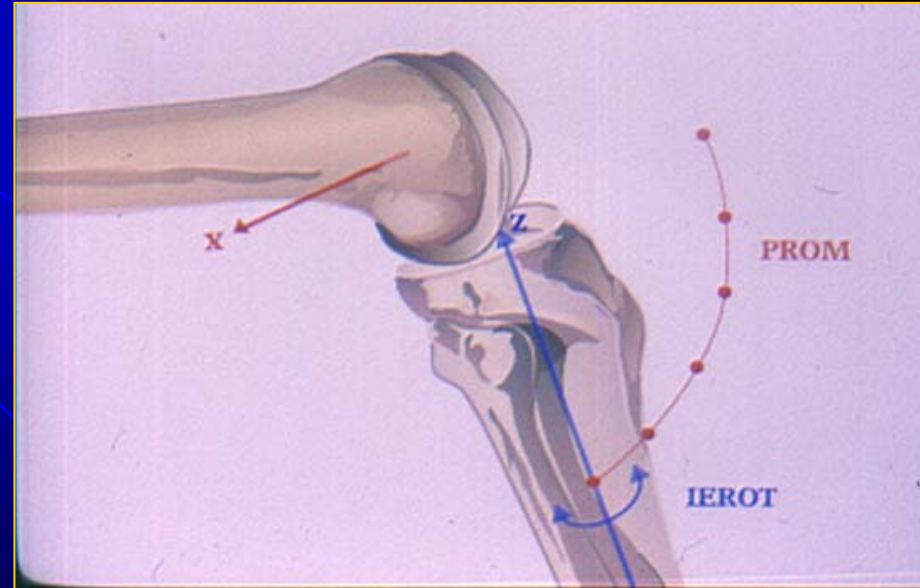


Kinematic studies

Functional Method

- ↓ **Joint functional system defined by motion features**
- ↓ **Motion described as 3 orthogonal rotations and translations**



Functional Method

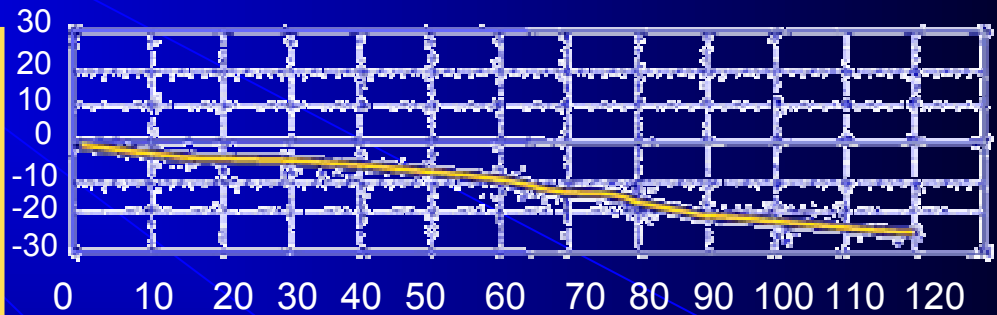
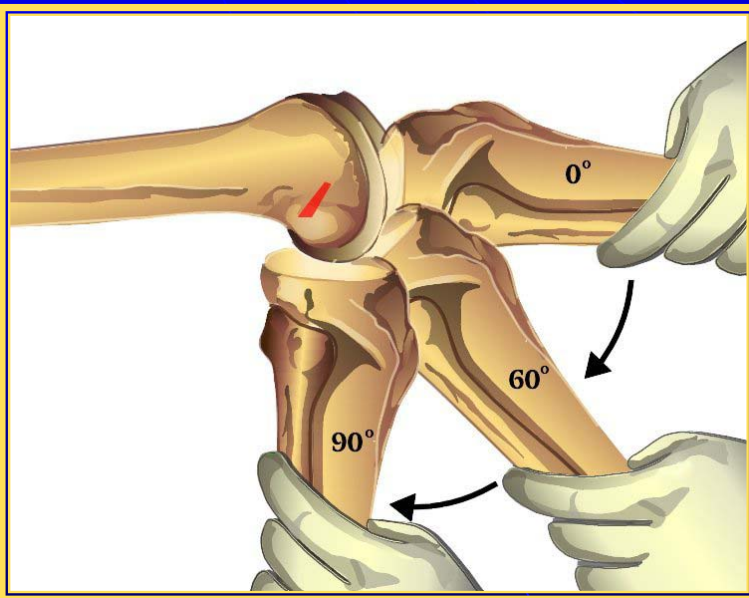
**Using
electrogoniometer
(FARO) classical
clinical test can be
performed without
acquisition of
anatomical
landmarks**



