



Functional ACL Failure Painful Knee

J. Barth, A. Boutsiadis, J. Rossi, N. Tardy
and JC Panisset. Grenoble, France



6th Advanced Course on Knee surgery
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CENTRE
OSTÉO-ARTICULAIRE
DES CÈDRES

AKP Affects Return to Sport

Lack of return to sport 53% (n=135) after ACL-R

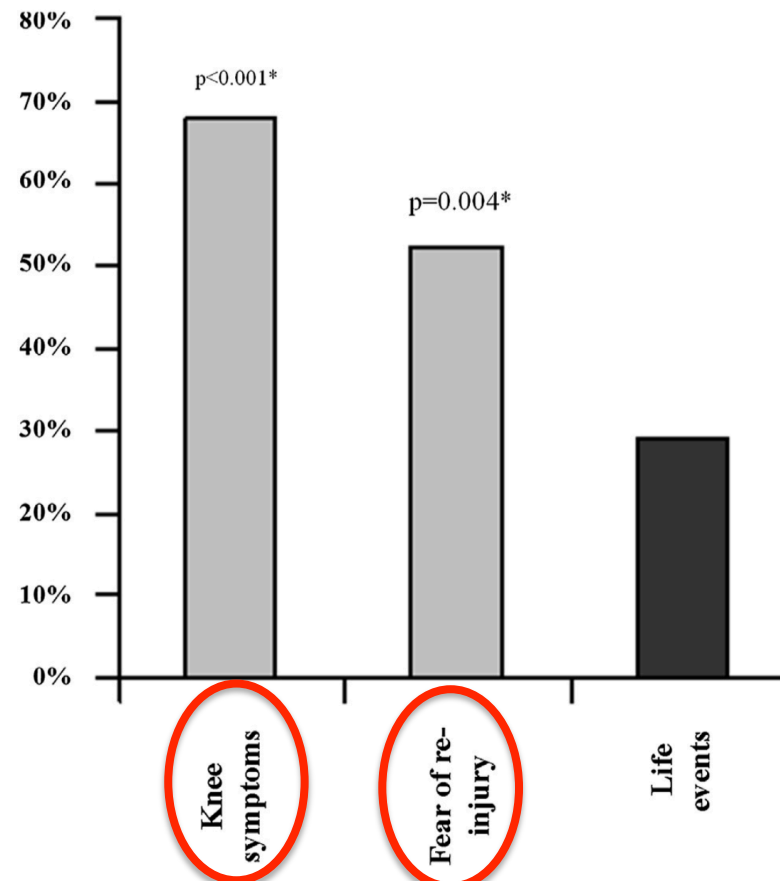
Pain 47%

Swelling 28%

Stiffness 27%

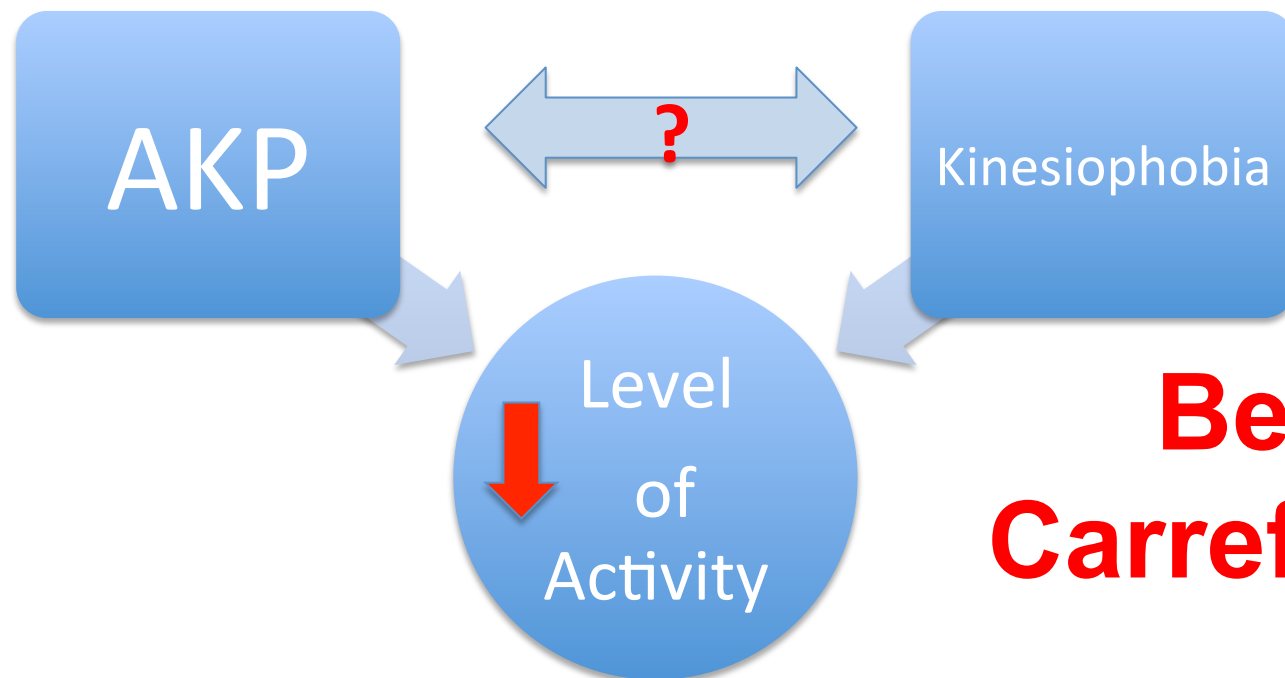
Instability 26%

Weakness 22%



Flanigan *et al.* Arthroscopy 2013

Psychological Cause?



**Be
Carreful !**

Concept of pain catastrophizing
an exaggerated psychological response in anticipation of pain

Picavet et al. Am J Epidemiol 2002

Are Females likely to be more Painful?



No !
RR=1

Tan et al. AJSM 2016

Age



Returner to sports are younger
Pain related to degenerative lesions

Flanigan et al. Arthroscopy 2013

Samitier et al. JBJS 2015

How to deal with AKP ?

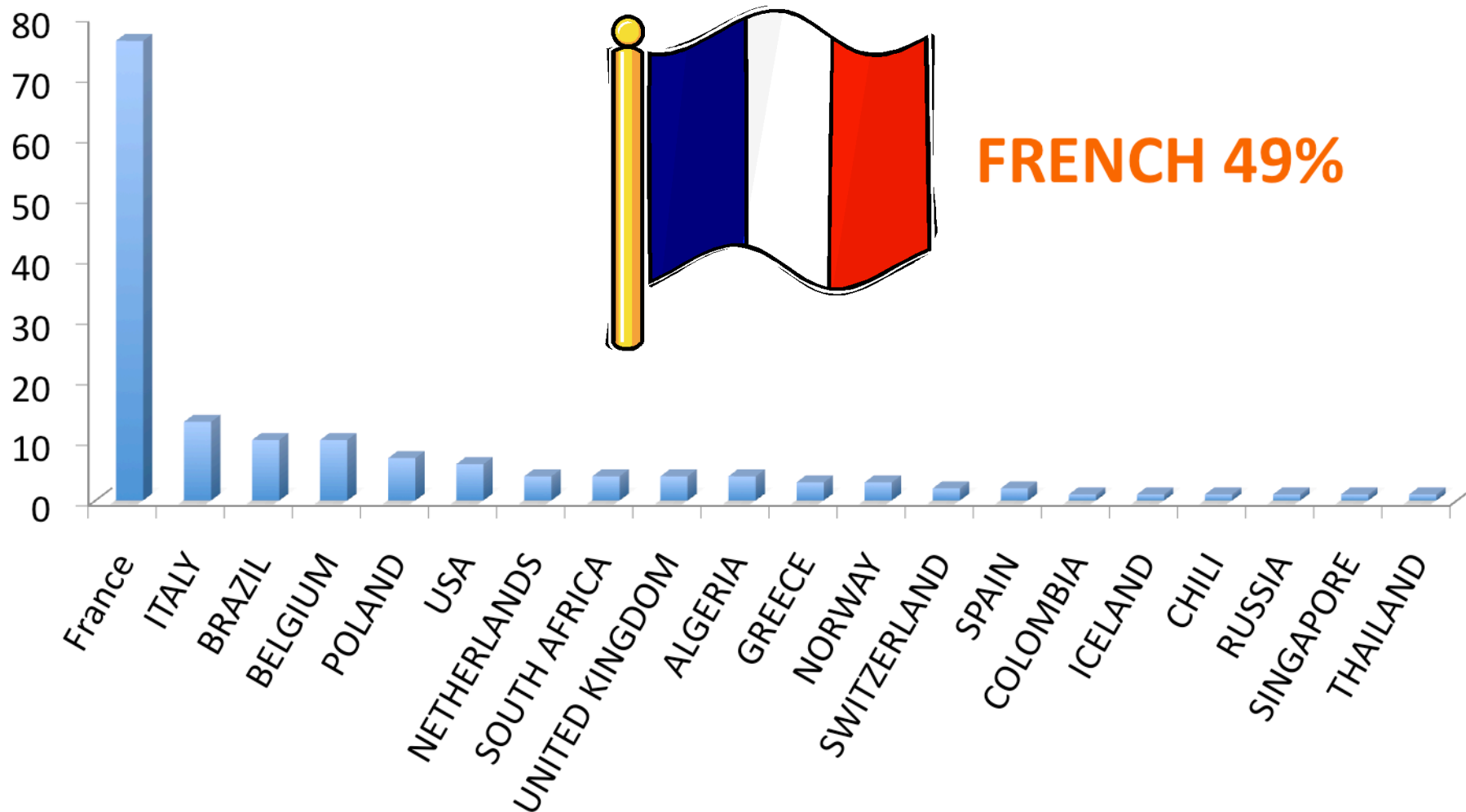
JDG 2012 - International Survey

- Built on a free web access service (sondageonline.com)
- 2 possible languages: French or English
- 12000 E-card at <http://www.sondageonline.com/live.php?code=b7d520a>.

