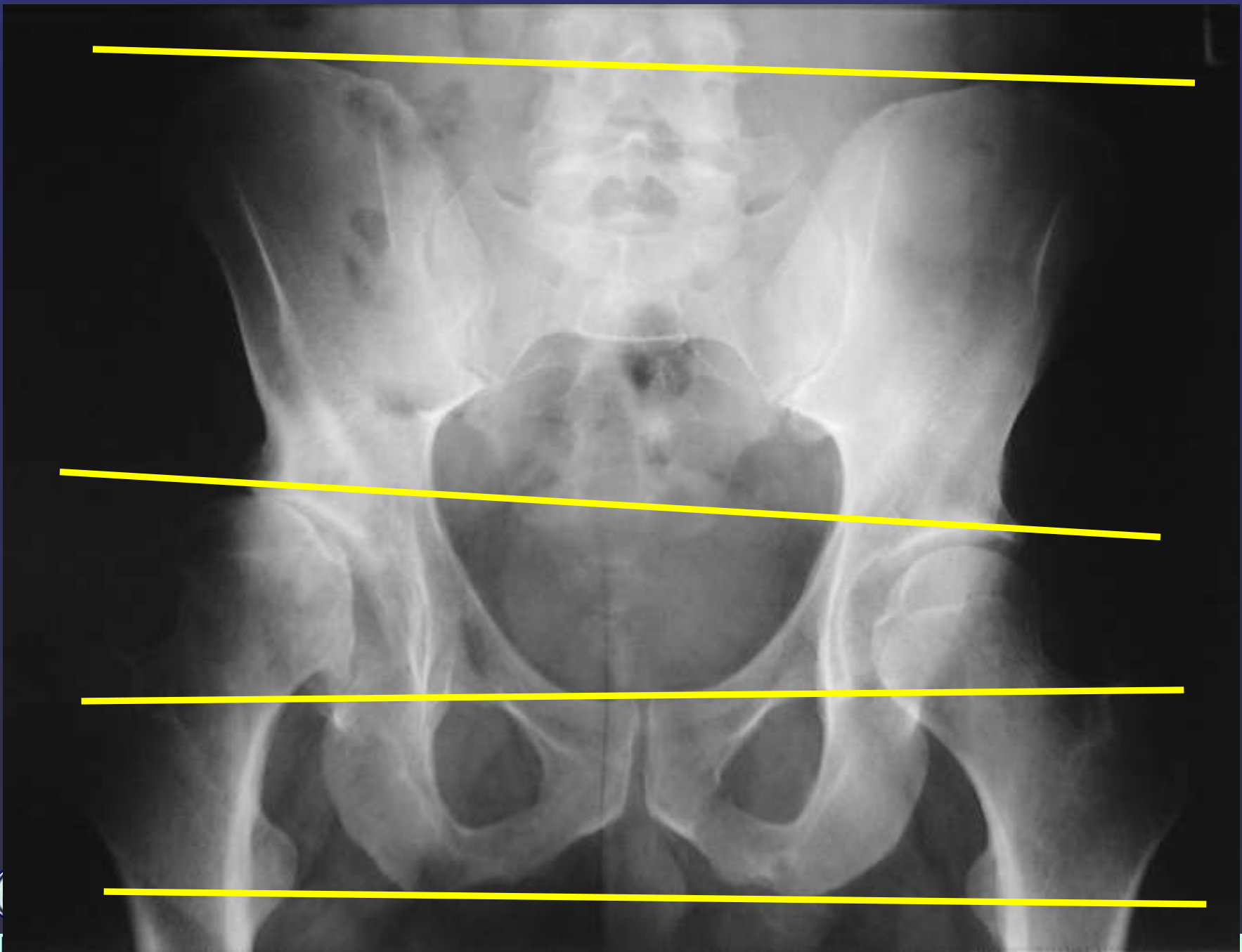


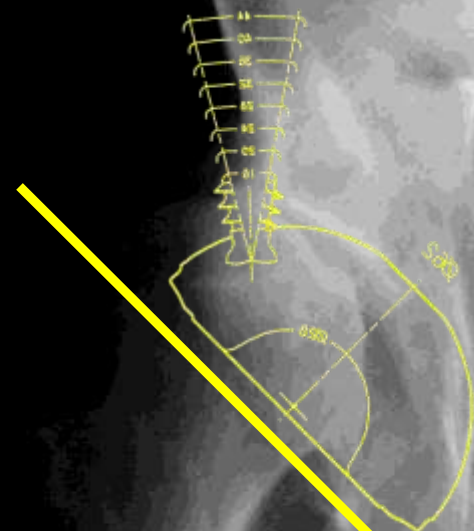
Pre-Operative Planning

How do we do preoperative planning ?

