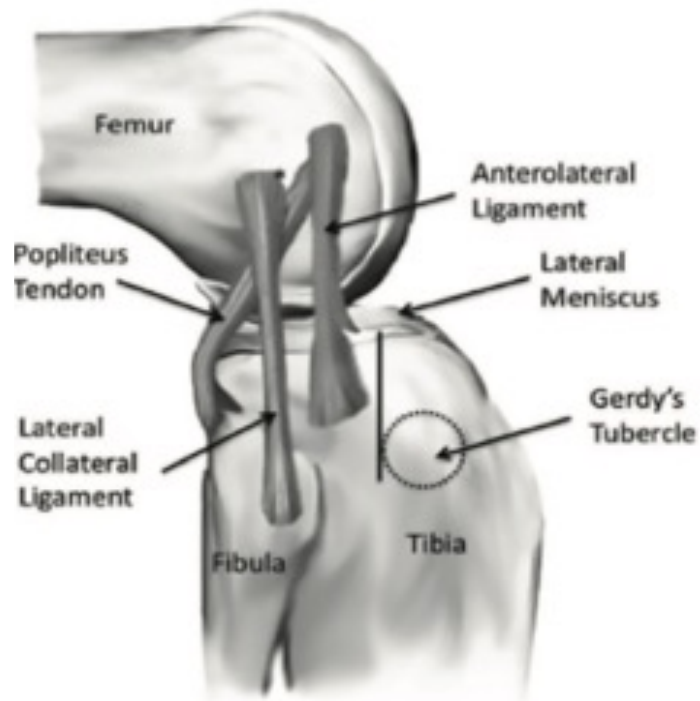


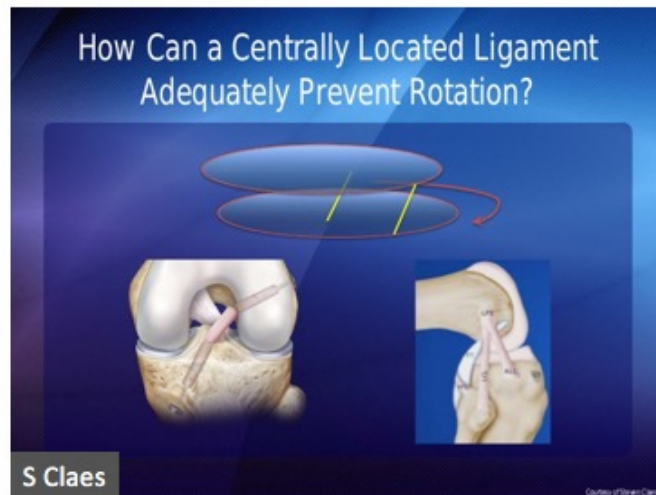
ANTEROLATERAL LAXITY OF THE KNEE



F-X GUNEPIN



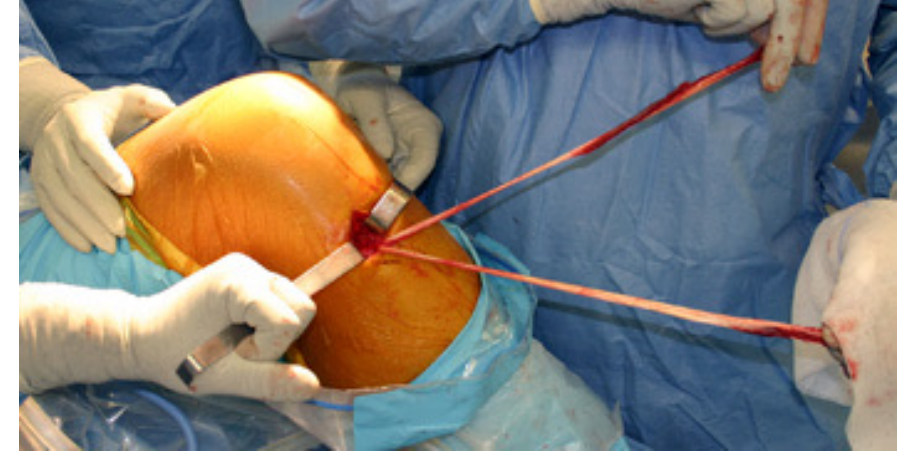
ANTEROPOSTERIOR LAXITY \neq ANETROLATERAL LAXITY



Comment une structure centrale peut contrôler la rotation?

LATERAL LAXITY \neq ANETROLATERAL LAXITY





SPECIFIC TREATMENT?

Am J Sports Med. 2017 Jun;45(7):1547-1557. doi: 10.1177/0363546516686057. Epub 2017 Feb 2.

Anterolateral Ligament Reconstruction Is Associated With Significantly Reduced ACL Graft Rupture Rates at a Minimum Follow-up of 2 Years: A Prospective Comparative Study of 502 Patients From the SANTI Study Group.

Sonnery-Cottet B¹, Saithna A^{2,3}, Cavalier M¹, Kajetanek C¹, Temponi EF⁴, Daggett M⁵, Helito CP⁶, Thaumat M¹.

2.5 TIMES FEWER BTB RECURRENCES
3.1 TIMES LESS THAN ISCHIO

A REAL INTEREST

Knee rotary control =
ACL + anterolateral peripheral formations...