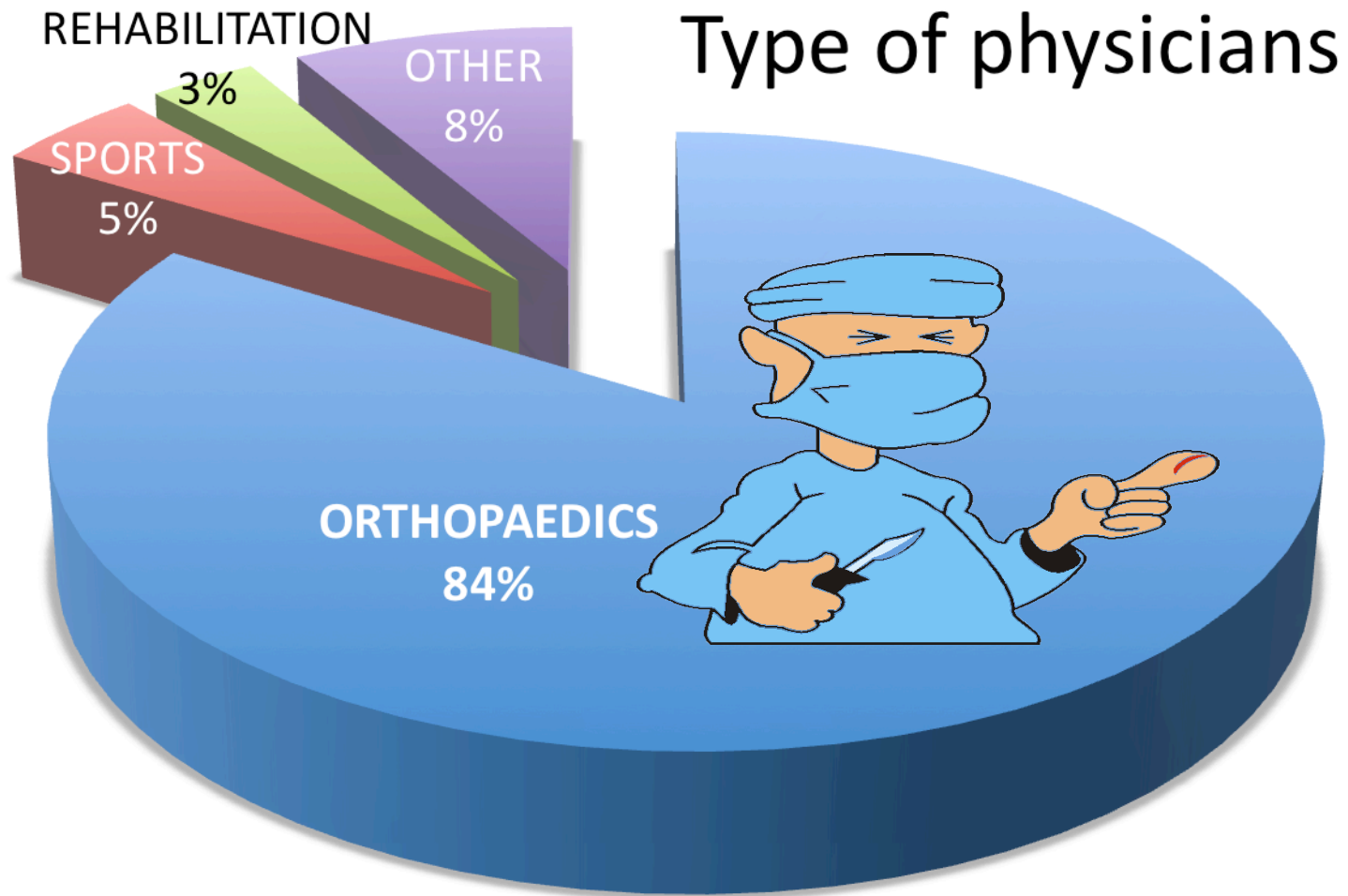


156 participants, 21 countries

NUMBER OF PARTICIPANTS



Who answered?

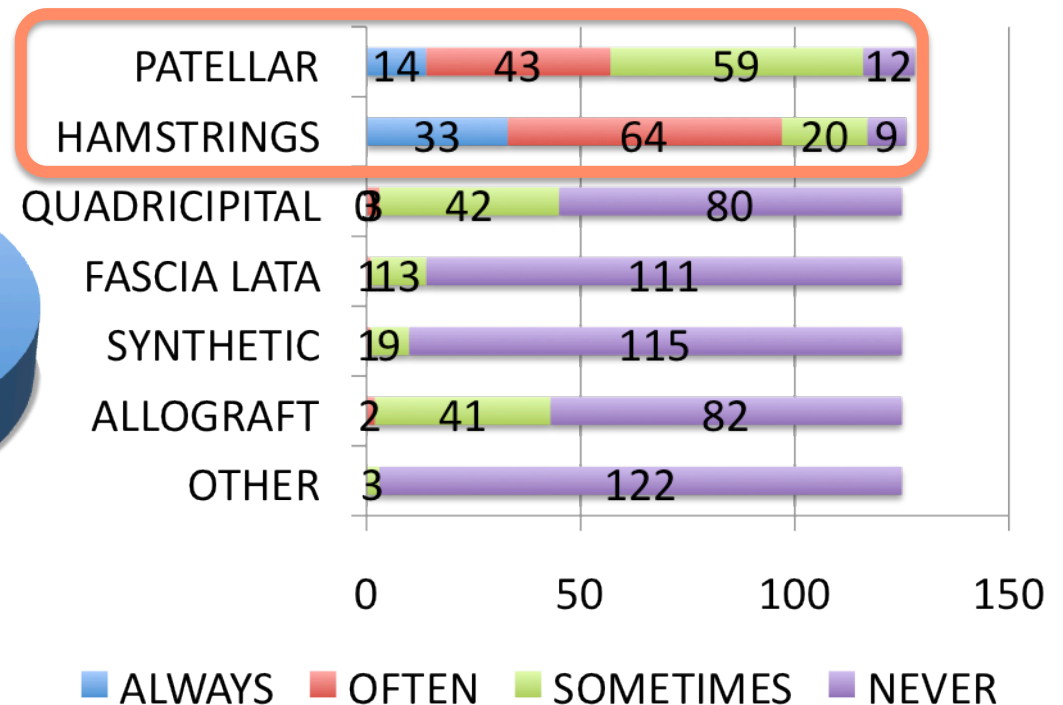


Orthopedic surgeons: n=127

- Number of ACL reconstruction / year / surgeon

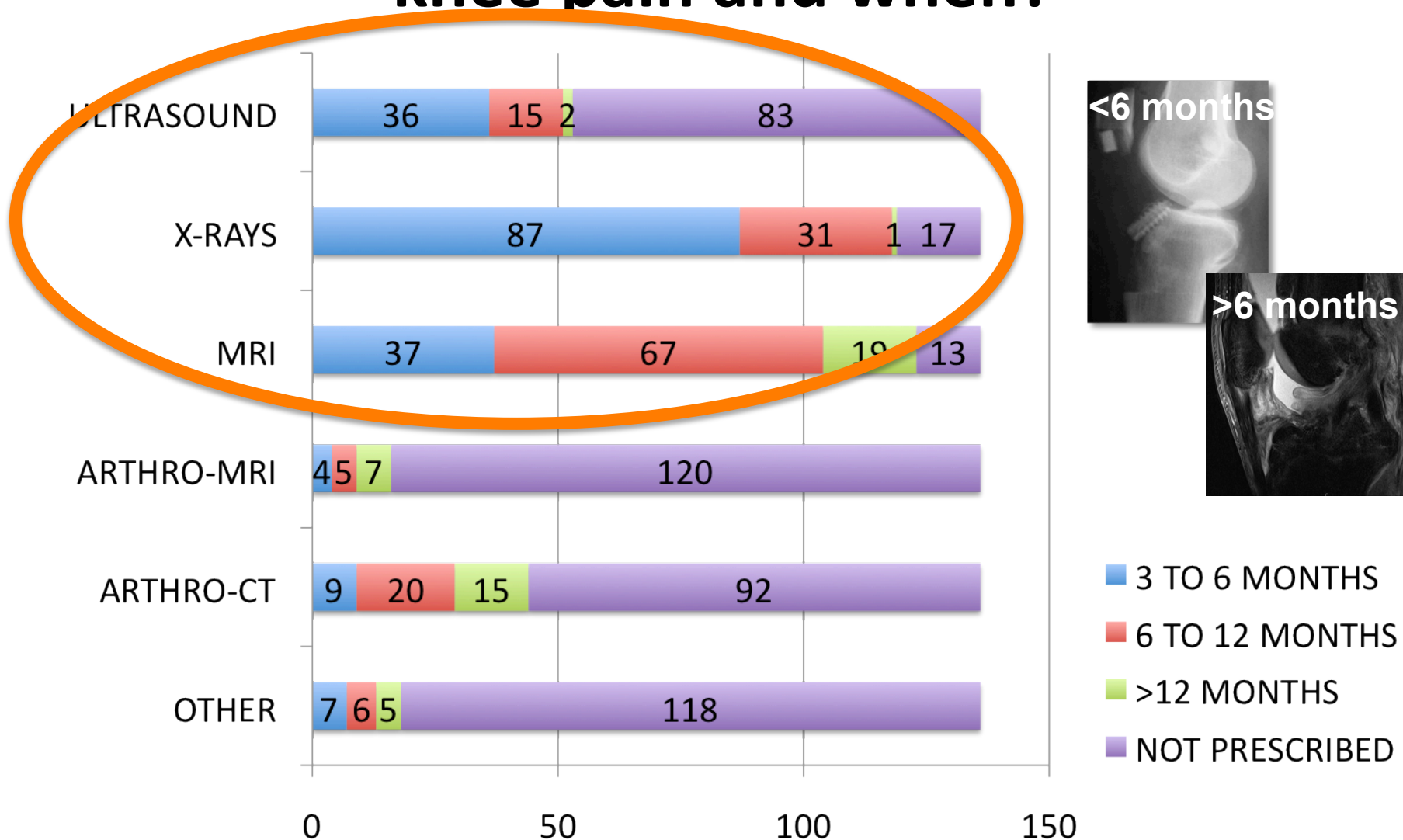


- Type of ACL reconstruction



Diagnosis

“What type of images do you routinely ask to diagnose the responsible cause of anterior knee pain and when?”



