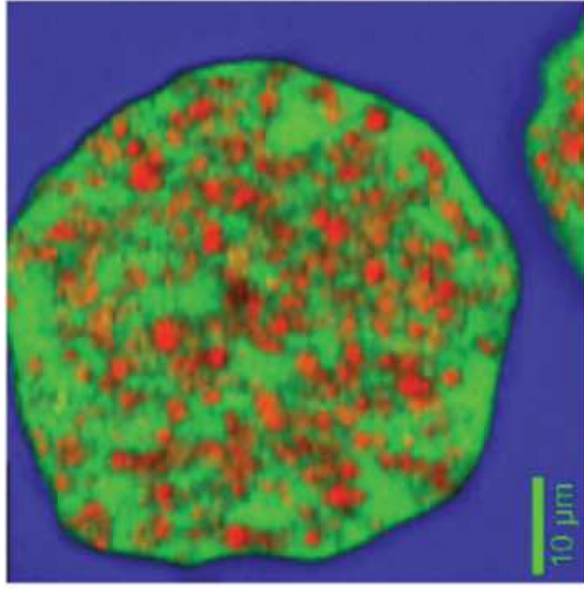


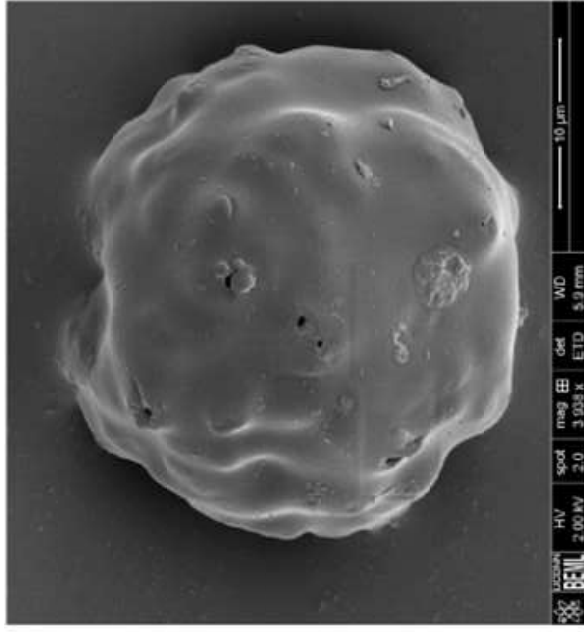


Quoi de neuf dans ... l'arthrose

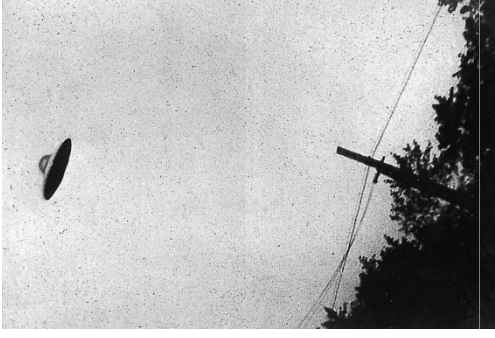
Benoit Le Goff
CHU de Nantes



A



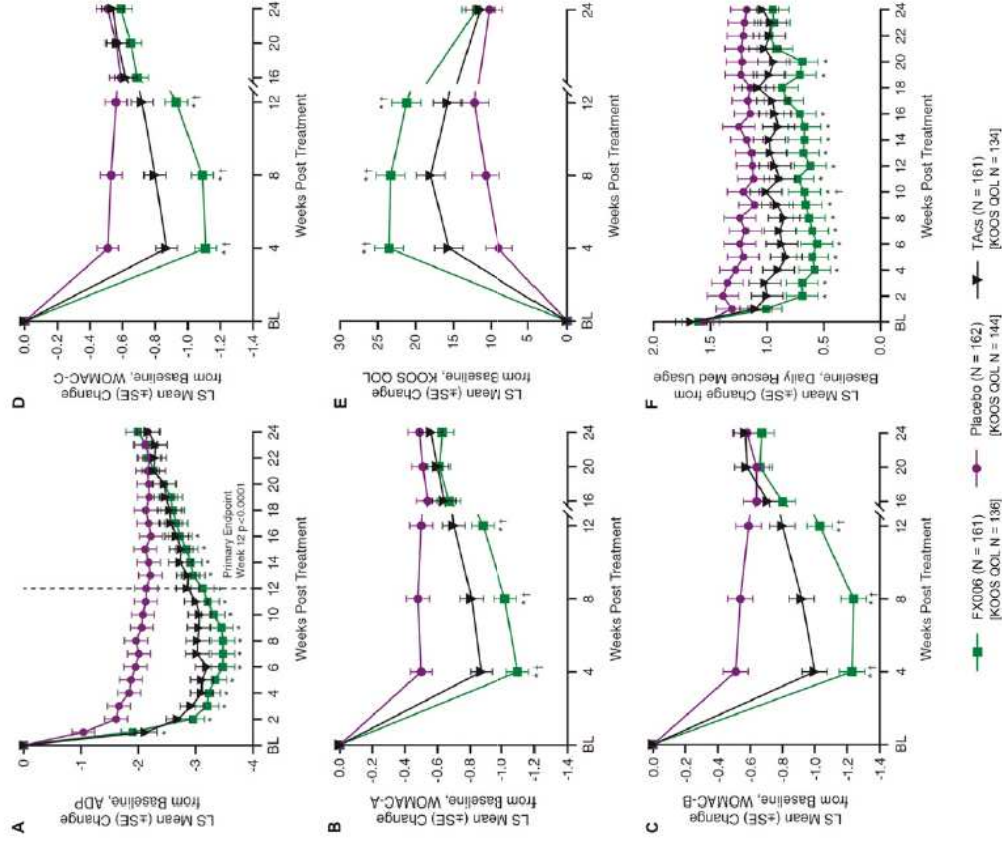
B



Effects of a Single Intra-Articular Injection of a Microsphere Formulation of Triamcinolone Acetonide on Knee Osteoarthritis Pain

A Double-Blinded, Randomized, Placebo-Controlled, Multinational Study

Philip G. Conaghan, MBBS, PhD, FRACP, FRCP, David J. Hunter, MBBS, PhD, FRACP, Stanley B. Cohen, MD, Virginia B. Kraus, MD, PhD, Francis Berenbaum, MD, PhD, Jay R. Lieberman, MD, Derek G. Jones, MD, Andrew I. Spitzer, MD, David S. Jeroscur, MD, MBA, Nathaniel P. Katz, MD, MS, Diane J. Burgess, PhD, Jodell Lublin, MPH, James R. Johnson, PhD, and Neil Bodick, MD, PhD, on behalf of the FX006-2014-008 Participating Investigators