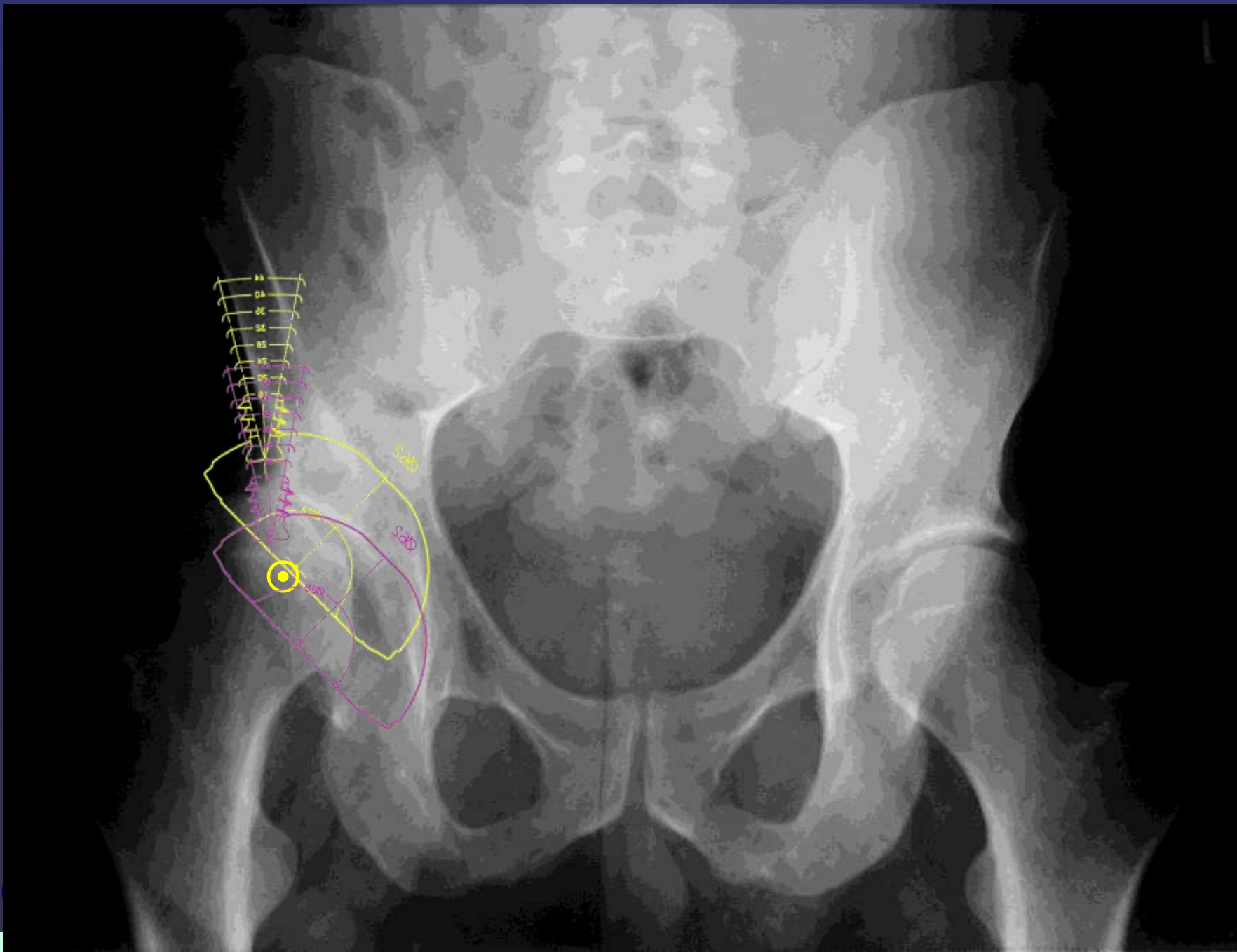
- handmade

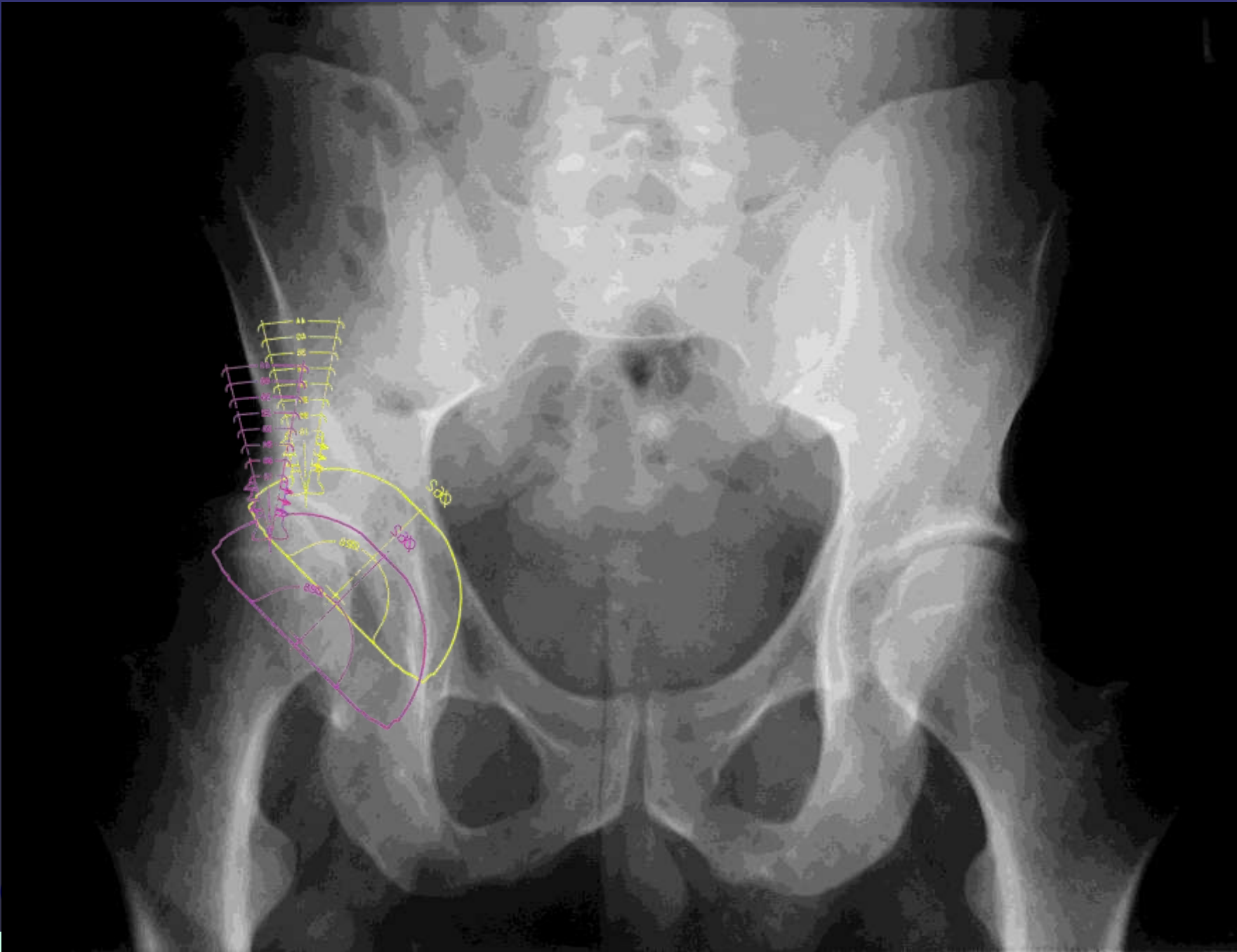