X-Rays

Patellofemoral dysplasia
(15% vs 3% in ACLs!)

Fractures

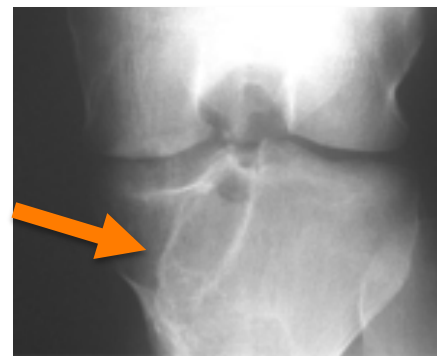
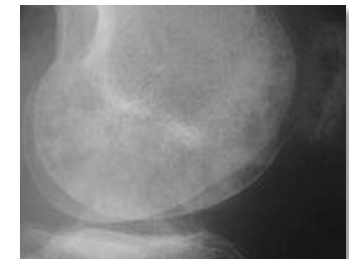
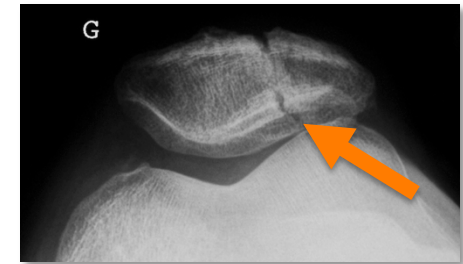
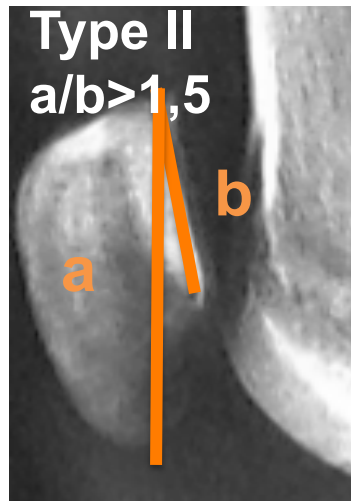
Osteopenia (RSD)

Patella bipartita

Tunnel widening

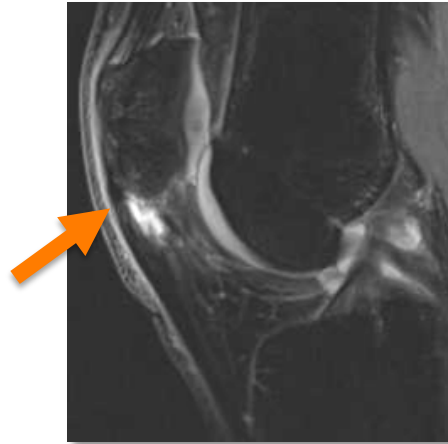
Tunnels malpositionning

Type II Patella (Grelsamer)



MRI: Patellofemoral compartment

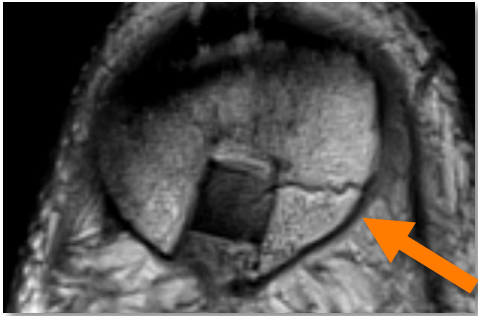
Tendinitis



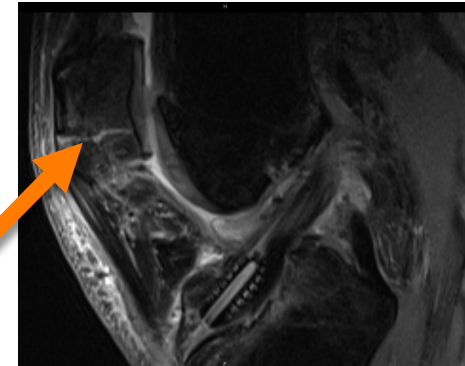
Cyclop syndrom



MRI: Patellofemoral compartment



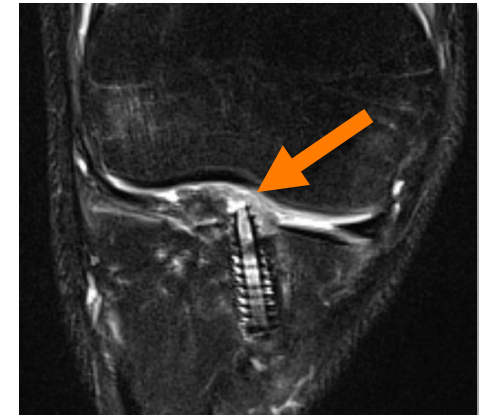
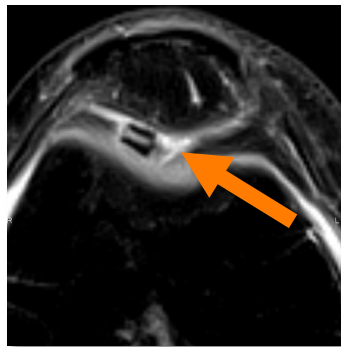
Fracture