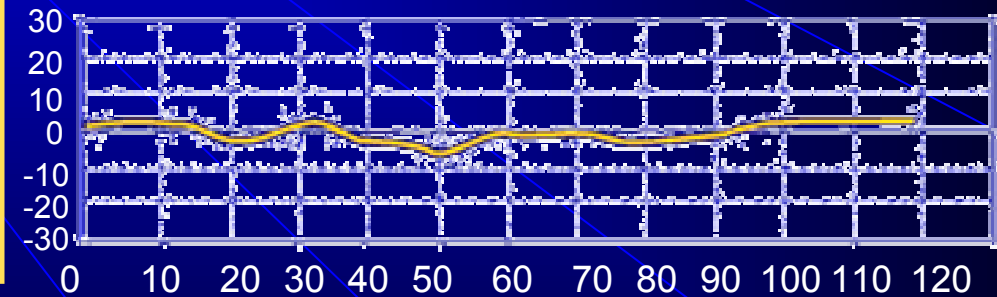
Kinematic studies

PASSIVE R.O.M

(mm)



IE

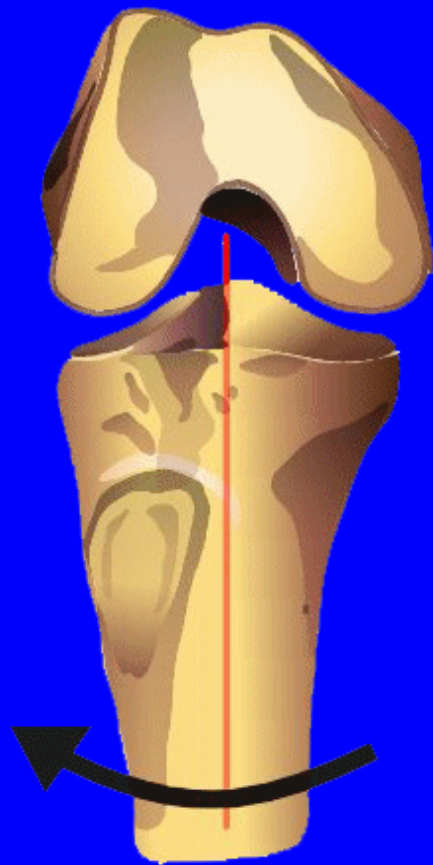


VV

Flexion angle (deg)

Kinematic studies

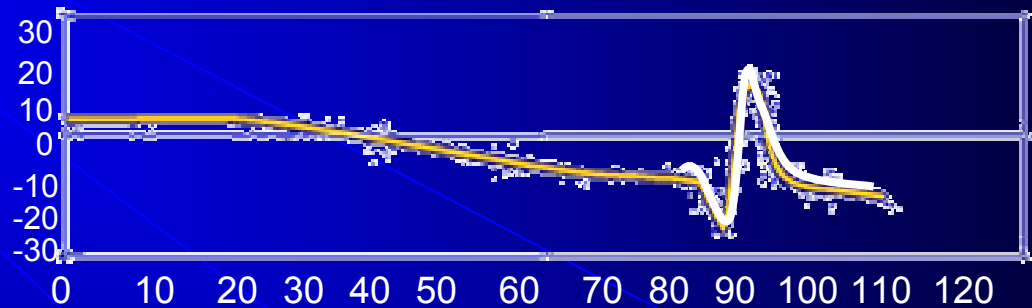
I/E TEST



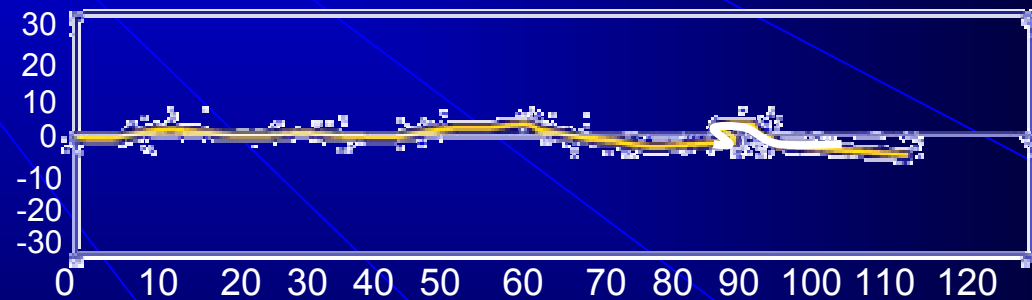
**EXTERNAL
ROTATION**

**INTERNAL
ROTATION**

(mm)