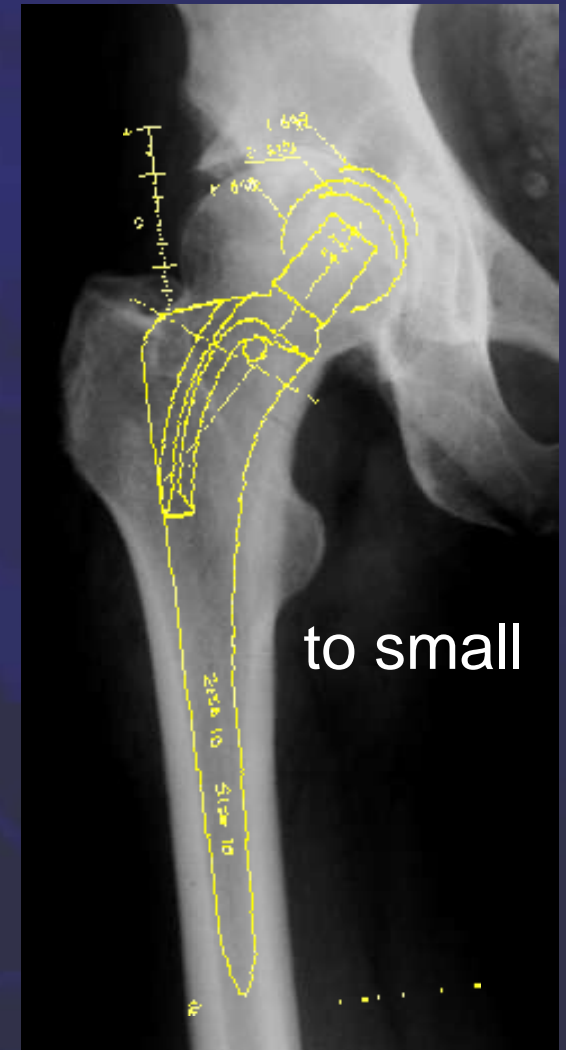
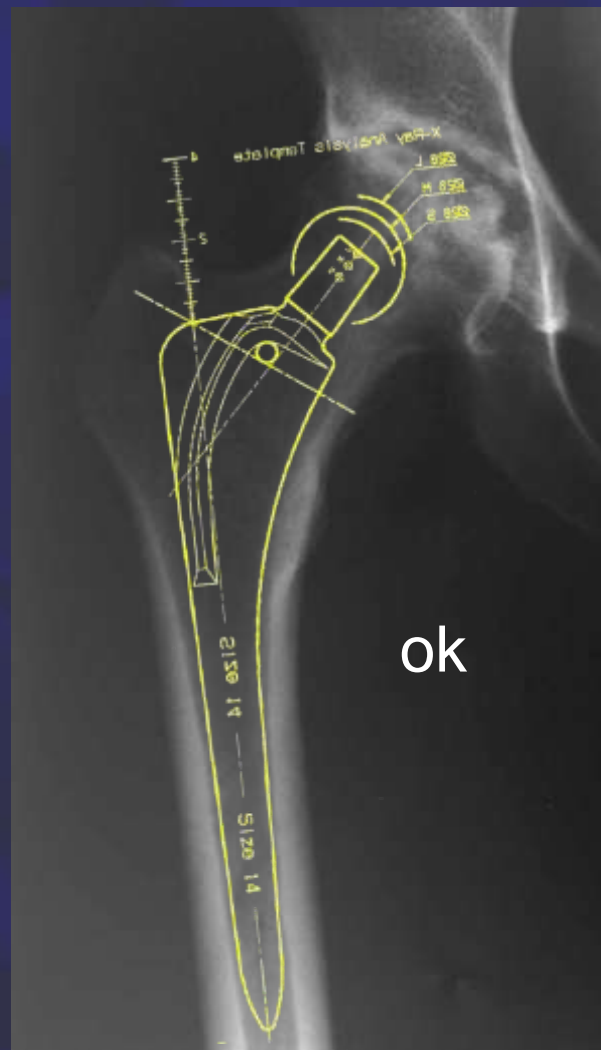
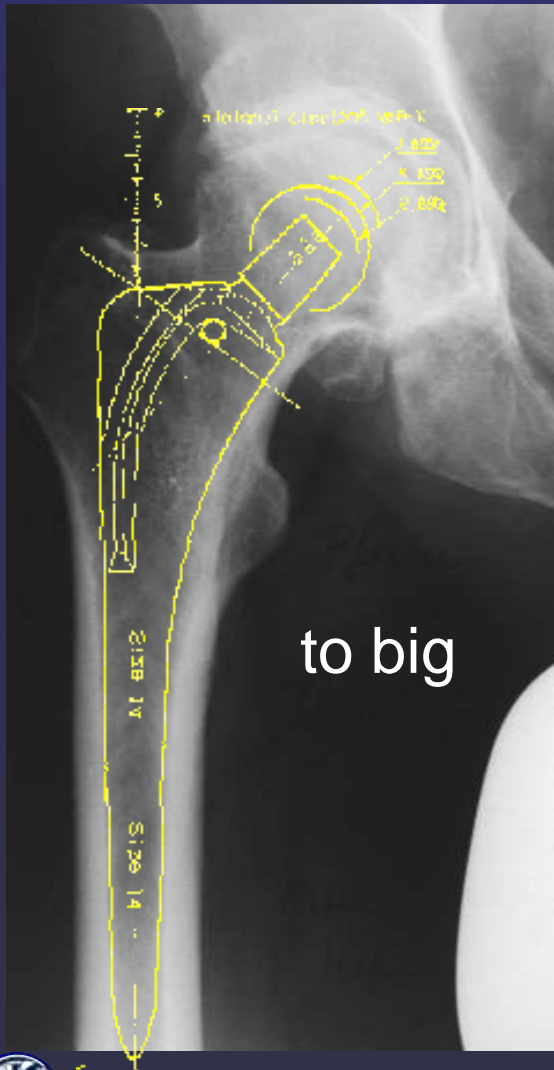