J Hugston

“Anterolateral Rotatory Instability is caused by a tear of the middle one third of the lateral capsular ligament but it may be accentuated by other tears, principally a tear of the anterior cruciate! “



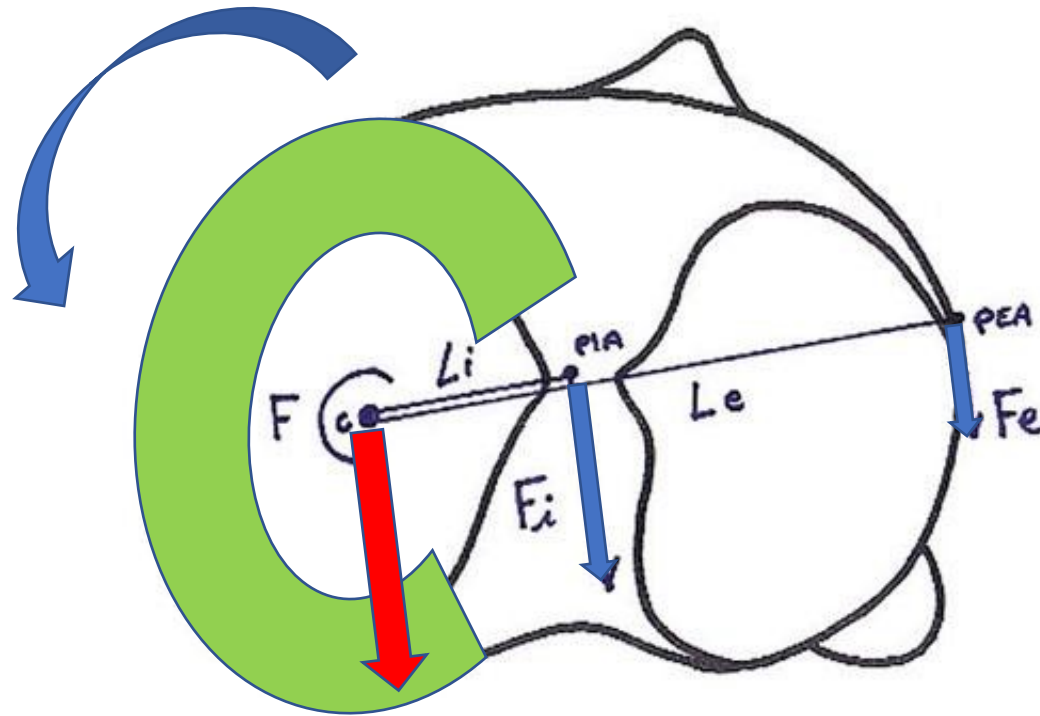
A. Amis

“extra-articular structures are the first barrier to tibial rotational laxity and are usually damaged during ACL injuries“

Interest in lateral tenodeses for rotary control of the knee

Control of the internal Rotation ACL+ALL + posterior part of the Medial Meniscus

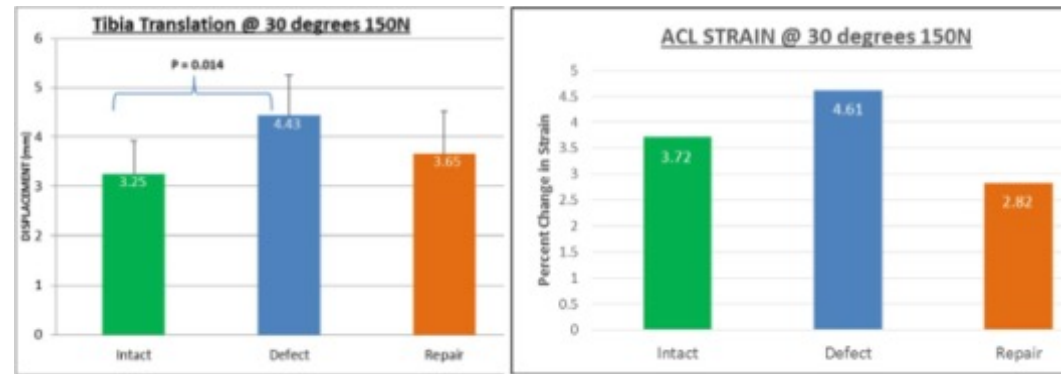
Torque = Force applied x distance from the center of rotation (lever arm)



P. Imbert. Contrôle de la stabilité rotatoire et ligamentoplastie du lca.
Maîtrise Orthopédique n°158 - novembre 2006

ACL + MM

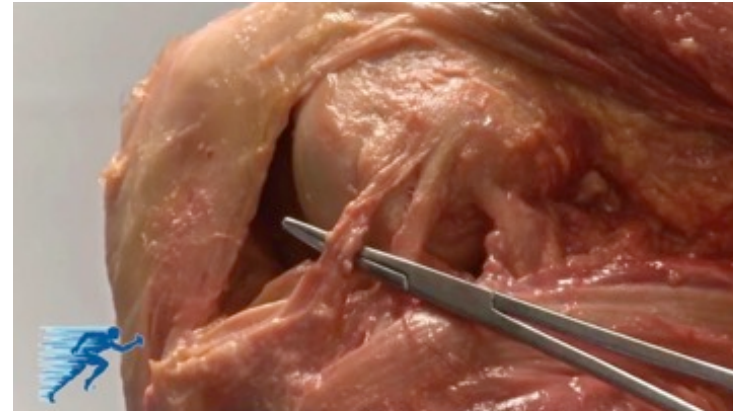
Important biomechanical synergy



A repaired or intact posterior segment of medial meniscus reduces stress on the ACL

Biomechanical Implications of Posteromedial Meniscocapsular separation on ACL strain and Tibia translation
Cory Edgar, Robert Arciero et al. AAOS 2015

Anatomy of the Anterolateral ligament of the Knee



Claes, S., Vereecke, E., Maes, M., Victor, J., Verdonk, P. and Bellemans, J., Anatomy of the anterolateral ligament of the knee. Journal of Anatomy, (2013), 223: 321–328.

New ligament?