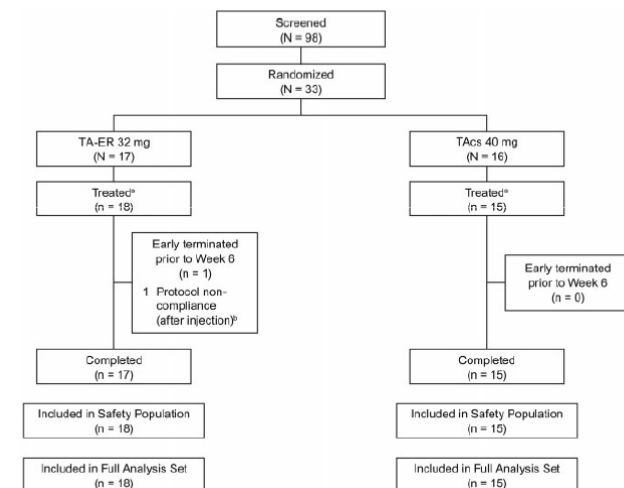


Original article

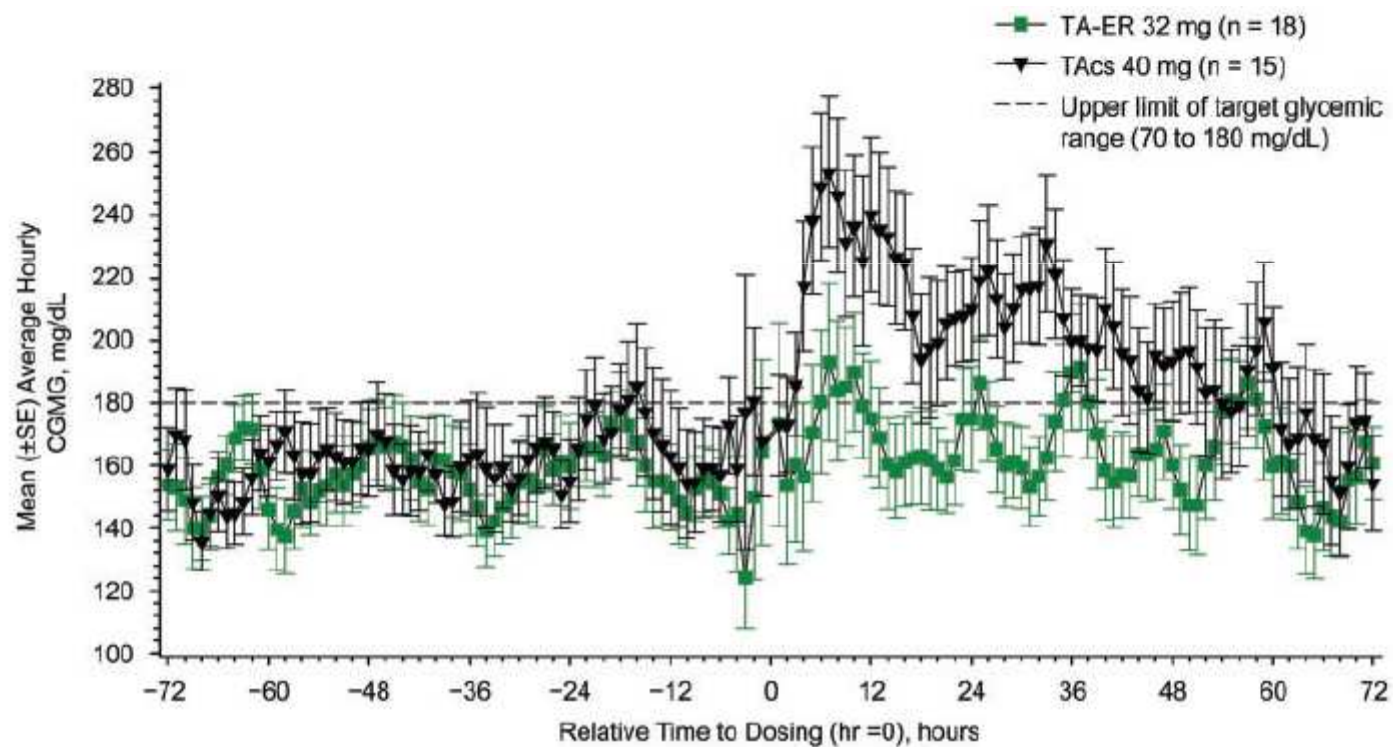
Triamcinolone acetonide extended-release in patients with osteoarthritis and type 2 diabetes: a randomized, phase 2 study

Steven J. Russell¹, Robert Sala², Philip G. Conaghan³, George Habib⁴, Quang Vo⁵, Rickey Manning⁶, Alan Kivitz⁷, Yvonne Davis⁸, Joelle Lufkin⁹, James R. Johnson¹⁰, Scott Kelley⁹ and Neil Bodick⁹

- Diabétiques type 2
- hemoglobine-A1c (HbA1c) 6.5–9.0%
- Arthrose du genou



Effet sur la glycémie





OPEN ACCESS



Arthroscopic hip surgery compared with physiotherapy and activity modification for the treatment of symptomatic femoroacetabular impingement: multicentre randomised controlled trial