45°

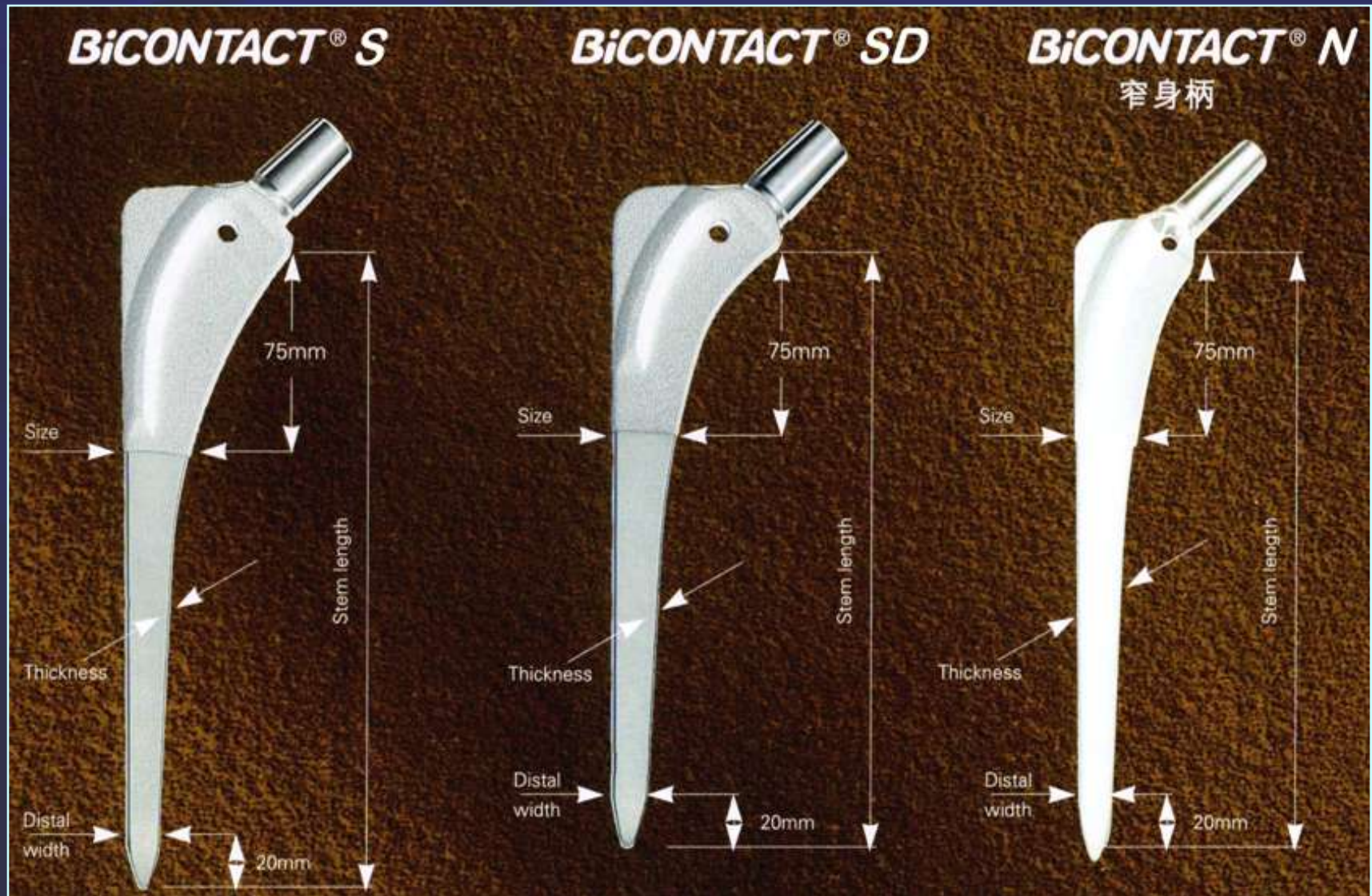




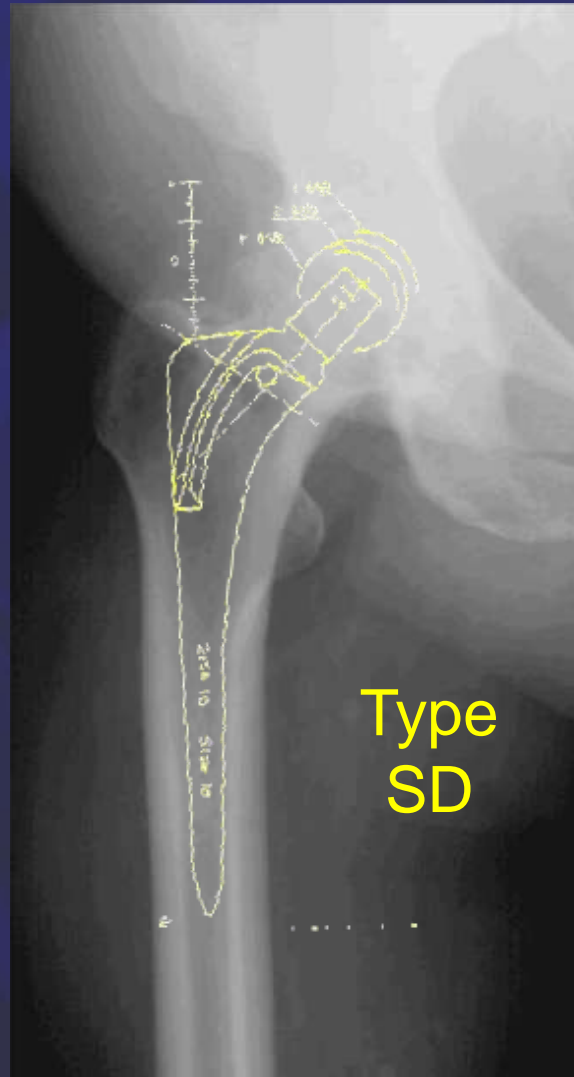
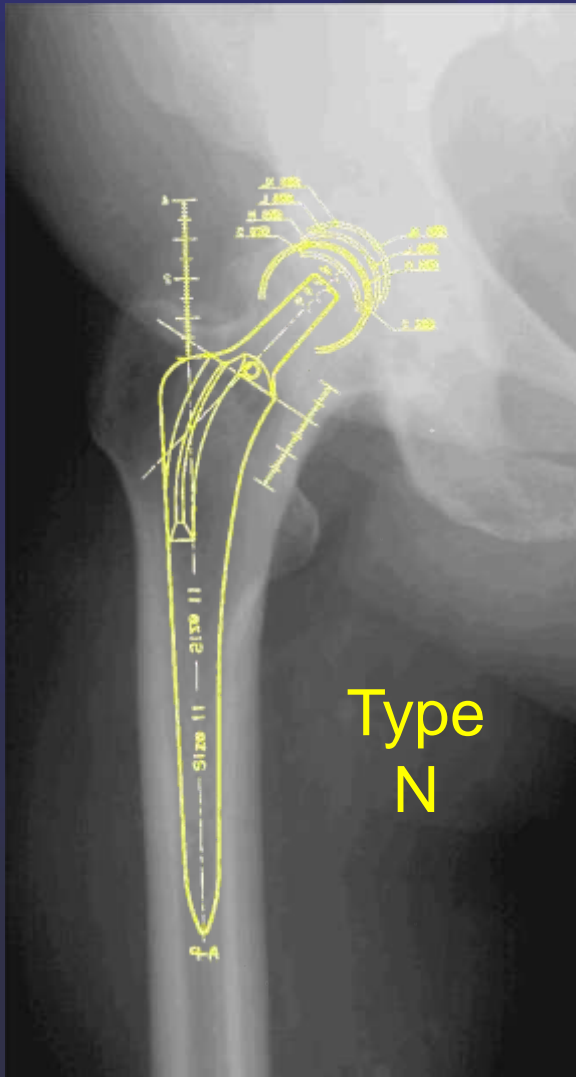
Stem Side