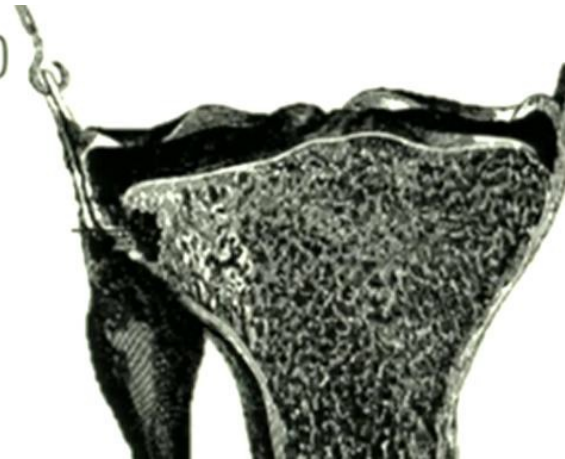
Not exactly Paul Segond 1851-1912

Describes the “Segond fracture” which occurs by tearing of the anterolateral edge of the tibial plateau and is generally accompanied by a rupture of the anterior cruciate ligament



► Paul Segond (1851 – 1912)

Ce fait est facile à constater en examinant un genou dépouillé de son enveloppe cutanée. Il existe en ce point du surtout fibreuse articulaire une bande fibreuse, nacrée, résistante, qui, dans l'exagération du mouvement de rotation en dedans, subit toujours un degré de lésion extrême. Ce point de physiologie nous intéresse tout particulièrement, car il peut nous fournir des données importantes sur la production d'une lésion spéciale de la tubérosité tibiale externe qui s'observe avec une certaine fréquence à la suite des mouvements forcés de rotation en dedans. Cette lésion



Philippe Segal, Émile Dehoux et Christophe Mensa, « La Fracture de Segond », dans Jacques Rodineau (dir.) et Gérard Saillant (dir.), Les Lésions isolées récentes du ligament croisé antérieur : Données actuelles, Paris, Masson, 1998, 381 p. (ISBN 2-225-83668-X et 978-2-225-83668-8), p. 52-55.

Muller W.
The knee.
New York: Springer Verlag; 1983.

Werner Müller



The Knee

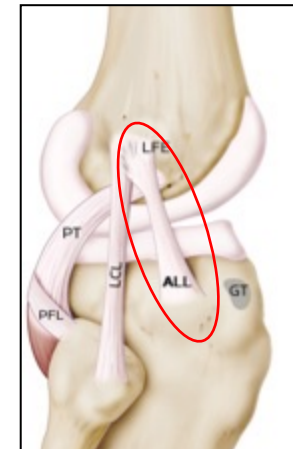
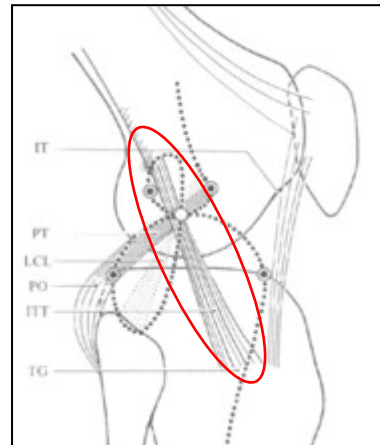
Form, Function, and Ligament
Reconstruction

Foreword by J. C. Hughston

Translated by T. C. Telger



Secondary Repair of the Periphery and Reconstruction of the Five Main Ligaments and Capsule	240
The Capsule	240
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Repair of the Lateral Femorotibial Ligamentous Attachment	250
Our Current Technique of Anterolateral Femorotibial Reconstruction (1979–1980)	253



Uses the term lateral femoro-tibial ligament

The anterolateral ligament of the human knee: an anatomic and histologic study

Jean-Philippe Vincent · Robert A. Magnussen · Ferittu Gezmez ·
Arnaud Uguen · Matthias Jacobi · Florent Weppe · Ma'ad F. Al-Saati ·
Sébastien Lustig · Guillaume Demey · Elvire Servien · Philippe Neyret

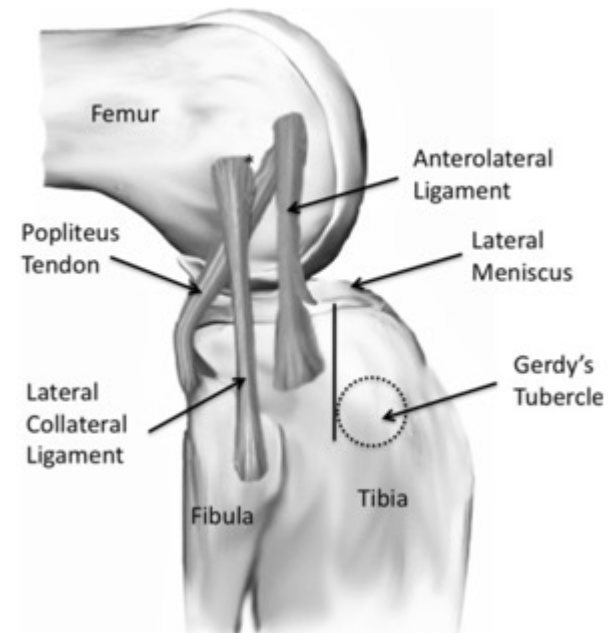
Received: 18 January 2011 / Accepted: 9 June 2011
© Springer-Verlag 2011

Origin close to the insertion of the
popliteus tendon

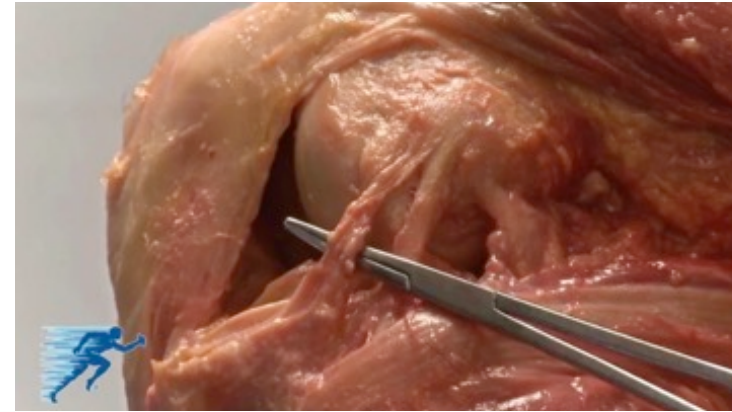
Meniscal attachments

Tibial plateau termination behind the
Gerdy

..