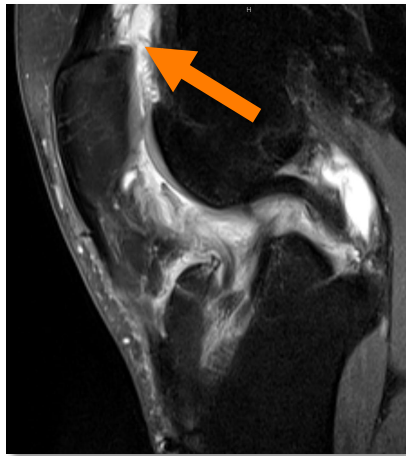
Hardware impingement



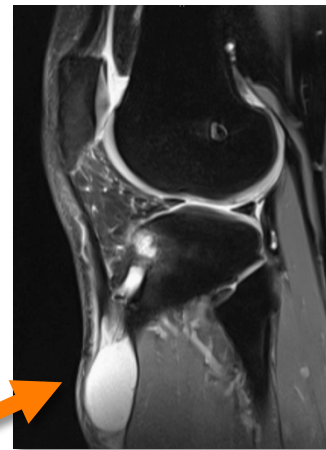
Hardware migration



MRI: Patellofemoral compartment

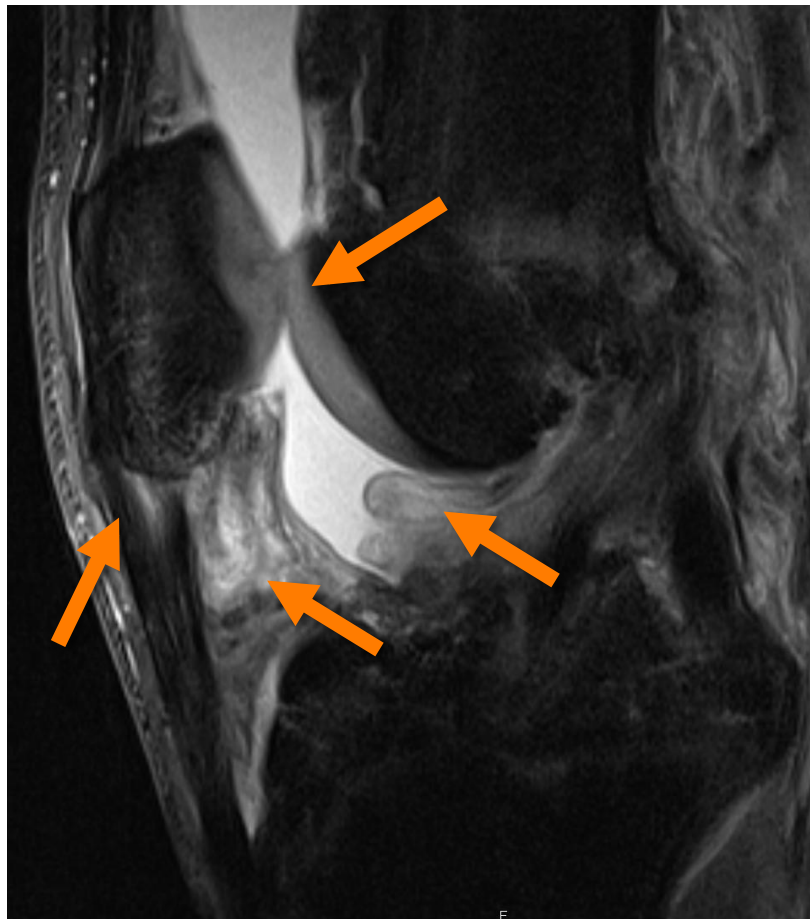


Synovitis
Hoffa syndrome
Cartilage edema
Bone bruise
Ganglion cyst



MRI: Patellofemoral compartment

Arthrofibrosis

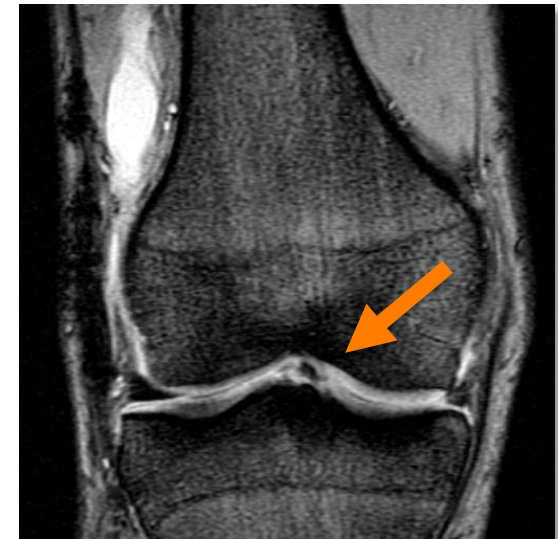


MRI Tibio femoral compartment

Cartilage

Menisci

Bone bruise



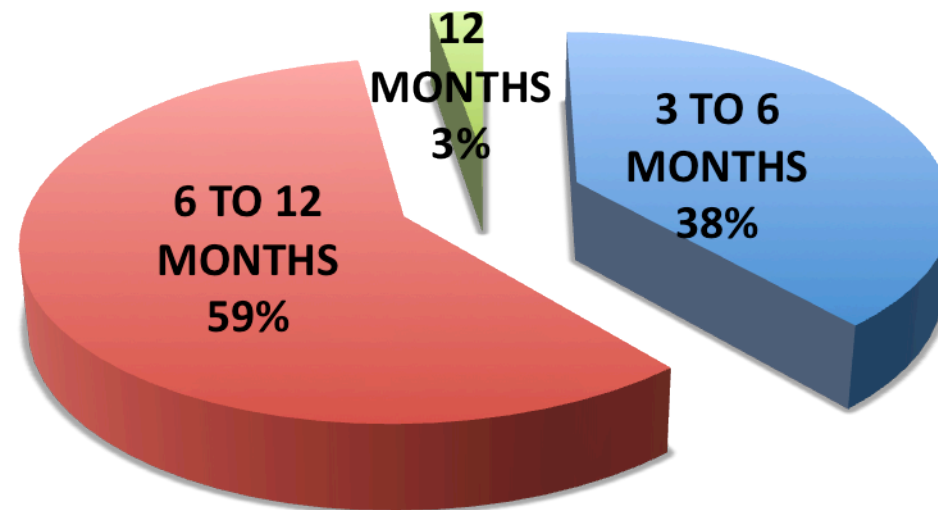
Isokinetic evaluation

- “Do you use isokinetic evaluation for anterior knee pain after ACL reconstruction?”

ALWAYS	OFTEN	SOMETIMES	NEVER	NO ACCESS
19	19	40	31	27
= 57%				20%



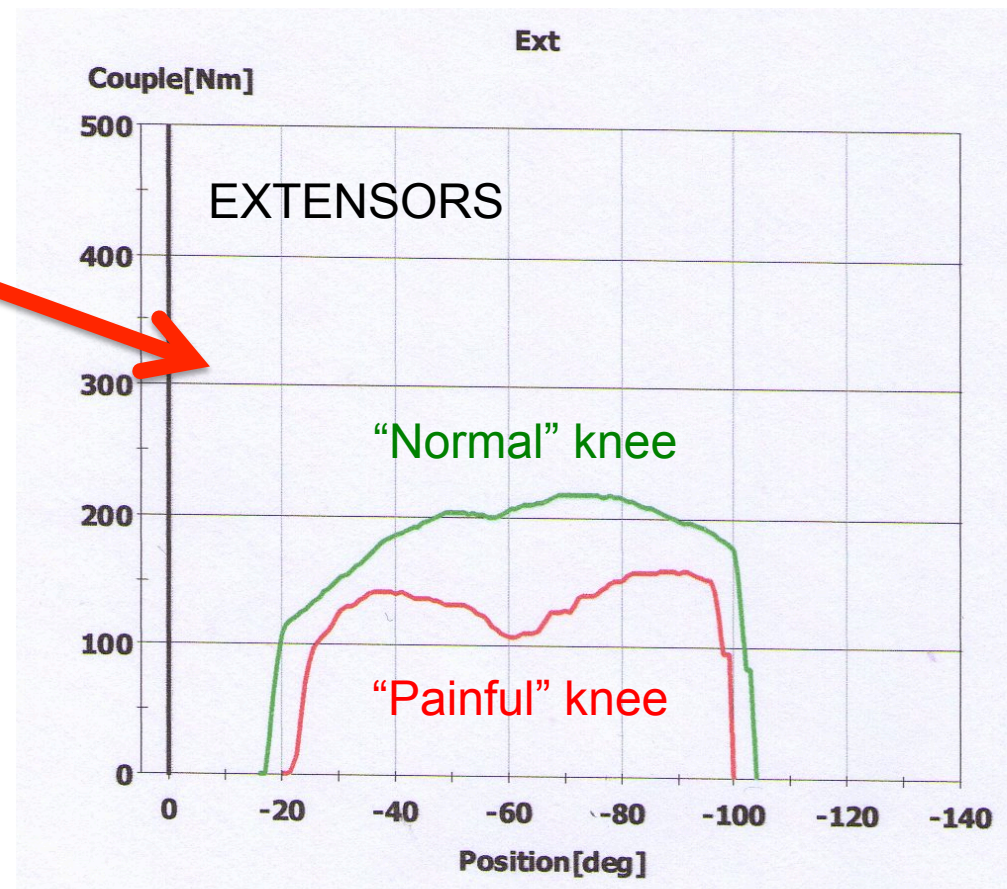
- “When?”



Isokinetic evaluation

Extensor deficit

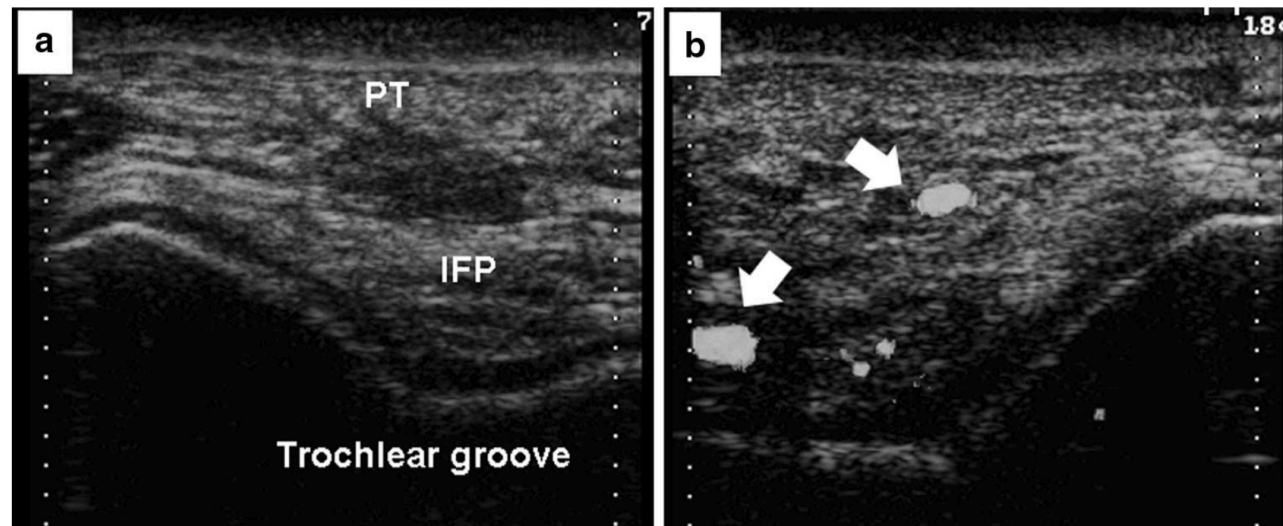
Typical aspect of the curve



Quadriceps torque & Increased blood flow in Infrapatellar Fat Pad

Identified as independent factors associated with AKP 6 months after ACL-R with HT

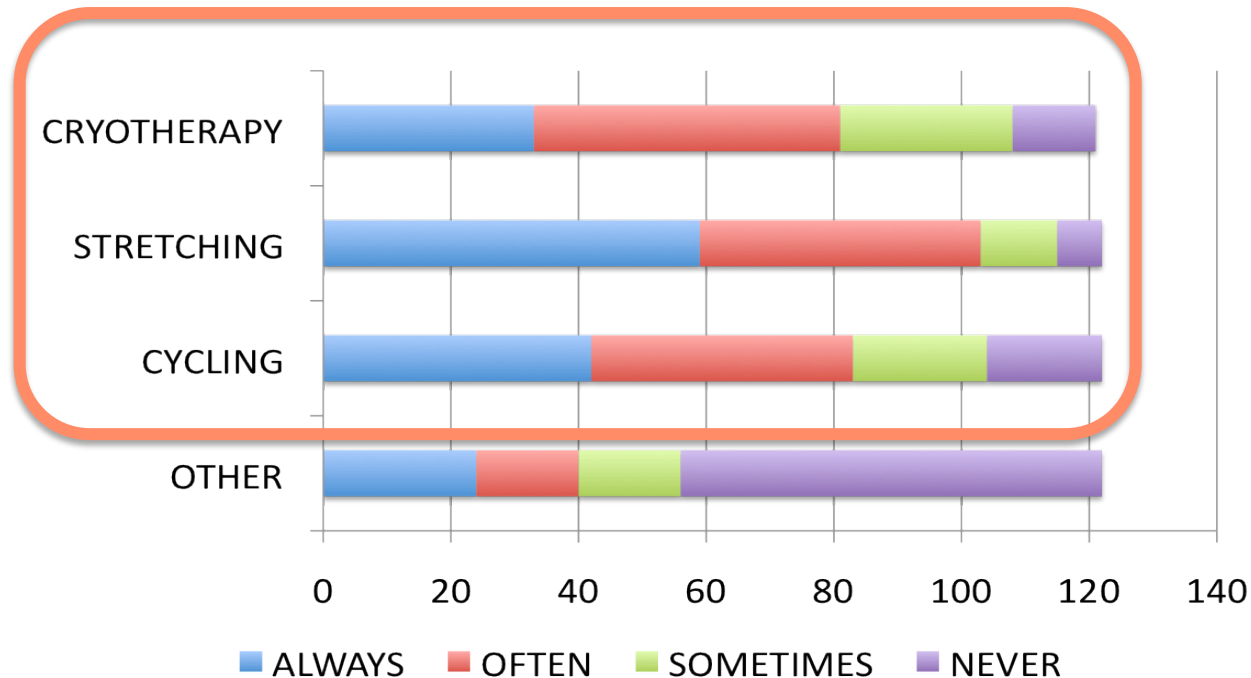
Importance of US & Isokinetic evaluation