Stem Side



Stem Side

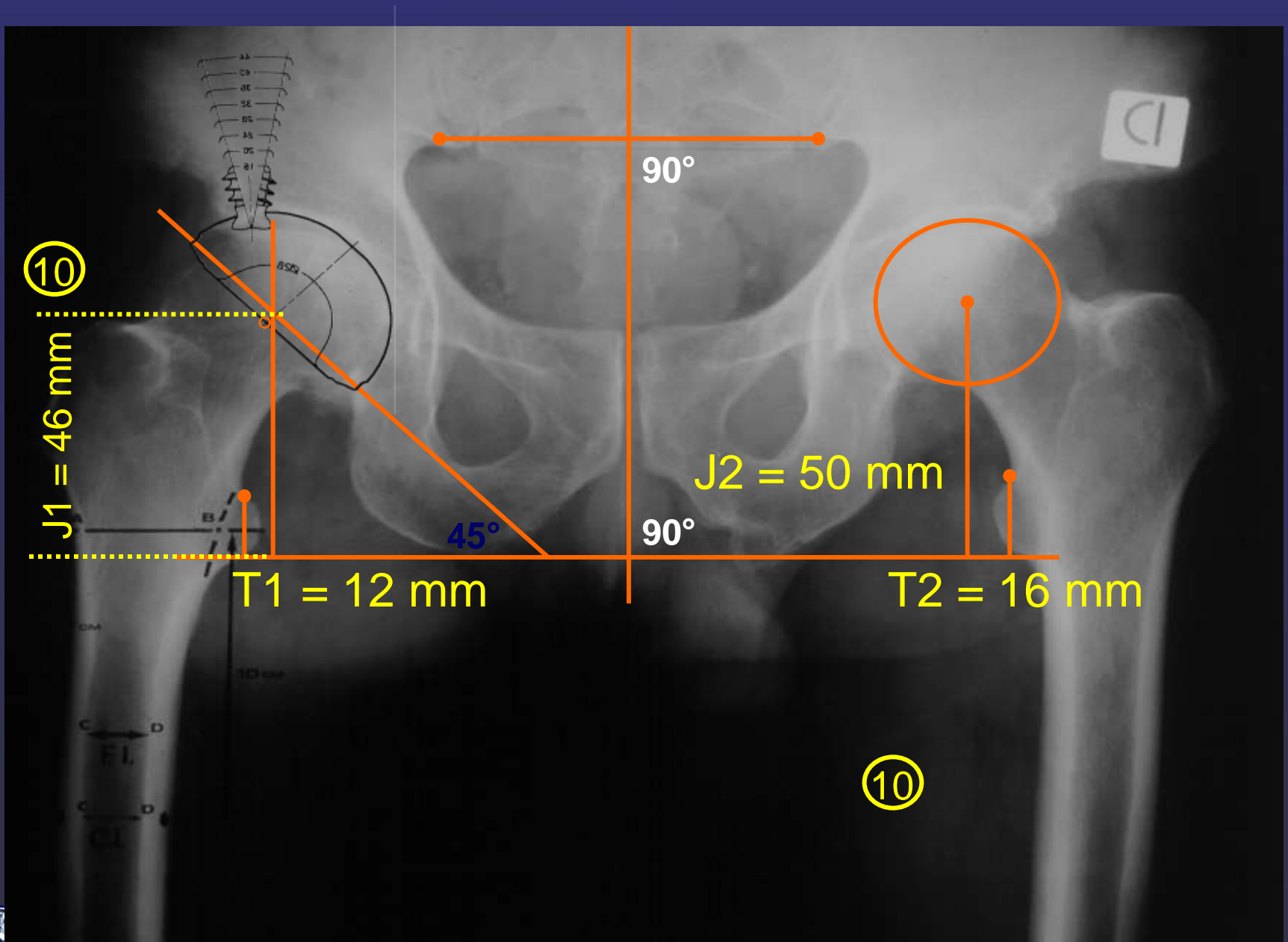


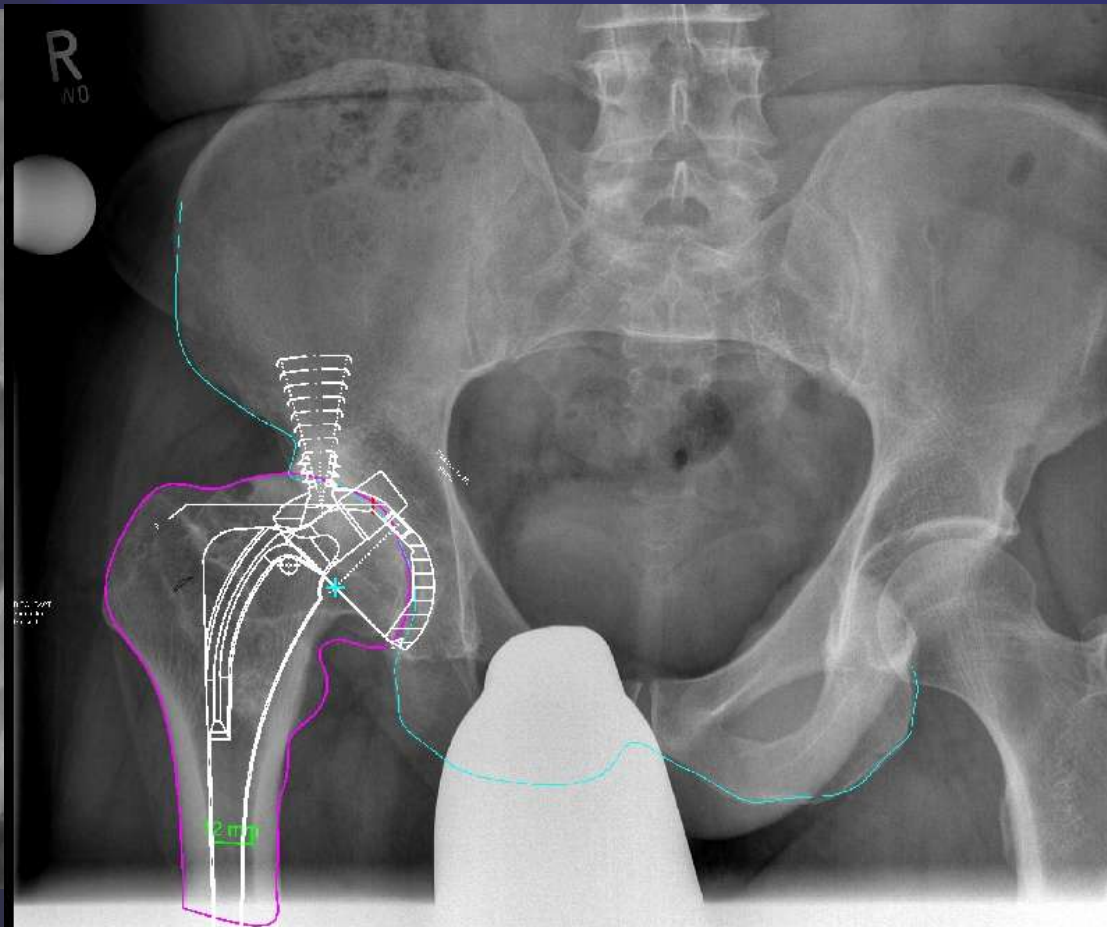
Pre-Operative Planning

How do we do preoperative planning ?