Anatomy of the Anterolateral ligament of the Knee



*Claes, S., Vereecke, E., Maes, M., Victor, J., Verdonk, P. and Bellemans, J.,
Anatomy of the anterolateral ligament of the knee. Journal of Anatomy,
(2013), 223: 321–328.*

Not a new ligament but a new approach

BASES BIOMÉCANIQUES

“Adding the iliotibial band ***tenodesis*** to an existing standardized intraarticular reconstruction significantly ***decreased*** the ***force in the ACL*** composite graft by an average of ***43%***”

Engelbrechtsen L.; Lew W.D.; Lewis J.L.; Hunter R.E., 1990: The effect of an iliotibial tenodesis on intraarticular graft forces and knee joint motion. American Journal Of Sports Medicine. 18(2): 169-176

Interest in an external procedure

WHAT WAY?

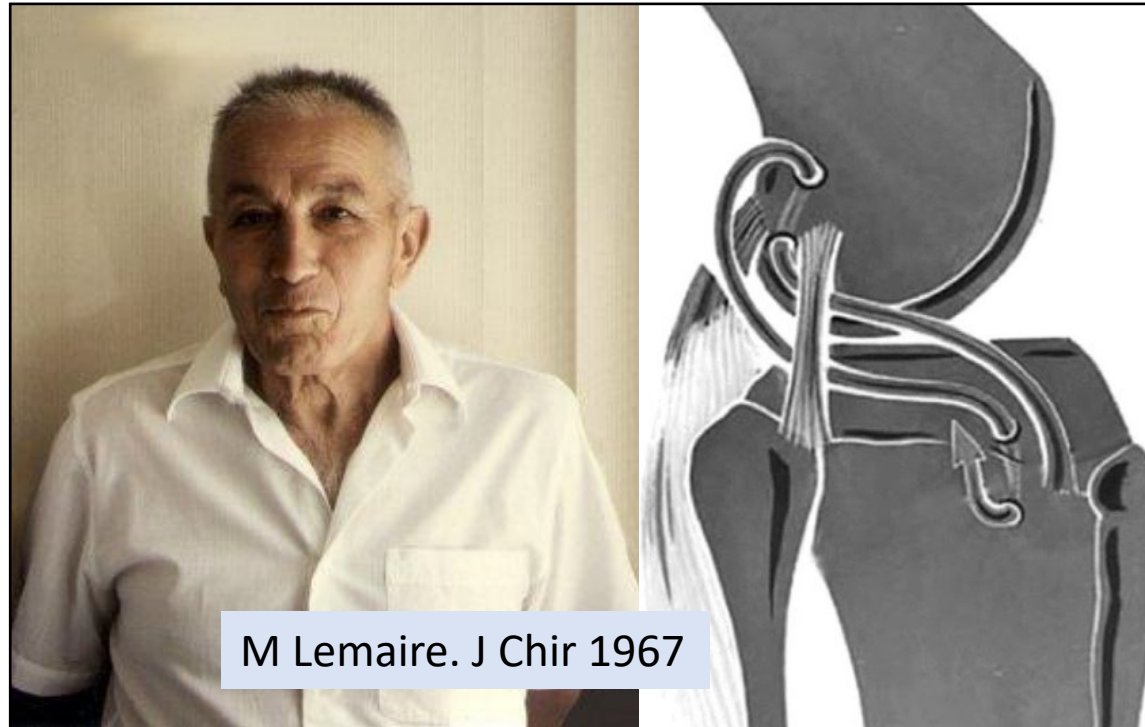
- Add biomechanical reinforcement
→ Lemaire effect

Or

- Replace an injured anatomical structure
→ Reconstruct the Antero-Lateral Ligament



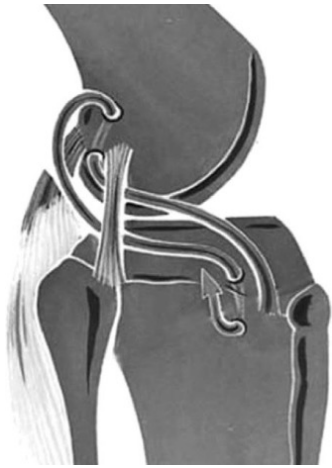
PRECURSOR FOR INDEPENDENT TENODESIS



« Je refais à l'extérieur de l'articulation le croisé que je ne sais pas refaire dans l'articulation »

TECHNIQUES

- Independent tenodeses (from the ACL reconstruction)