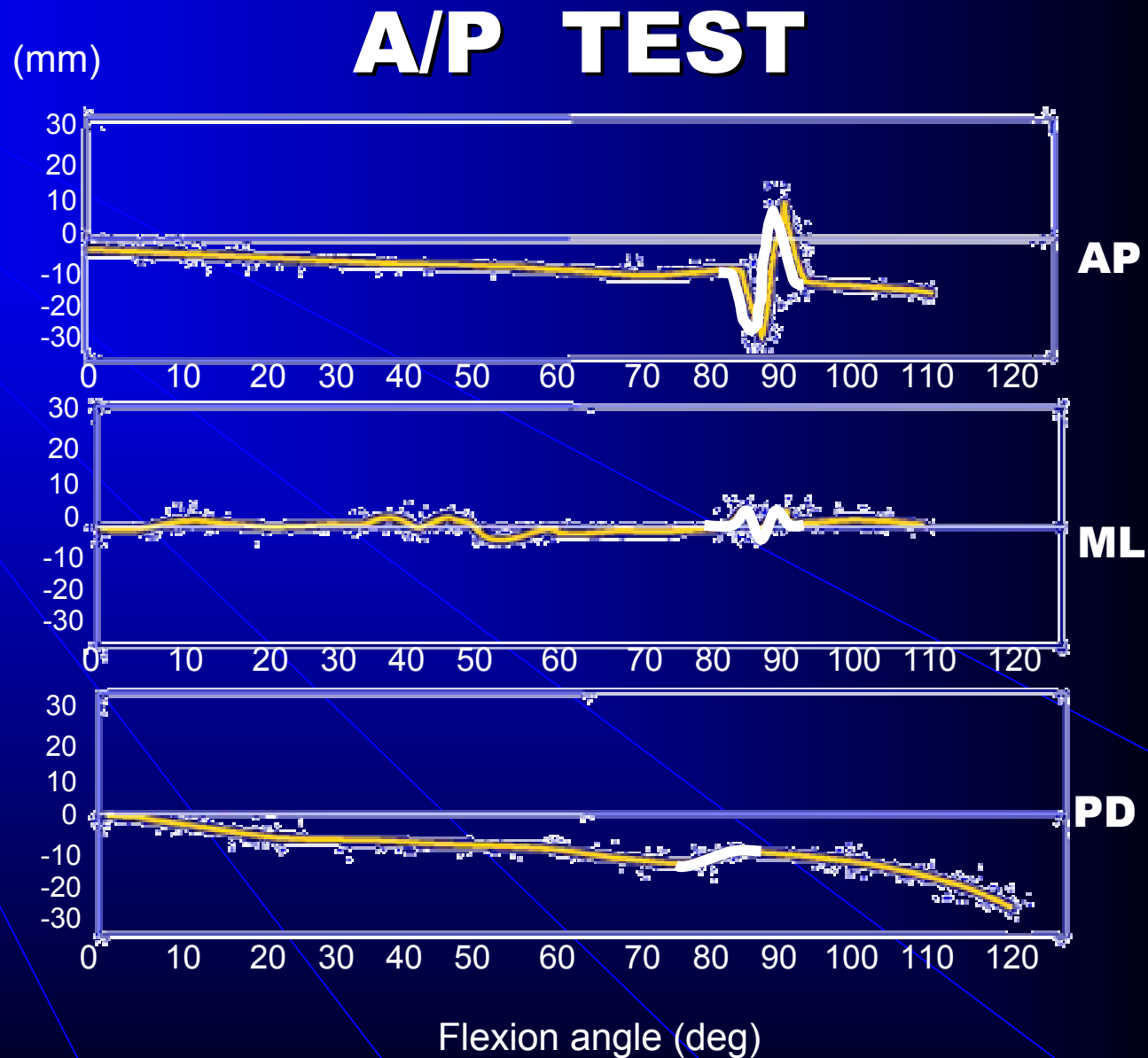
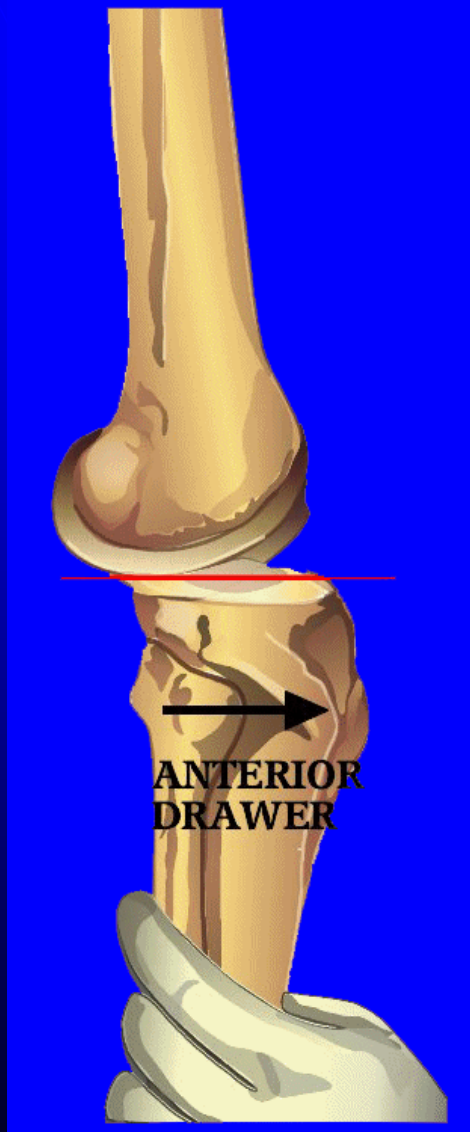
IE