Kanamoto *et al.* KSSTA 2015

Treatment

“Do you use a self-rehabilitation protocol to treat pain after ACL reconstruction?”

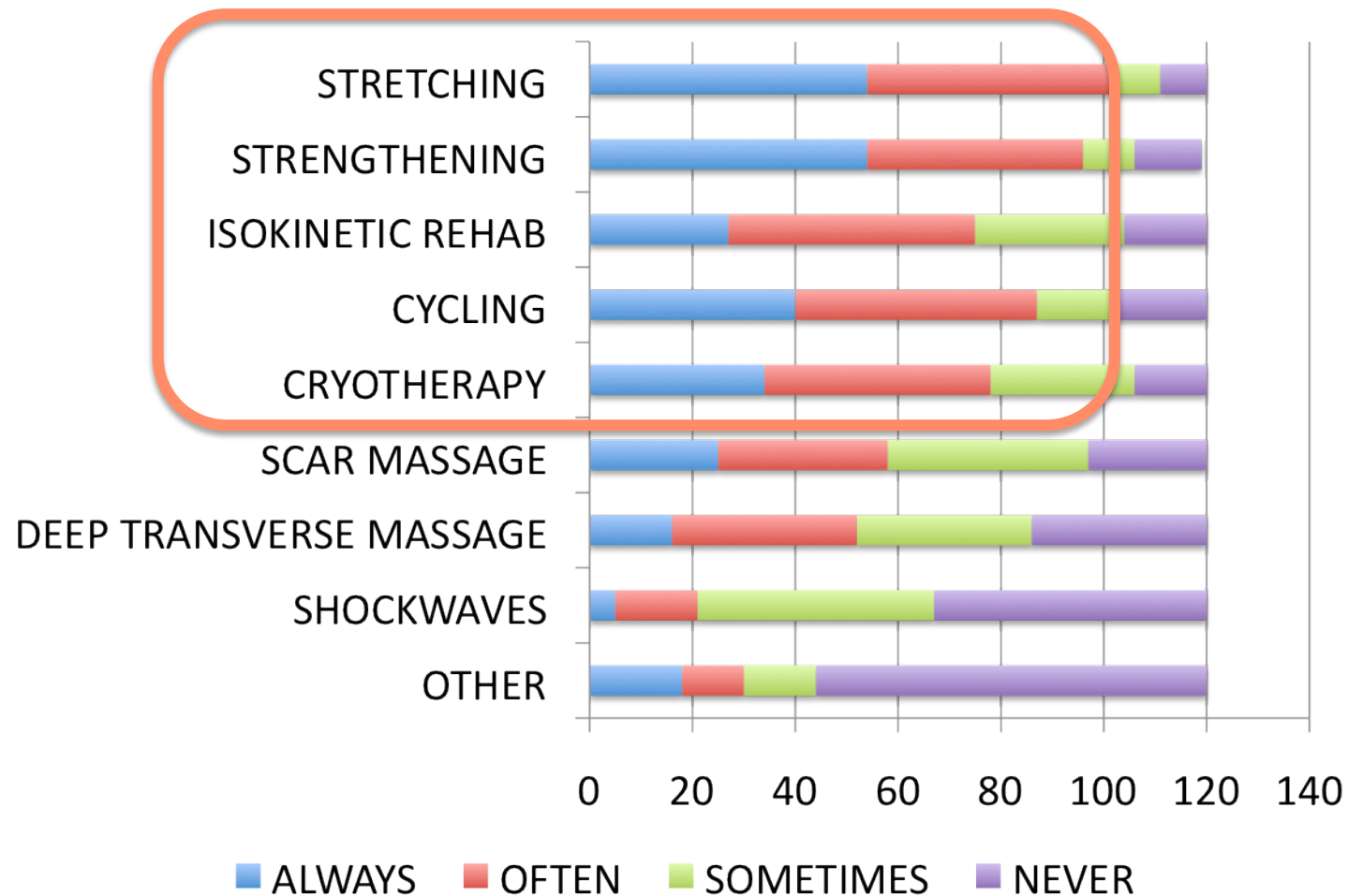


Preo- and immediate post-op. Quad function and knee extension recovery is essential to prevent AKP