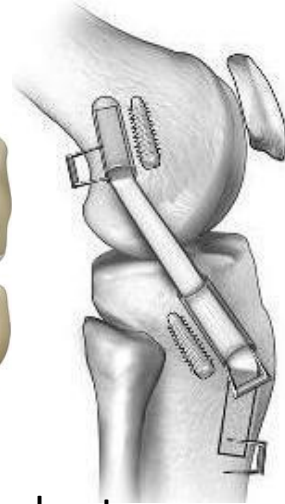
Lemaire



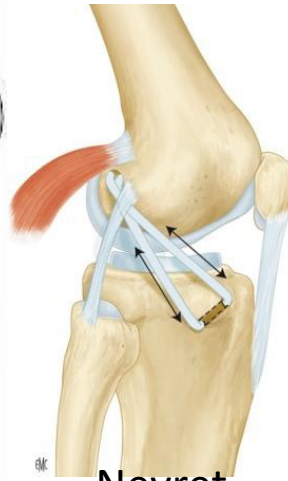
Chassaing



JC Imbert



Neyret



P Imbert



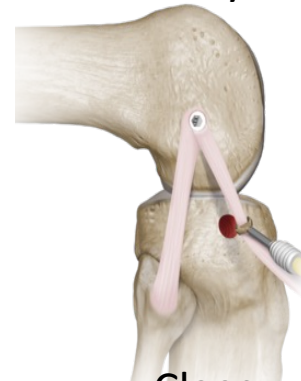
Christel



Moyen



Claes



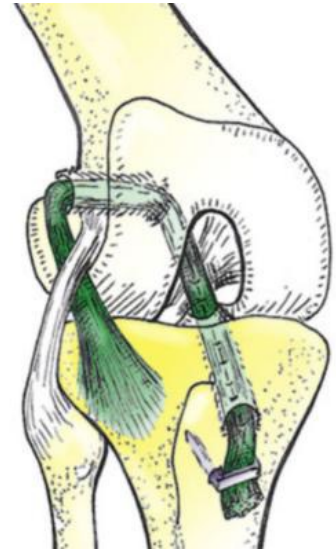
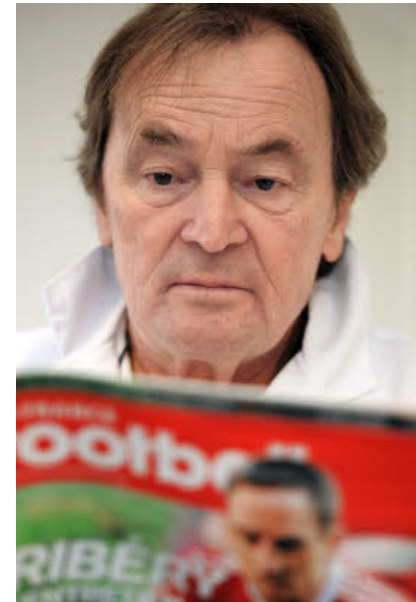
Courtesy C Lutz

PRECURSOR FOR DEPENDENT TENODESIS

MacIntosh → Jaeger

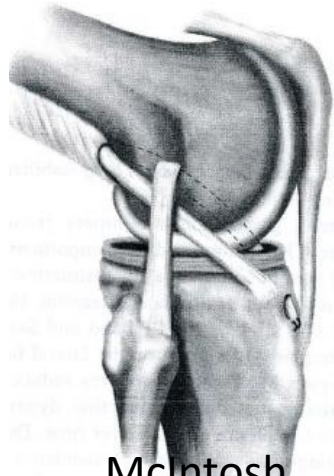
Amirault JD, Cameron JC, MacIntosh DL, Marks P. Chronic anterior cruciate ligament deficiency. Long-term results of MacIntosh's lateral substitution reconstruction. J Bone Joint Surg Br 1988 ; 70 : 622–4.

Jørgensen U, Bak K, Ekstrand J, Scavenius M. Reconstruction of the anterior cruciate ligament with the iliotibial band autograft in patients with chronic knee instability. Knee Surg Sports Traumatol Arthrosc Off J ESSKA 2001 ; 9 : 137–45.

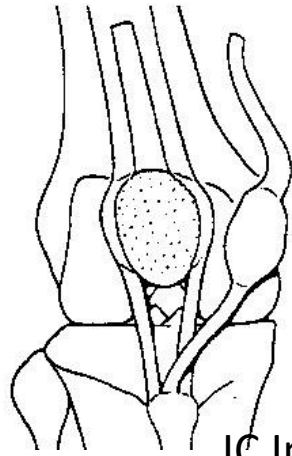


TECHNIQUES

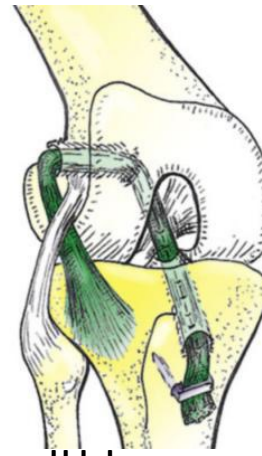
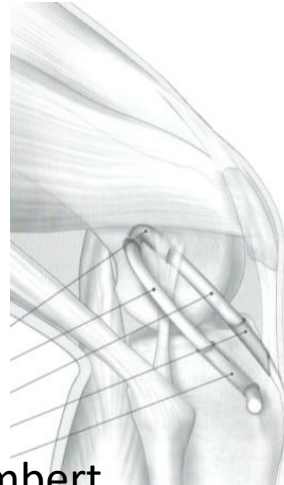
- Mixed plasties (continuous tenodesis with PIA)