Antony J R Palmer,¹ Vandana Ayyar Gupta,¹ Scott Fernquest,¹ Ines Rombach,² Susan J Dutton,² Ramy Mansour,³ Simon Wood,³ Vikas Khanduja,⁴ Tom C B Pollard,⁵ Andrew W McCaskie,⁶ Karen L Barker,¹ Tony J M D Andrade,⁵ Andrew J Carr,¹ David J Beard,^{1,7} Sion Glyn-Jones,¹ on behalf of the FAIT Study Group

the **bmj** | *BMJ* 2019;364:l185 | doi: 10.1136/bmj.l185

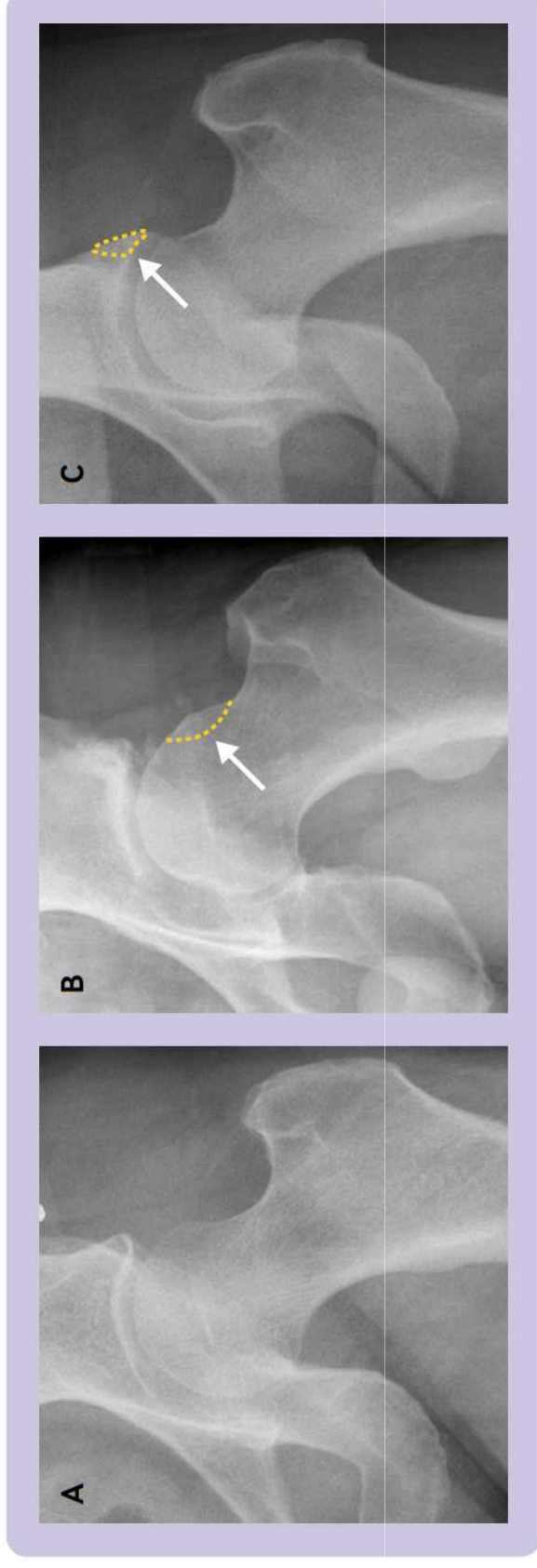


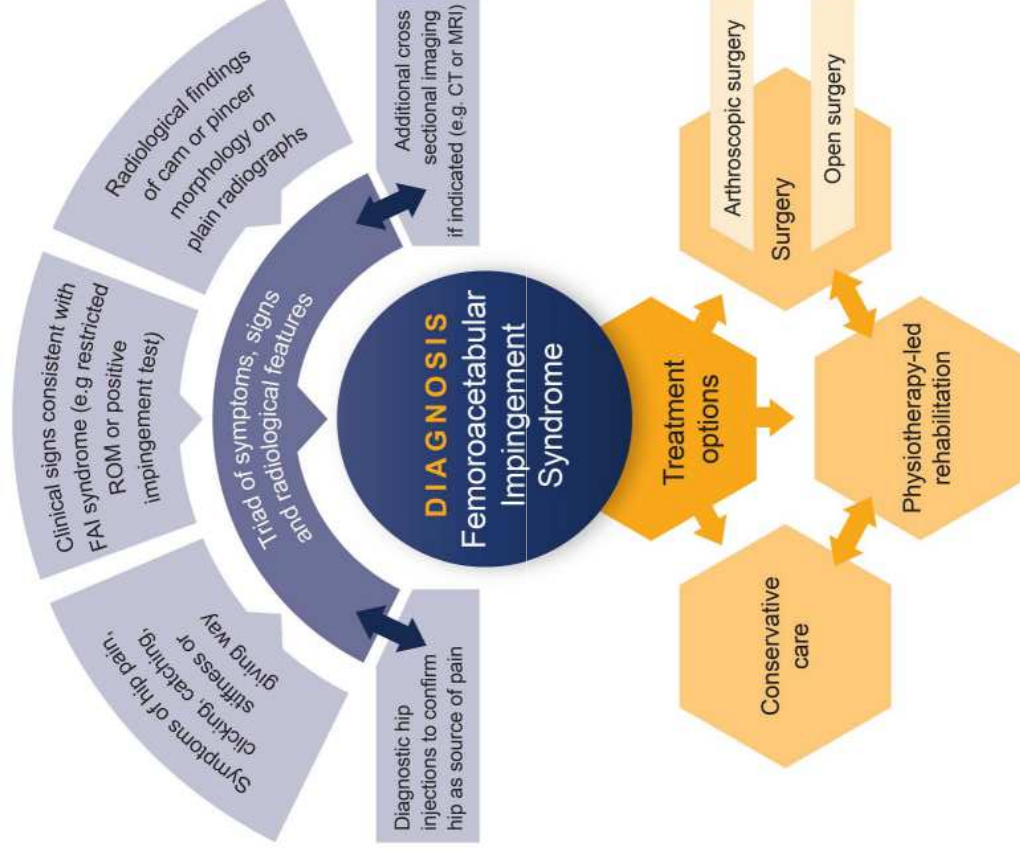
Fig 1 | Anteroposterior radiographs showing (A) normal morphology, (B) cam morphology, and (C) pincer morphology. Dashes represent abnormal morphology that predisposes to femoroacetabular impingement, and which is excised with a burr during arthroscopic surgery to prevent impingement