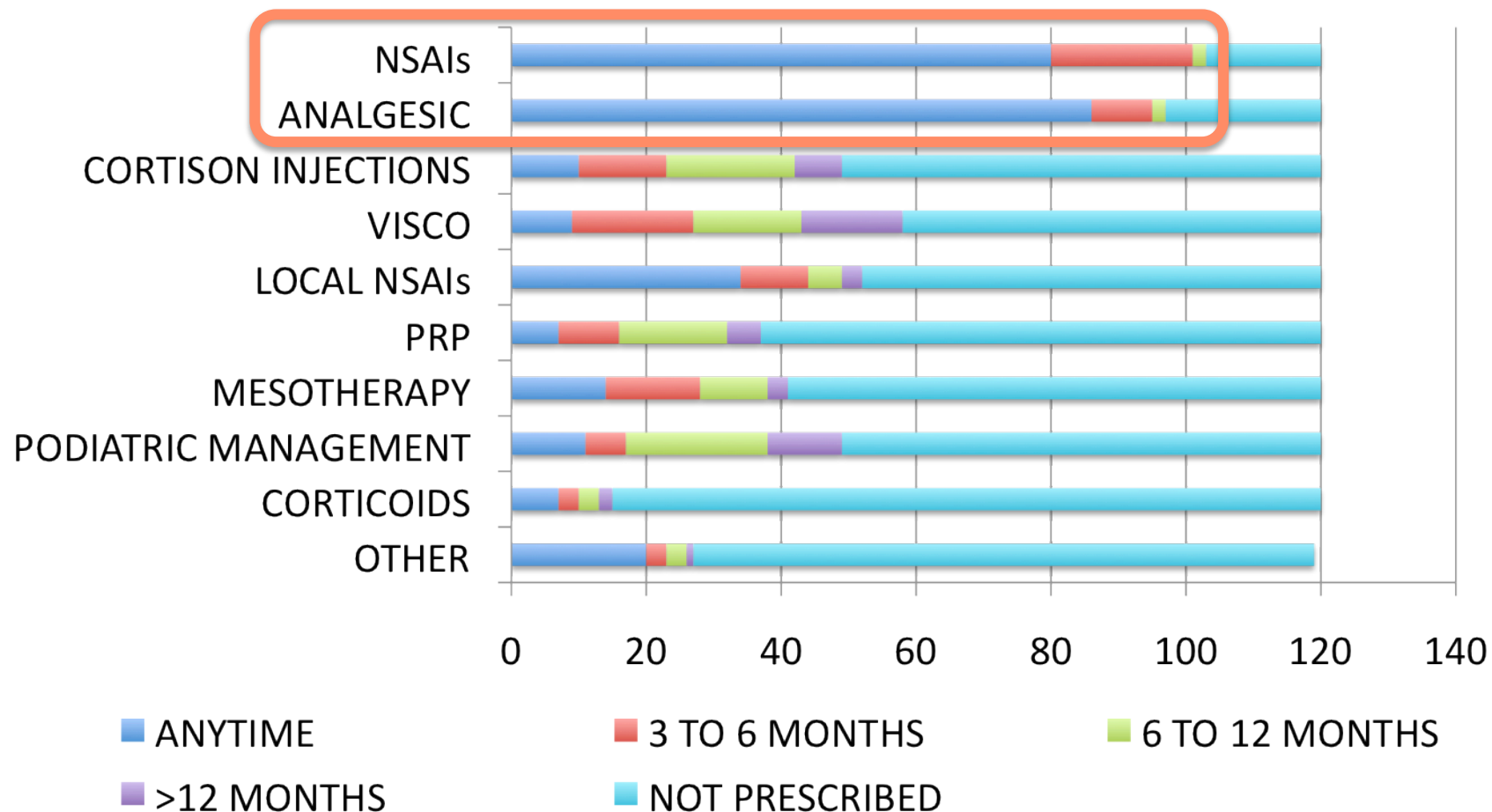
Niki et al. KSSTA 2012



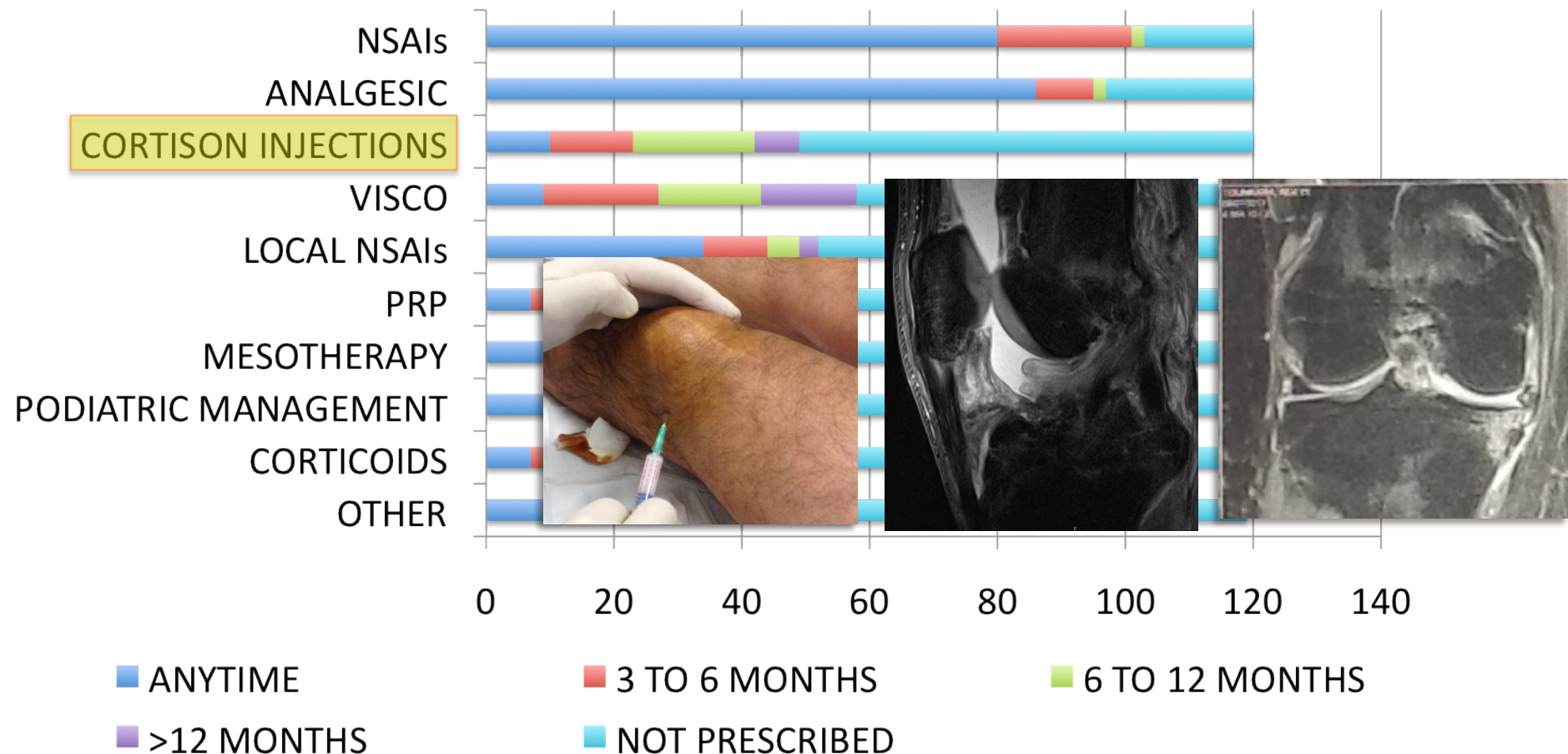
“Do you ask for supervised rehabilitation by a physiotherapist for anterior knee pain after ACL reconstruction?”



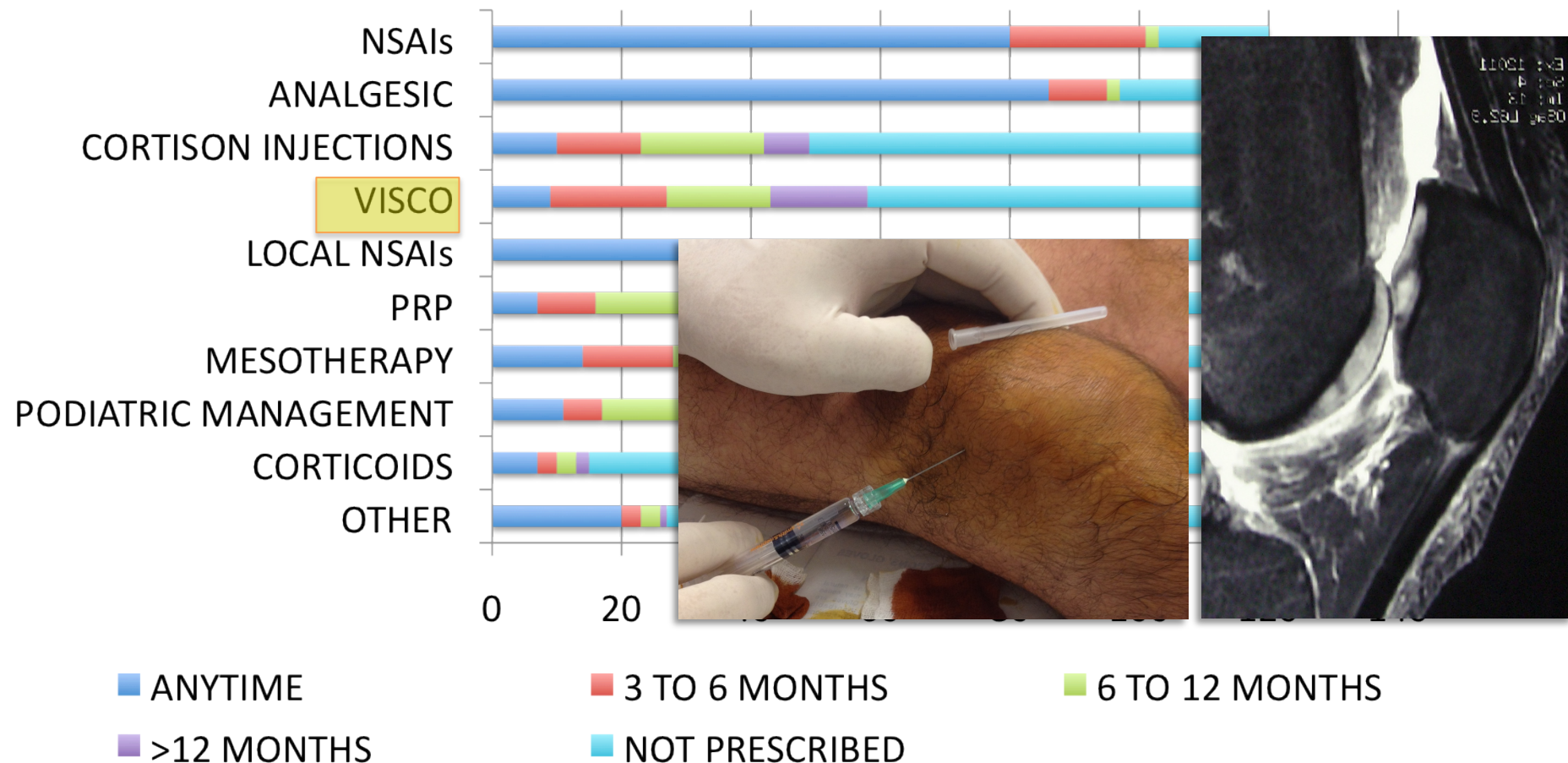
“What kind of medical treatment do you use for anterior knee pain after ACL reconstruction?”