- handmade
- computermade

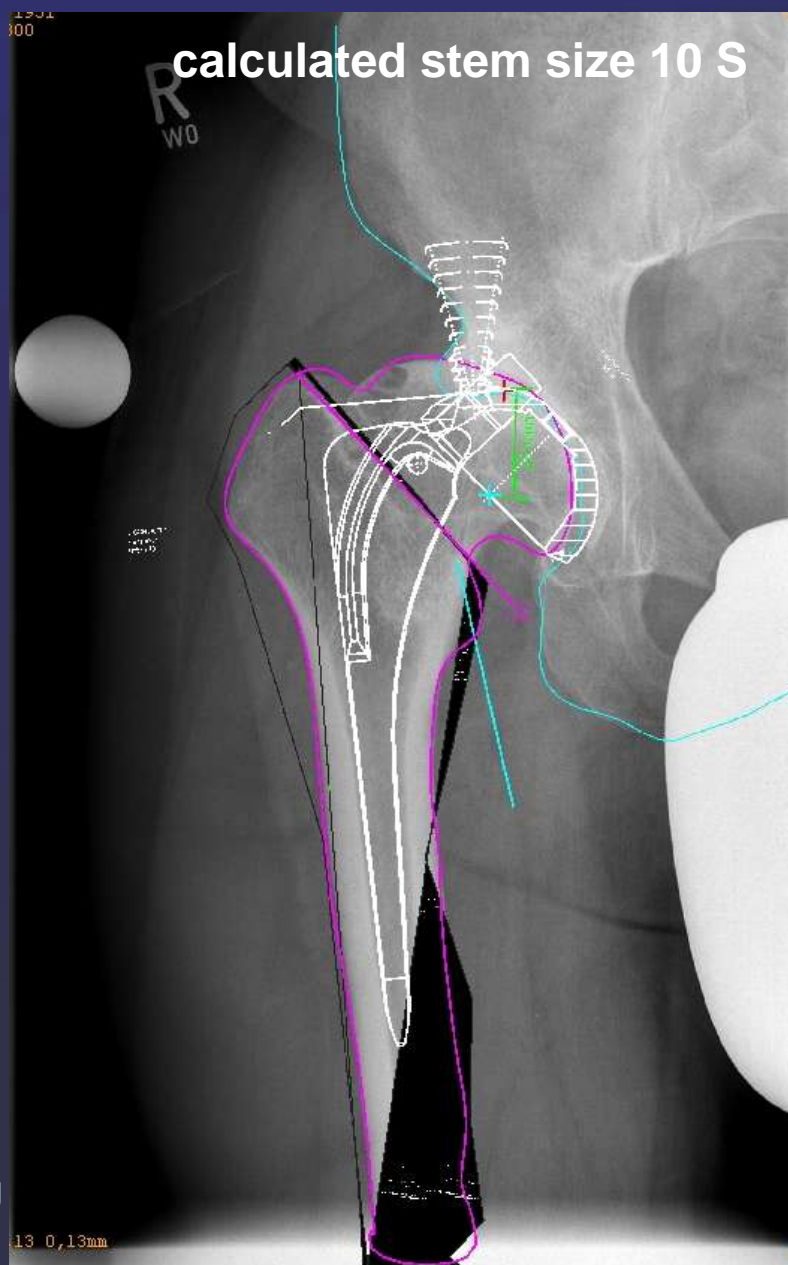






SL:
SD:
ST:
PS: 0,15 0,15mm
R-BECKEN

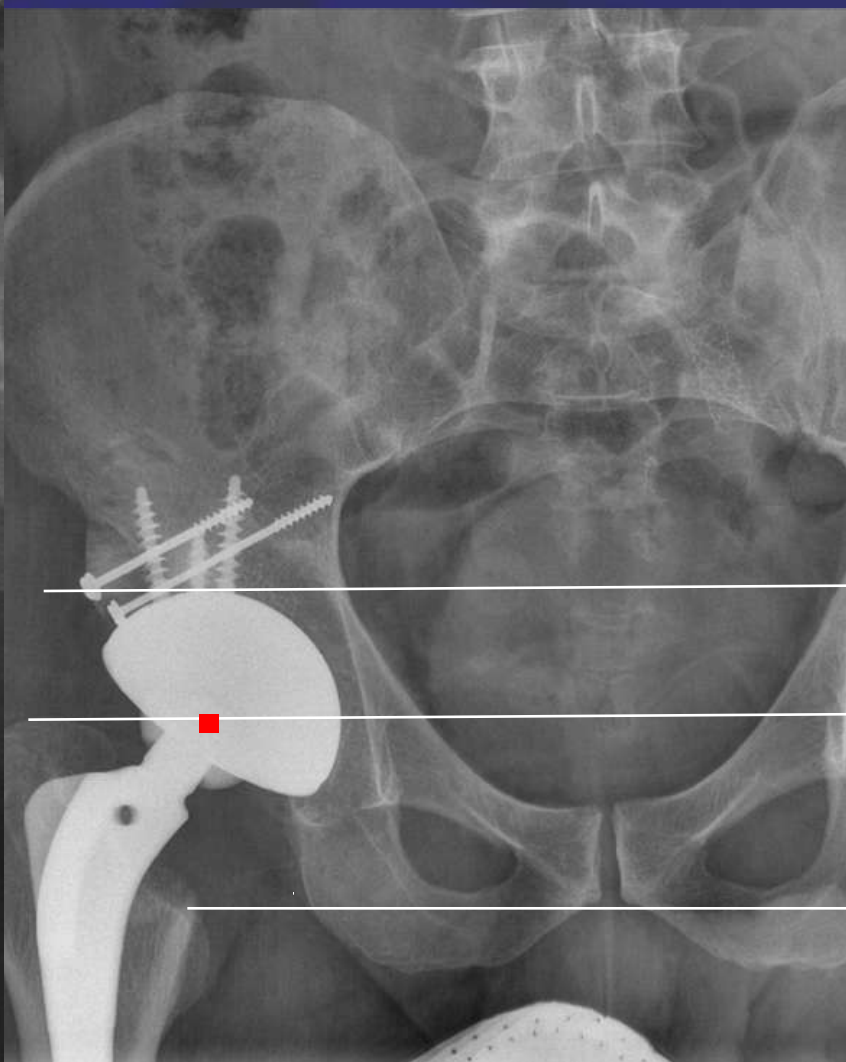
calculated cup size 54 mm



realy 60



realy 12 SD



Pre-Operative Planning

How do we do preoperative planning ?