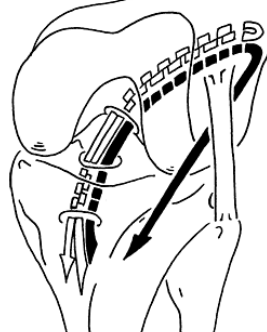
McIntosh



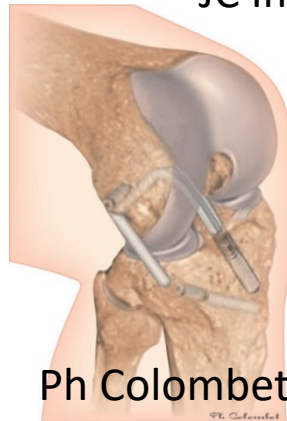
J.C. Imbert



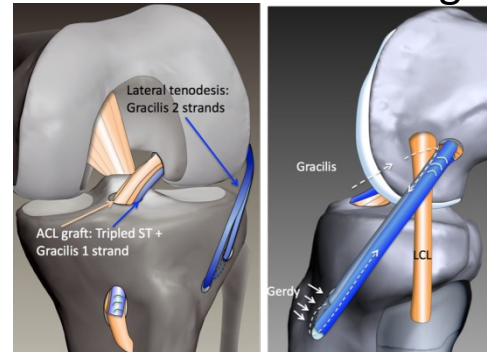
J.L. Lerat



C. Buscarey



Ph Colombet



B Sonnery Cottet

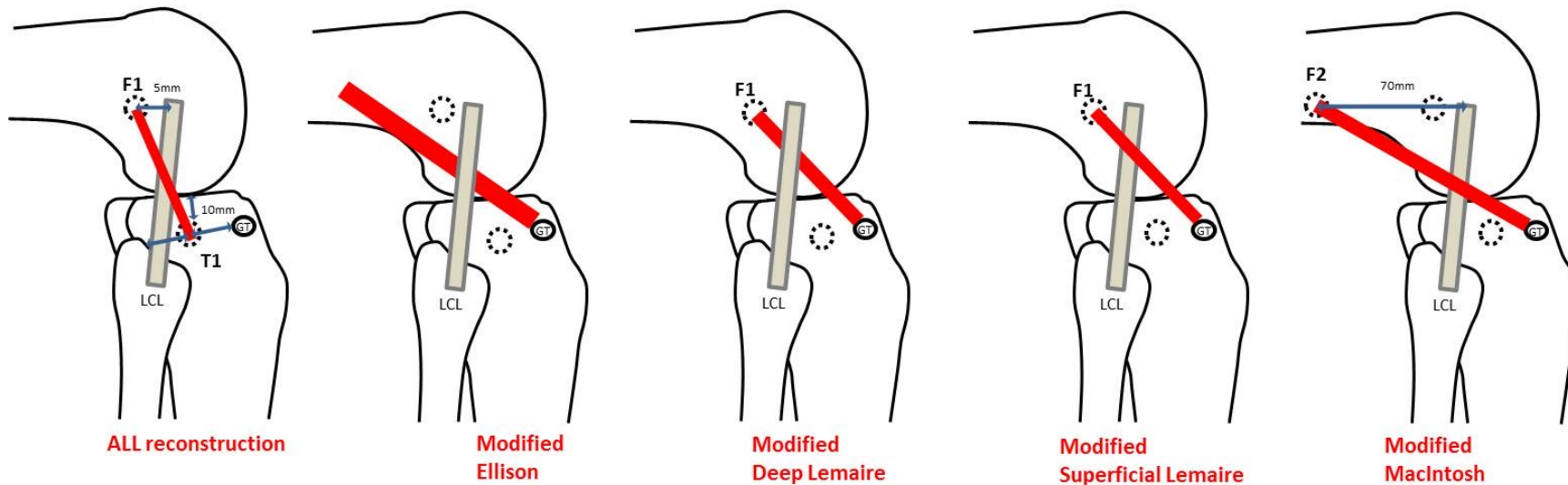
Courtesy C Lutz

TECHNICAL EVALUATION

Procédures antérolatérales : 5 principales

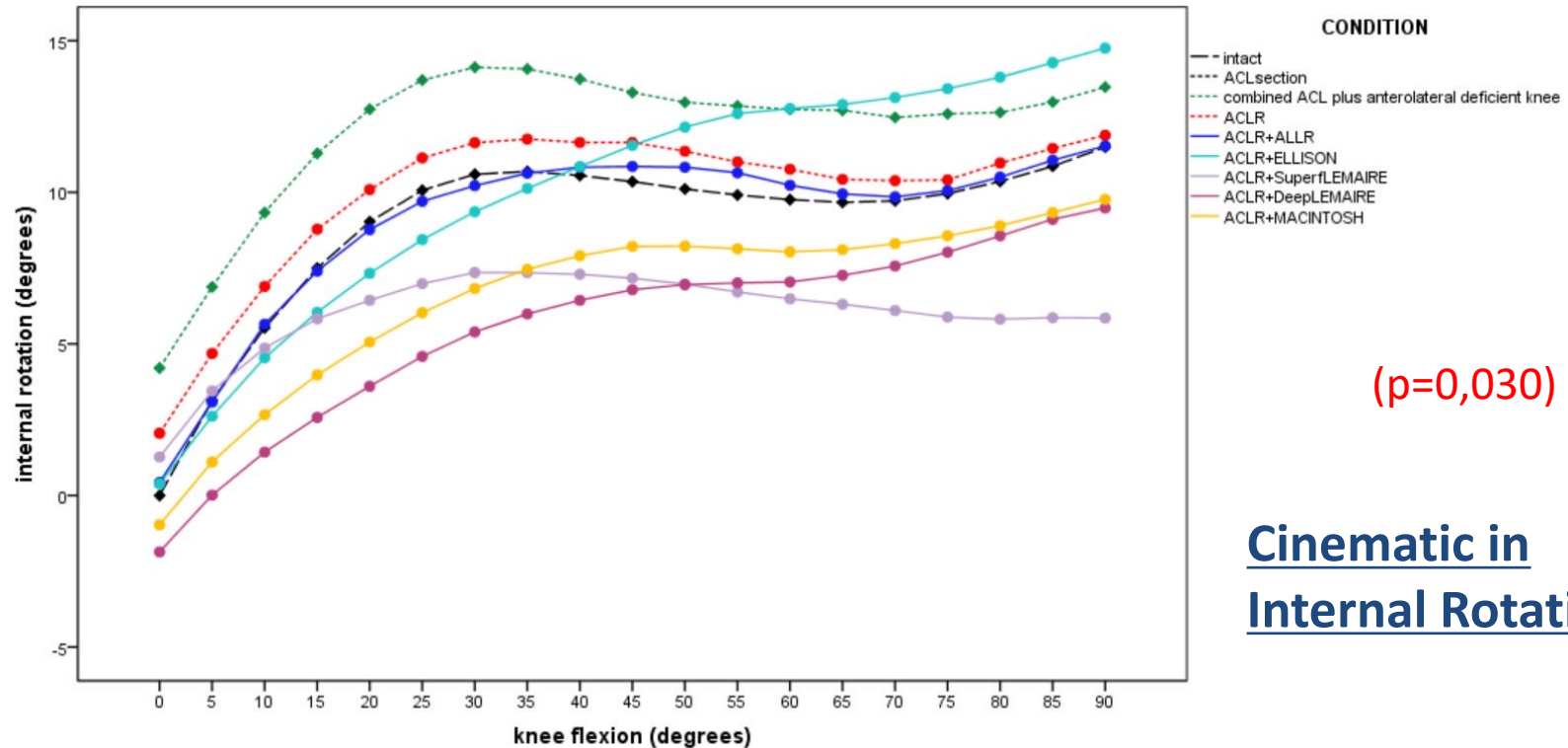
anatomique: ALLrec