VV

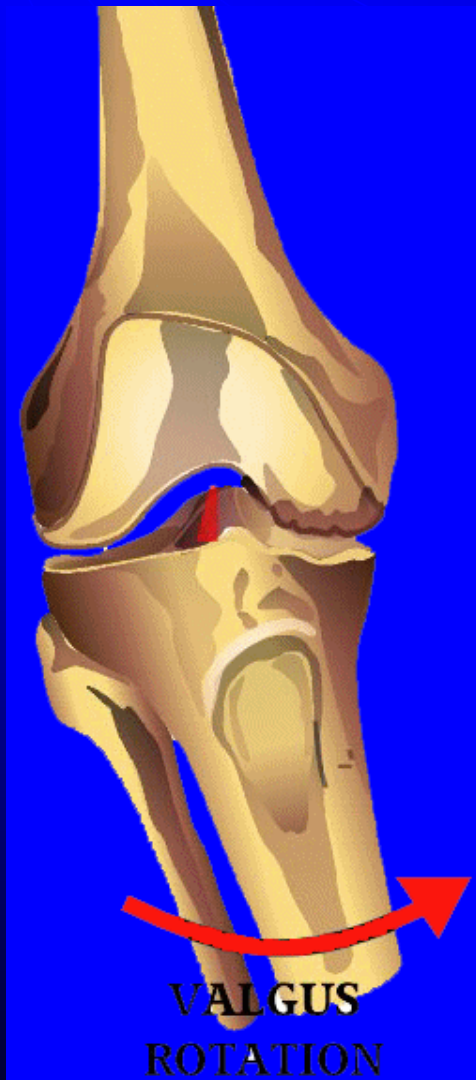
Flexion angle (deg)