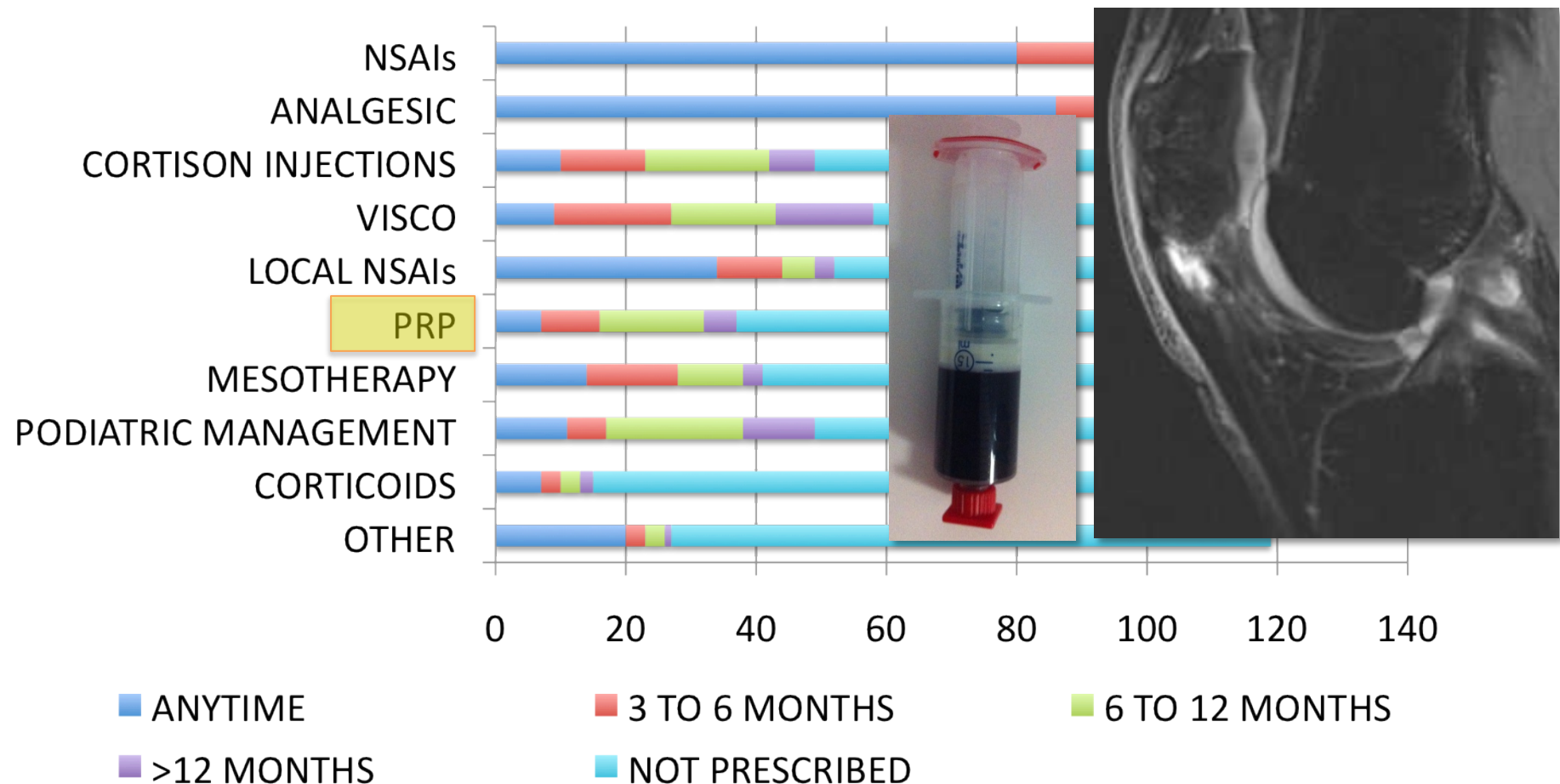
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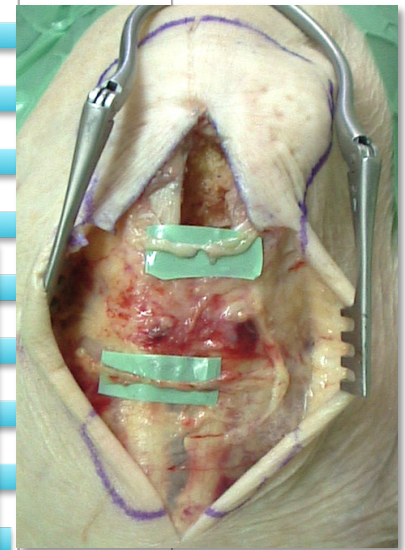
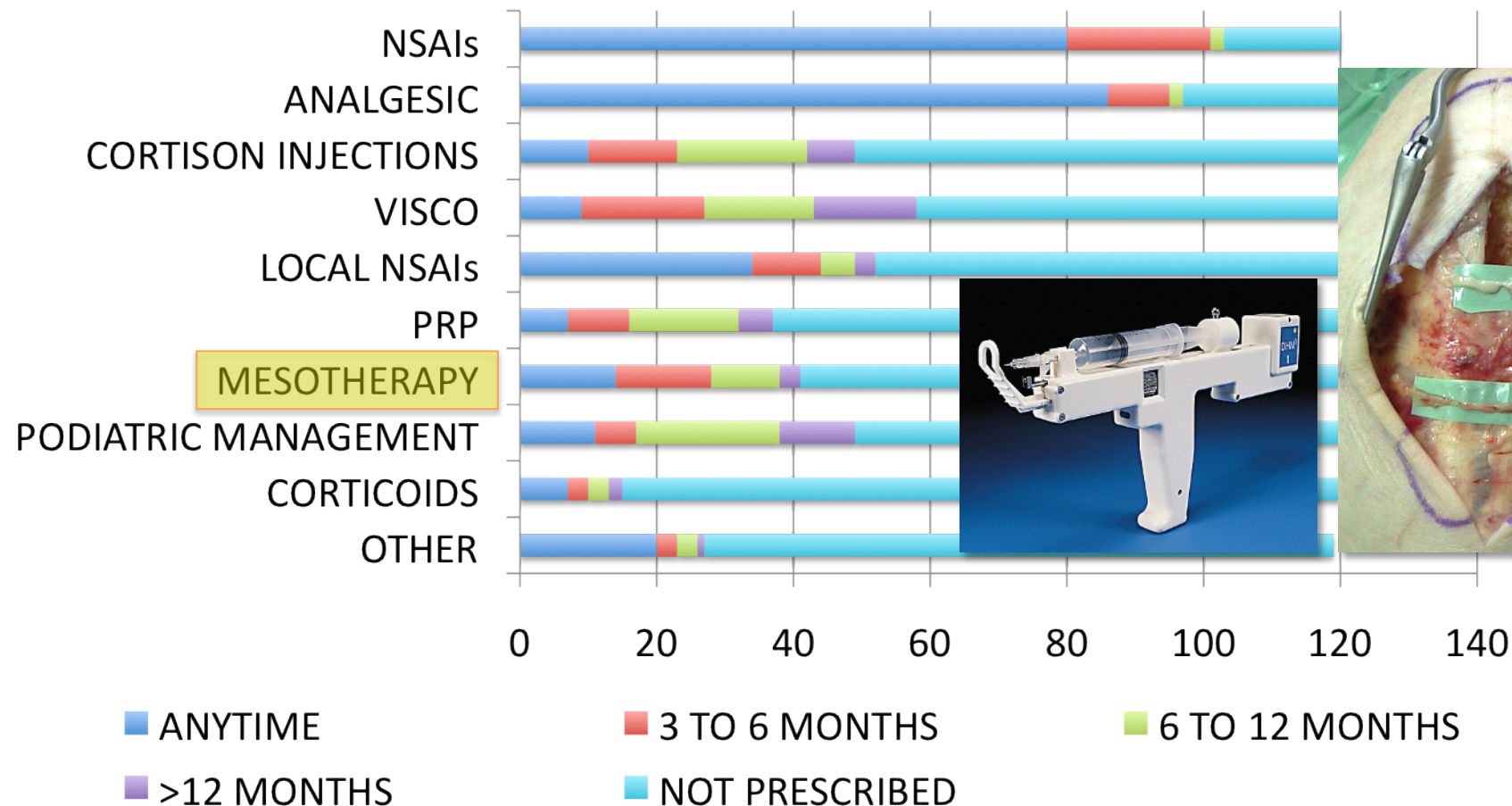
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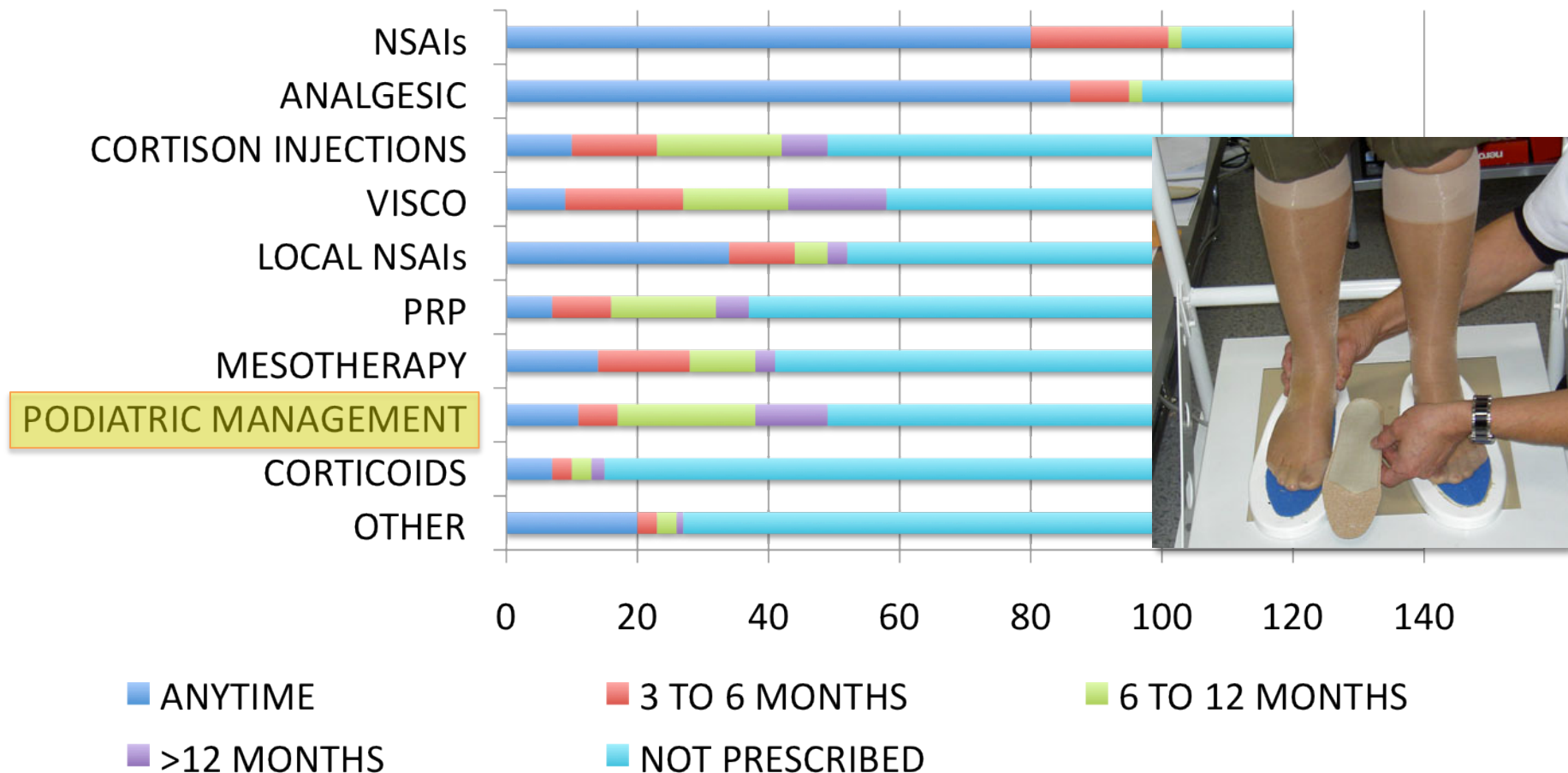
“What kind of medical treatment do you use for anterior knee pain after ACL reconstruction?”