- handmade
- computermade

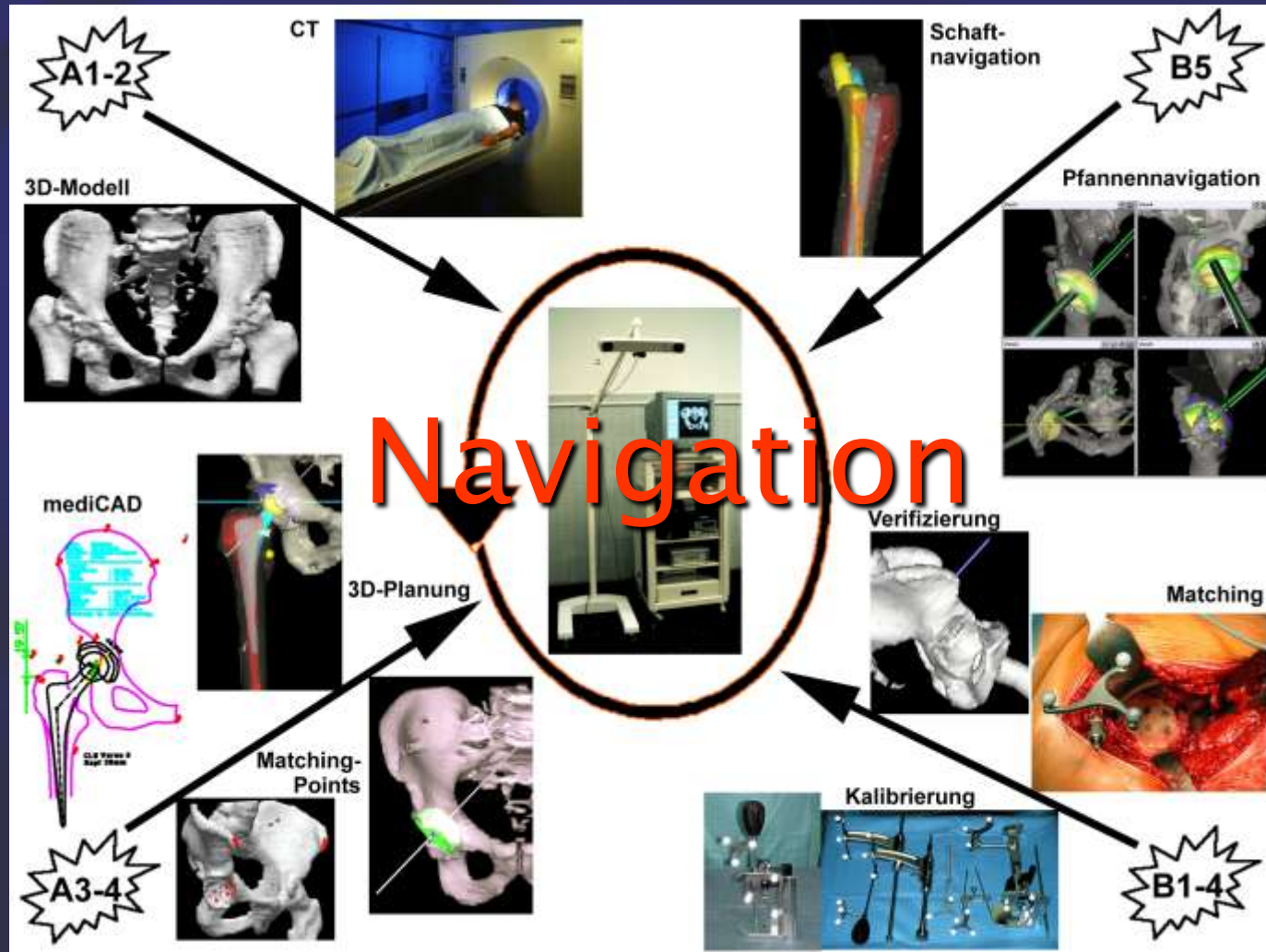
Compromise



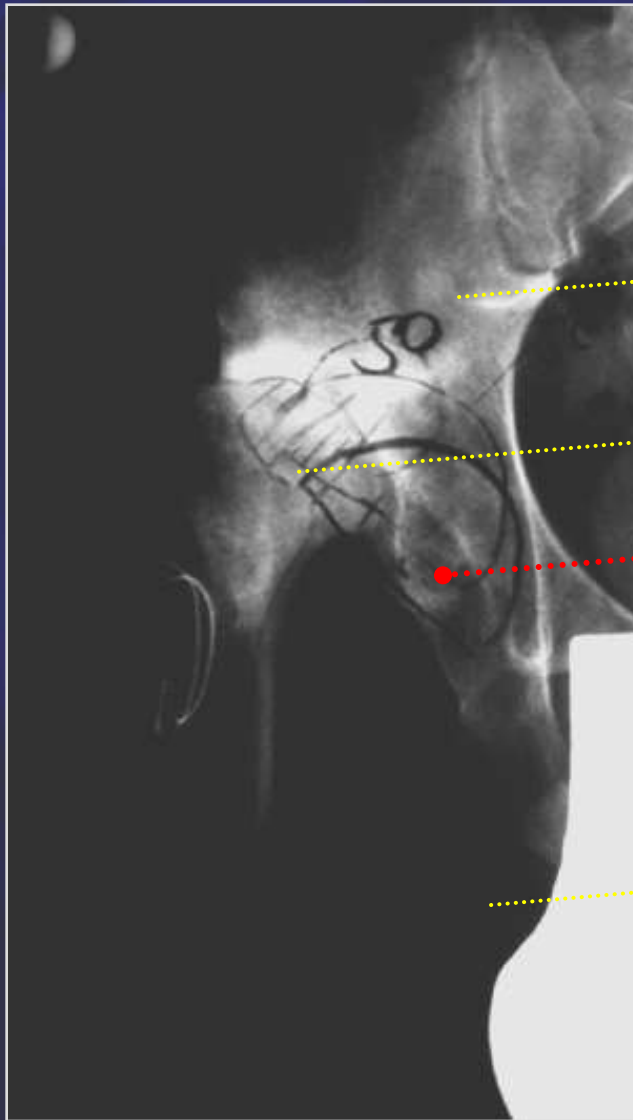
COMPETITIVE

Billy had to admit--
Timmy's treehouse was better than his.
WAS better.

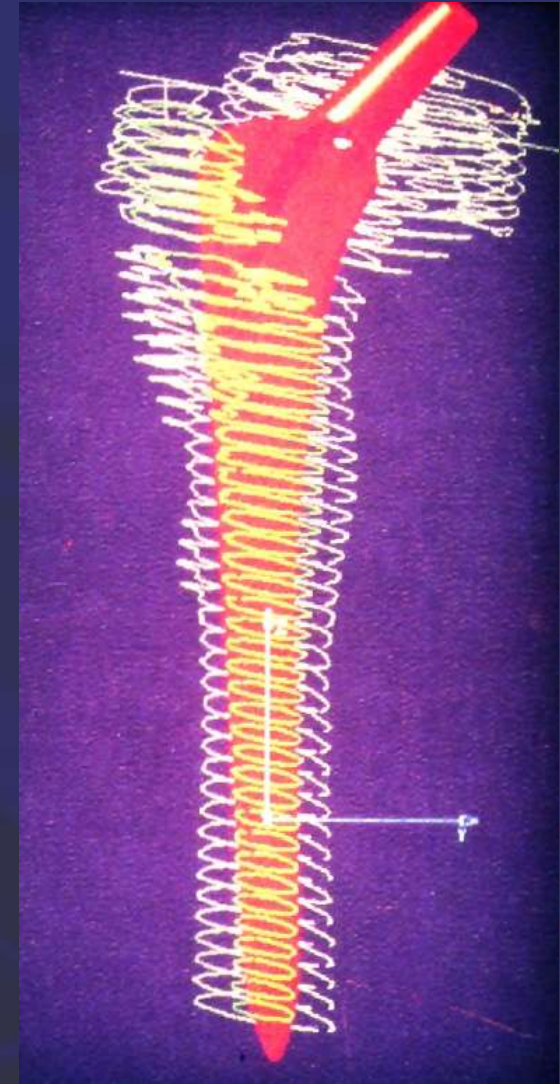
The Future



Special Case

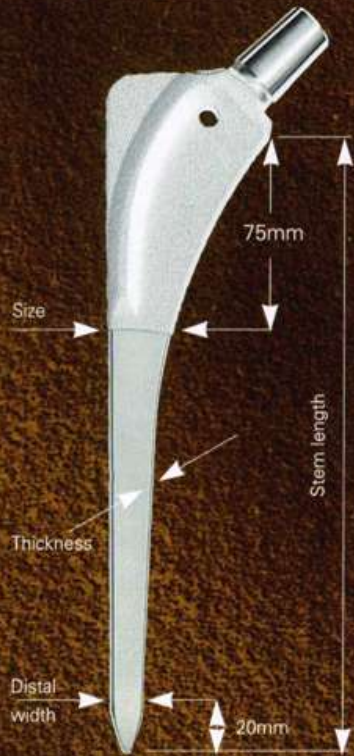


Custom made prosthesis?

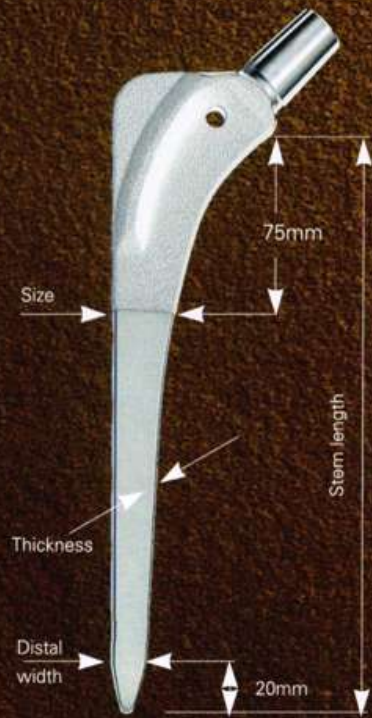


Custom made prosthesis?