LET : Lemaire, MacIntosh, Ellison



Courtesy T. NERI

RESULTS : T NÉRI – MO 2019



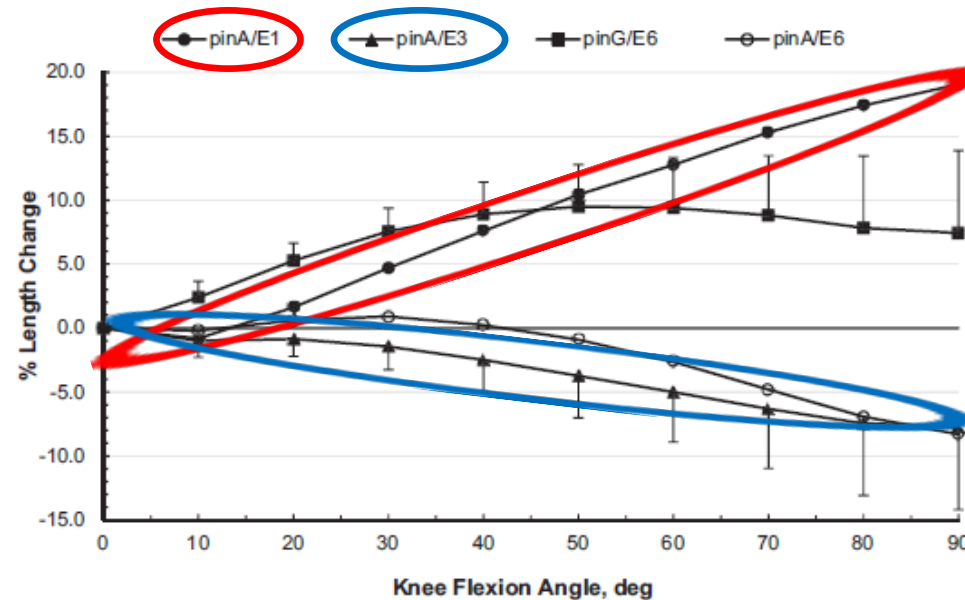
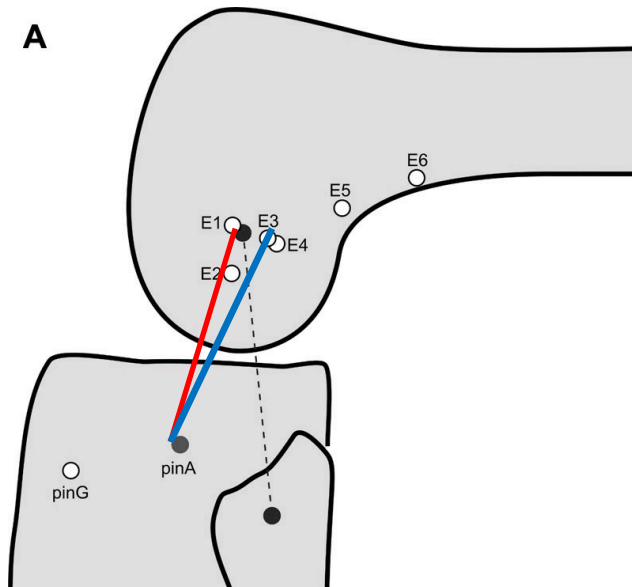
**Cinematic in
Internal Rotation (IR)**

Closest kinematics ACLR+ ALLR

Courtesy T. NERI

THE CONCEPT OF FAVORABLE ANISOMETRY

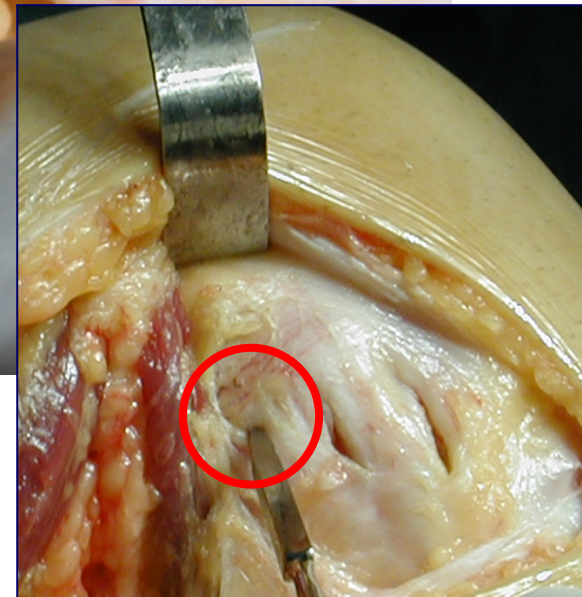
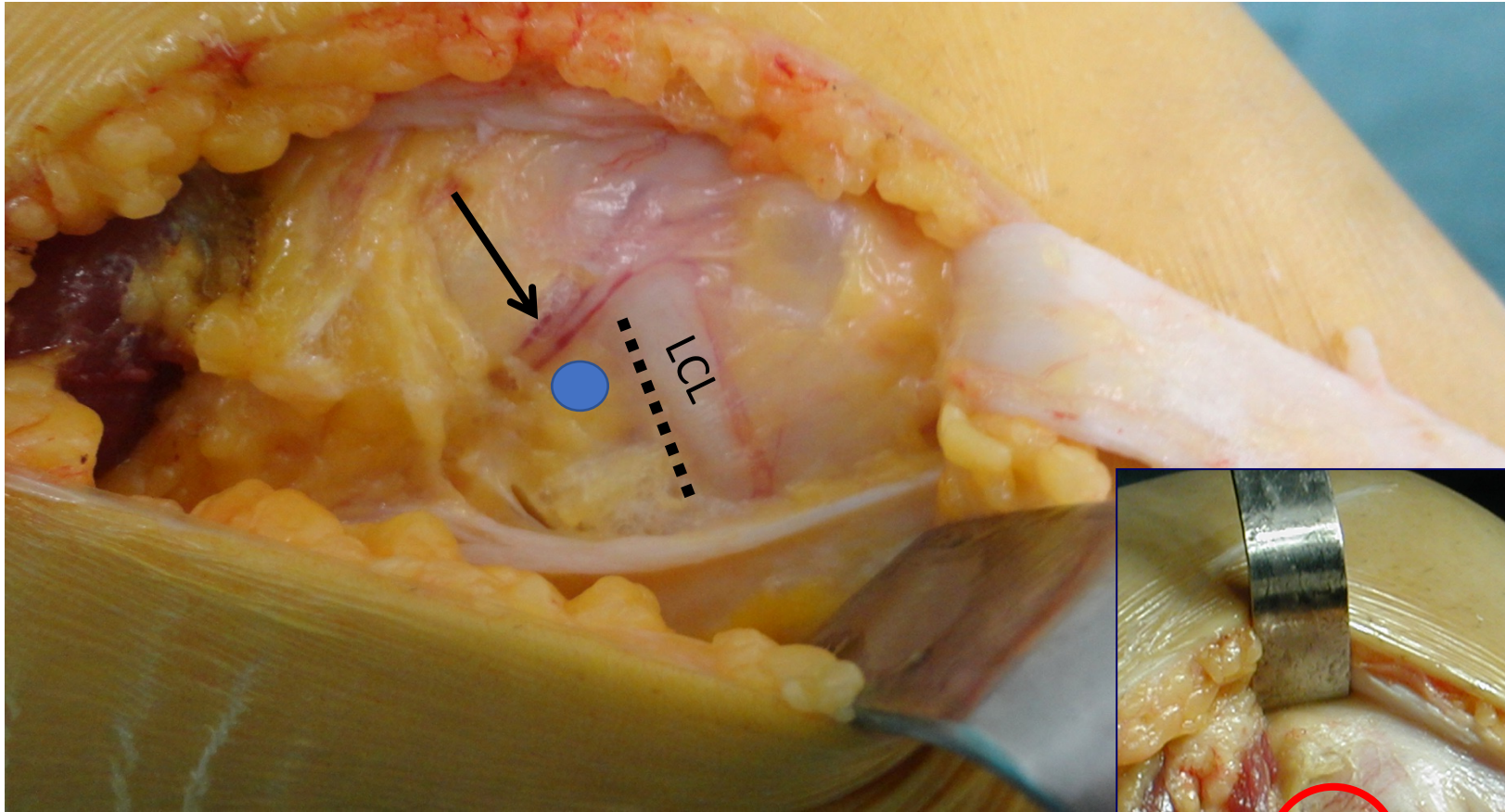
- Isométrie ≠ anatomie