Kinematic studies

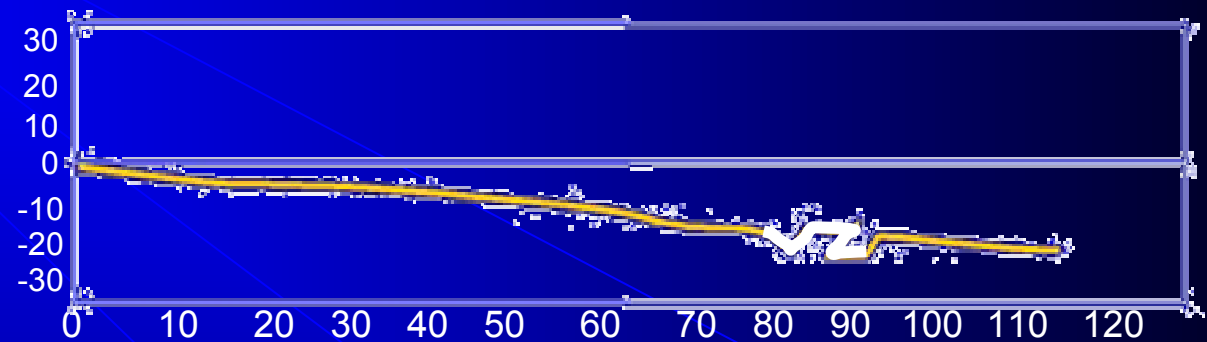


Kinematic studies

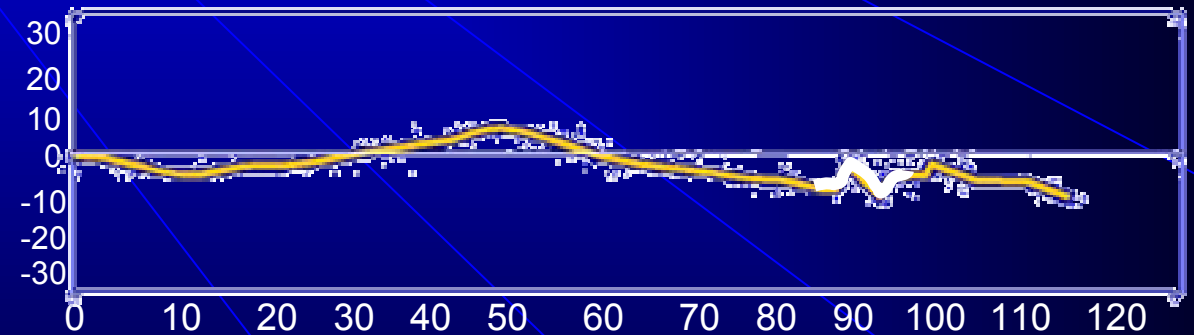
VV TEST



(mm)



IE



VV

Flexion angle (deg)

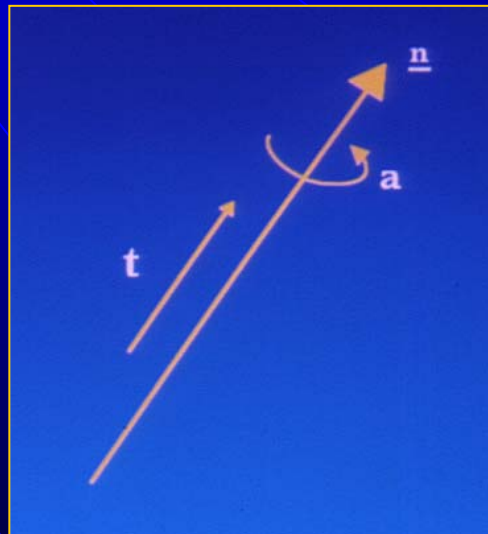
Comparative analysis of kinematic methods

Martelli S., Zaffagnini S., Marcacci M.:

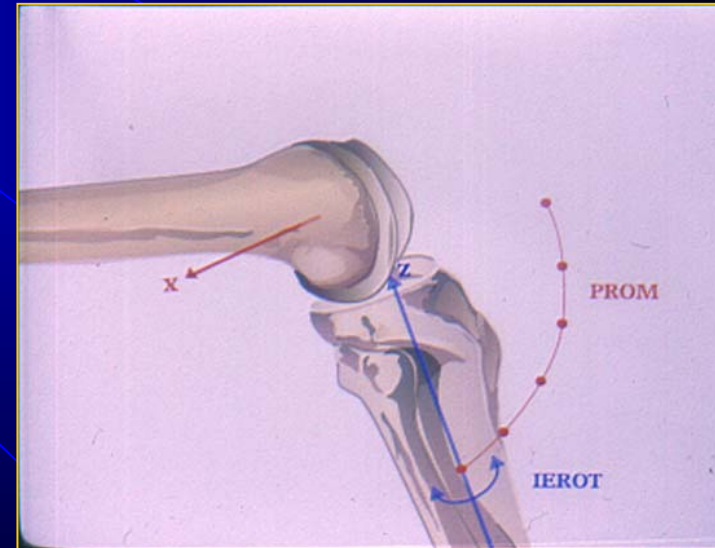
Comparative analysis of passive knee kinematic with 3 methods
ISAKOS 1999



Grood and Suntay



Blankevoort



Functional

Kinematic studies

Comparative analysis of kinematic methods

↓ **HA method less effective**

↓ **JCS and JFS comparable estimation of knee kinematics**

↓ **JFS:**

- **no needs of anatomical landmarks**
- **possible intraoperative use**

PAIRED TESTS

	JCS	JFS	HA
PROM	-	-	-
IE stress	9°(IE)	8°(IE)	9.4°(h_angle)
AP stress	9.5mm (AP)	8mm (AP)	-

Mean differences before and after
ACL injuries