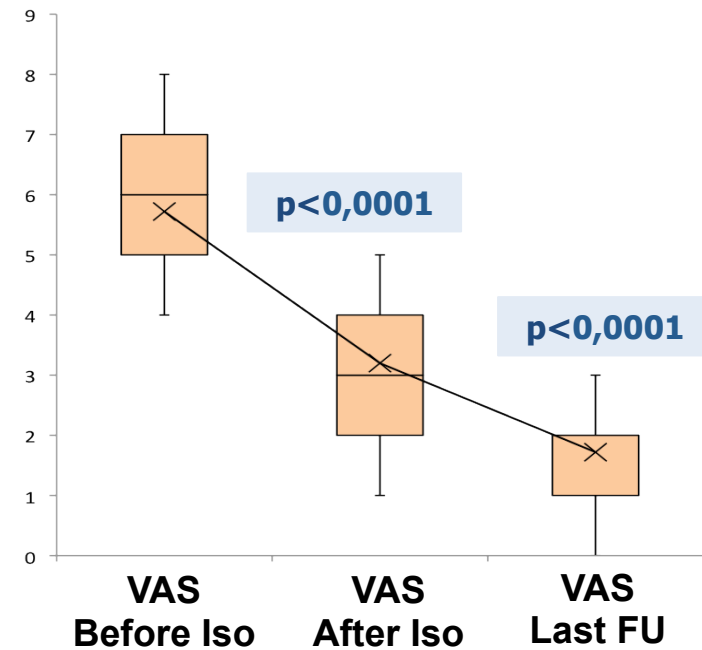
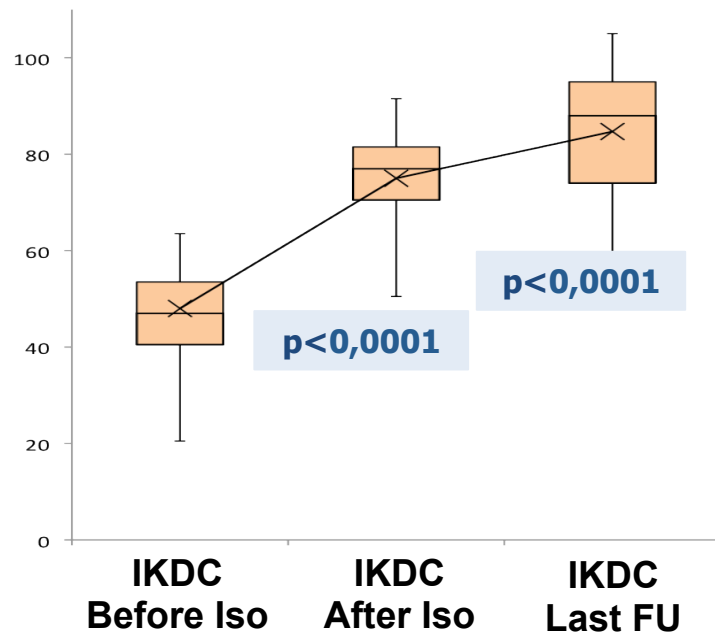
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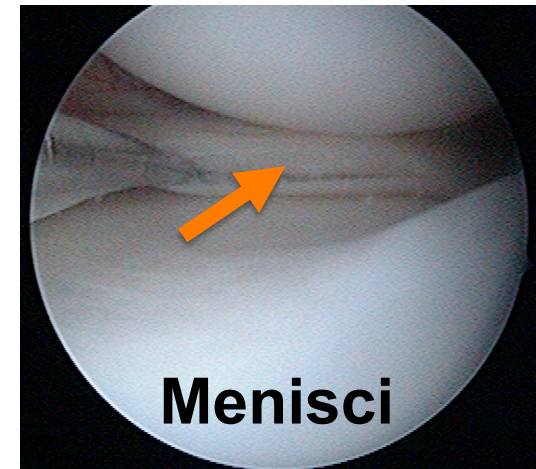
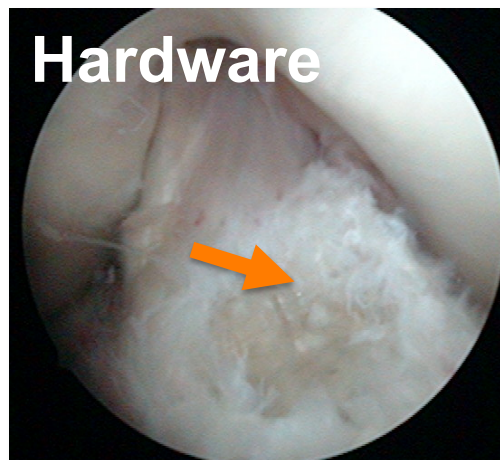
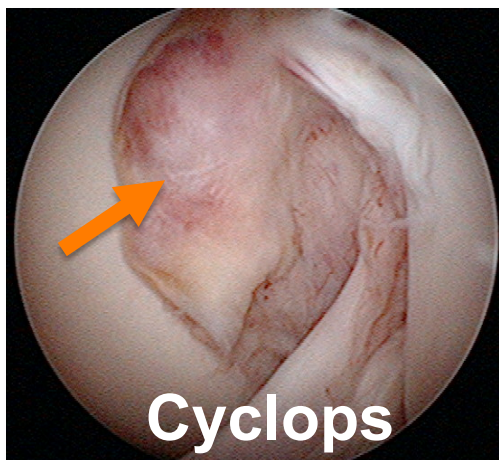
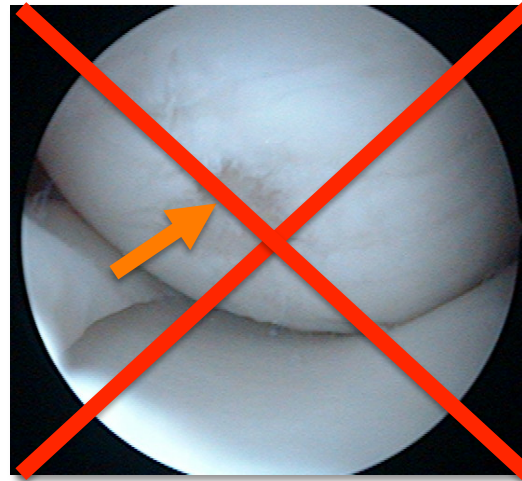
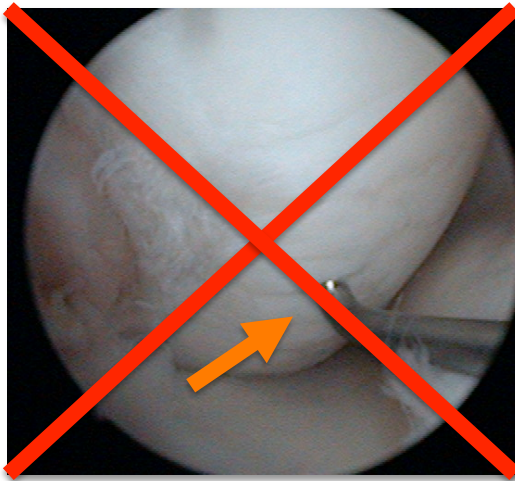
Isokinetic rehabilitation



Isokinetic = catalyzer ?

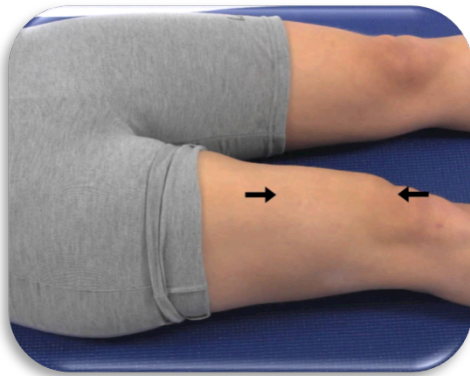
Gadea *et al.* Eur J Orthop Surg Traumatol 2013

Arthroscopy



Take Home Message AKP

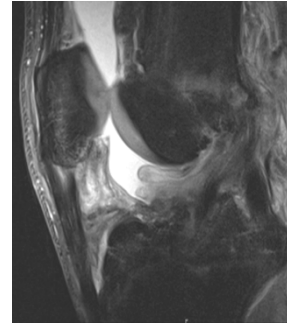
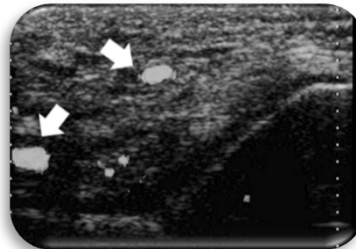
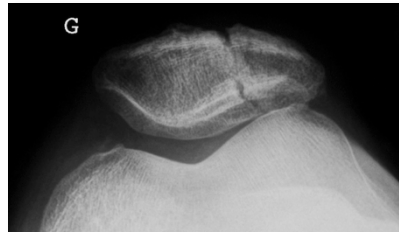
Don't get fooled by your patient appearance!



- Prevention:
- Quad function
 - Preserve the menisci
 - Appropriate ACL-R technique



Analyze the disorder...



1. Plain X-
Rays- US

2. MRI

3. Isokinetic
evaluation

Structural

- trochlear Dysplasia (15%!)
- Patellar Tendinitis
- Cyclops...

Functional



... to choose the
appropriate treatment

Aknowlgement



Achilleas Boutsiadis, M.D.

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Thank you!

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