BiCONTACT® S

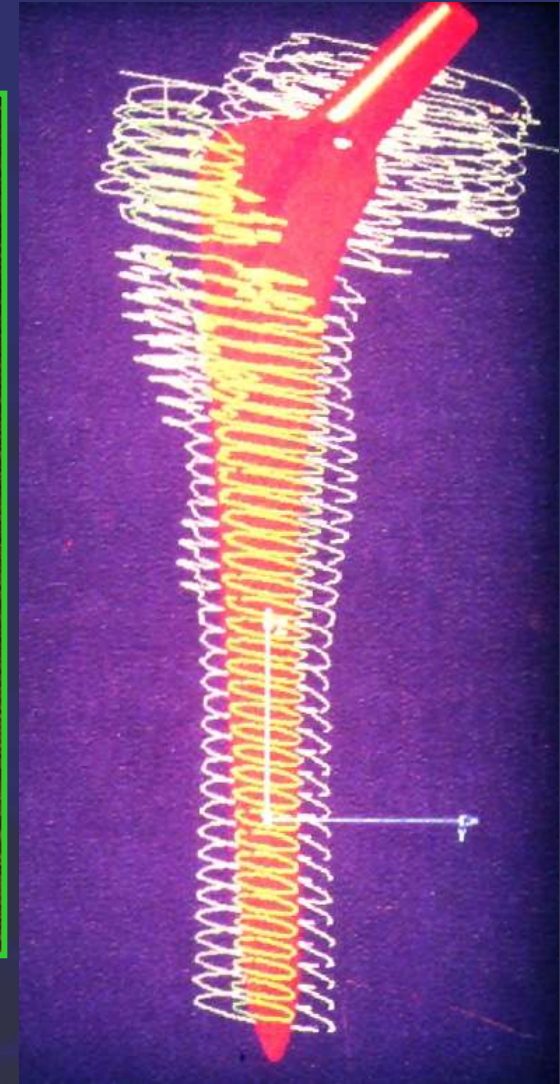
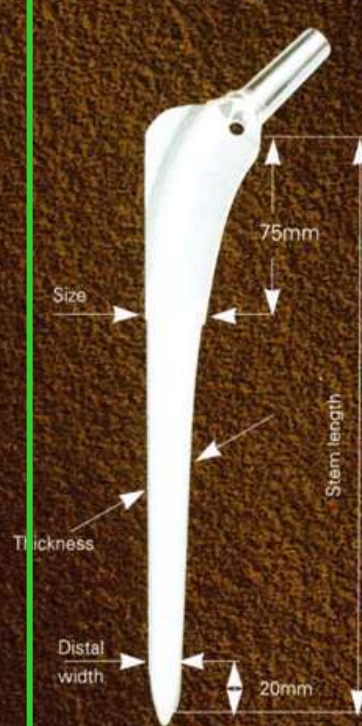


BiCONTACT® SD



BiCONTACT® N

窄身柄



MZ ♂ *55, 43y (1998)

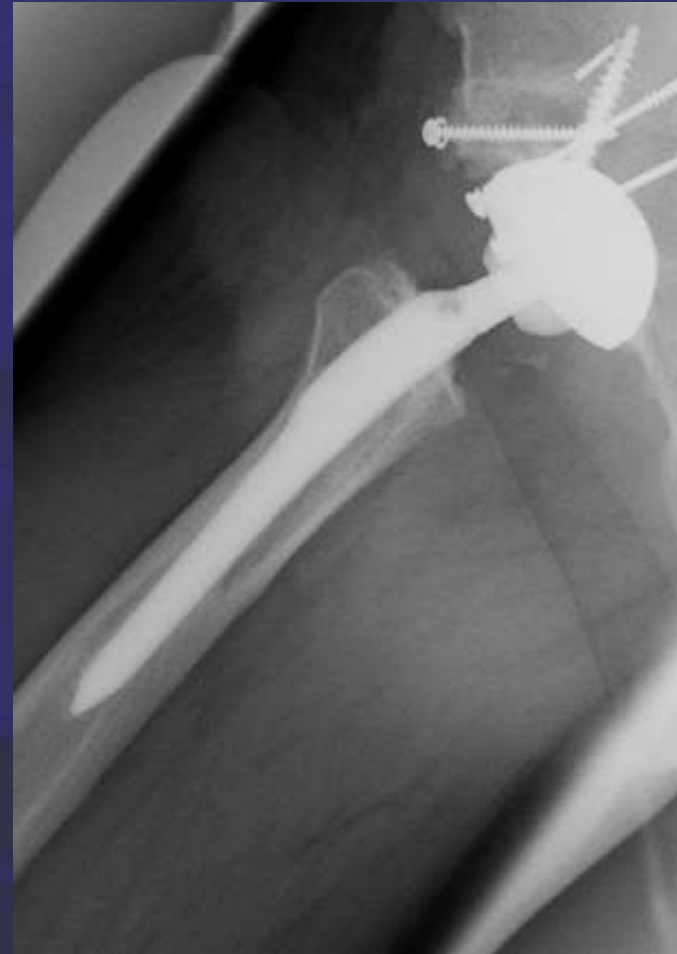
March 1998

THA right.



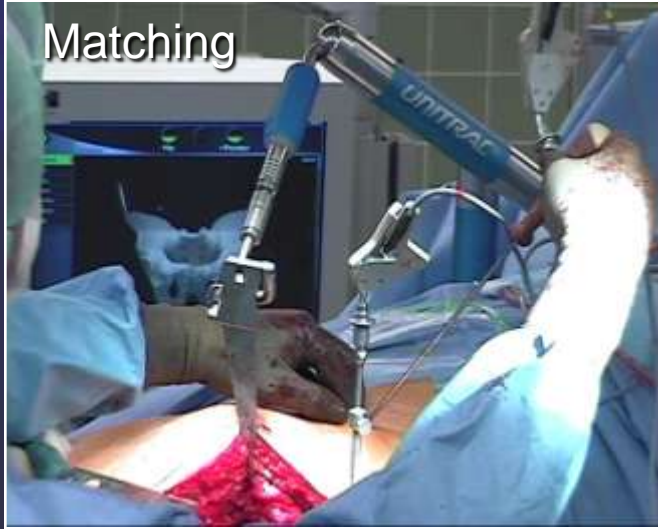
06/2012 – after 14 y

No pain, fully satisfied

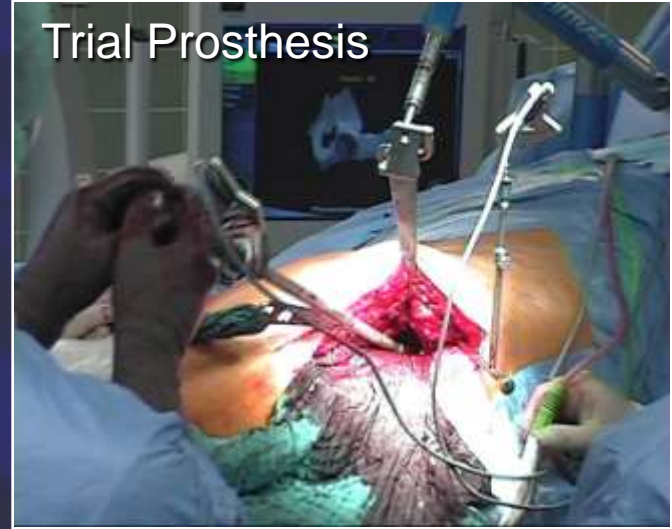


The Future is now!

Matching



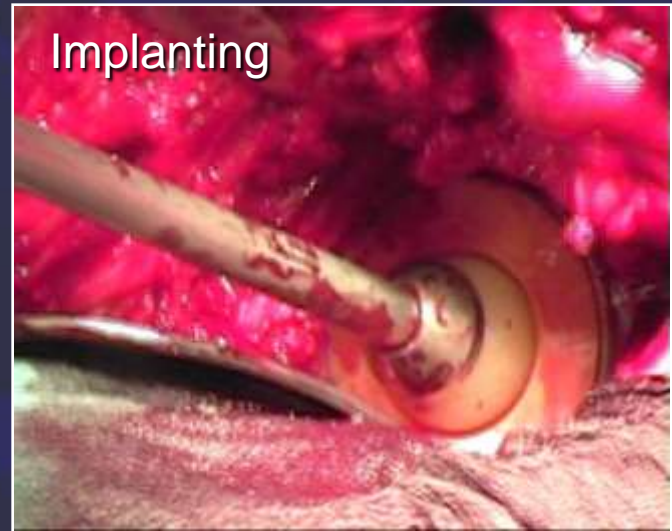
Trial Prosthesis



Preparing



Implanting



Take Home Message



...failing to plan is
planning to fail!