Length Change Patterns in the Lateral Extra-articular Structures of the Knee and Related Reconstructions.

Kittle C, Amis AA et al. *Am J Sports Med.* 2015

FOR AIMING ISOMETRIE CHOOSE THIS ENTRY POINT OF THE FEMORAL TUNNEL



Courtesy C Lutz

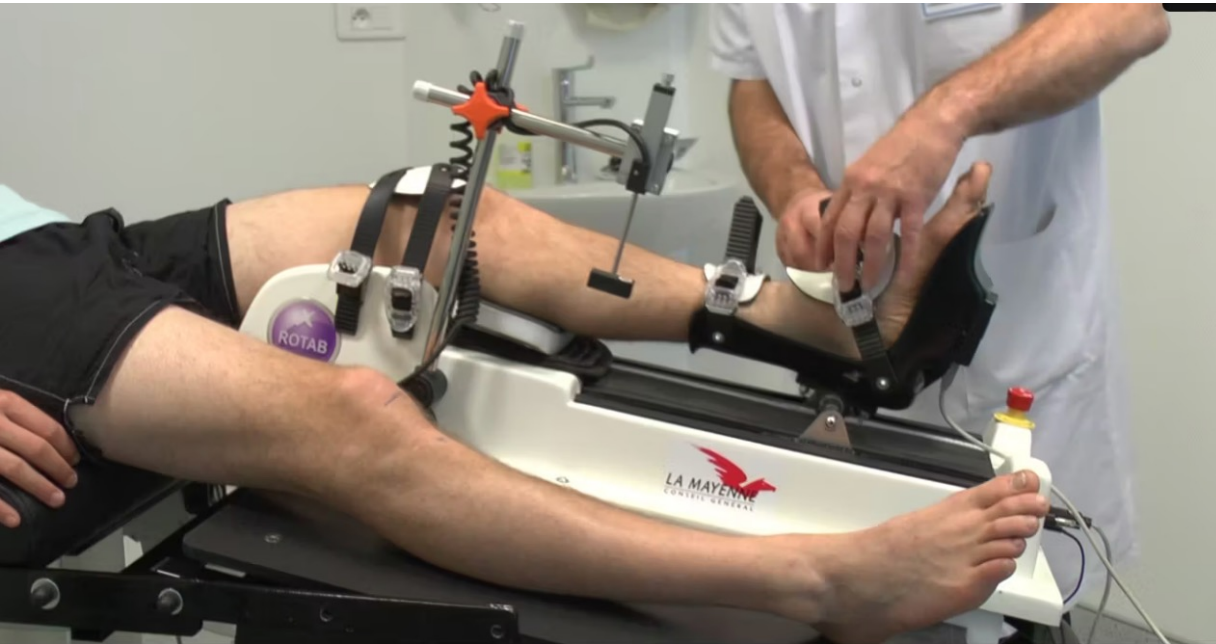
TENSIONING AND FIXING

- Flexion 30°
- Neutral rotation of the feet +++



Courtesy C Lutz

A PROBLEM REMAINS



Journal de Traumatologie du Sport

Volume 39, Issue 2, June 2022, Pages 92-98



Article original

Fiabilité du laximètre Rotab® comme test diagnostique des instabilités rotatoires post-traumatiques de genou

Reliability of Rotab® laximeter as a diagnostic test in post-traumatic rotatory instability of the knee

J. Curado ^{a b}  , M. L'Hermette ^b, F. Duparc ^{a c}, F. Dujardin ^{a b}

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<https://doi.org/10.1016/j.jts.2022.02.001>

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- currently cross-assessed, + to +++
- but device under evaluation
- May be one day , indication after an objective testing

Courtesy H Robert

SUGGESTED INDICATIONS

- Rotary jump +++
- Hyper-laxity
- Re rupture
- High sport level



CONCLUSION

- Importance of the Clinical Examination
 - ➔ ALL reconstruction : no action on lateral laxity
- Don't forget the medial meniscus
 - ➔ lesion
- Positive anisometry:
 - ➔ Tense in extension and relaxed in flexion