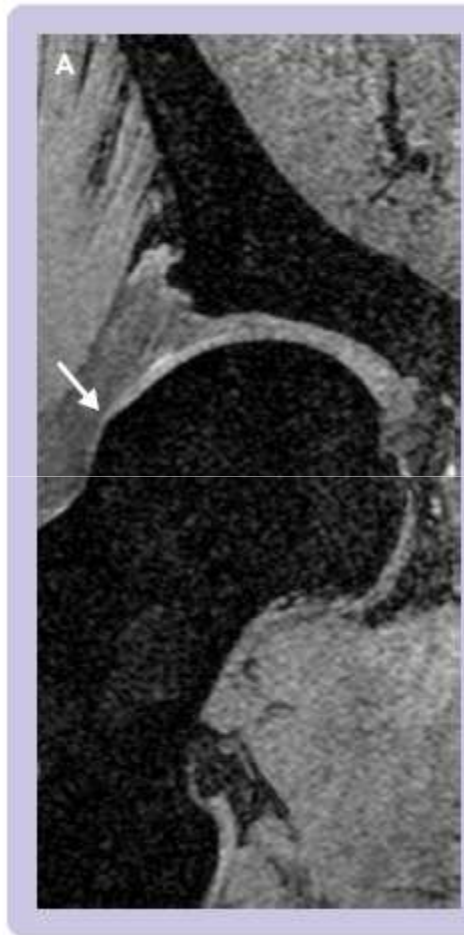
Critères d'inclusion

- Aged 18 to 60 years
- Referred to secondary or tertiary care
- Symptomatic FAI confirmed **clinically and with imaging** (radiography and magnetic resonance imaging (MRI))
- Surgeons **qualitatively assessed** hip morphology to diagnose FAI
- Exclusion criteria included established osteoarthritis (Kellgren-Lawrence grade ≥ 2) or hip dysplasia (centre-edge angle < 20 degrees on anteroposterior pelvis radiograph).

The Warwick Agreement on femoroacetabular impingement syndrome (FAI syndrome): an international consensus statement

D R Griffin,^{1,2} E J Dickenson,^{1,2} J O'Donnell,^{3,4} R Agricola,⁵ T Awan,⁶ M Beck,⁷ J C Clohisy,⁸ H P Dijkstra,⁹ E Falvey,^{10,11} M Gimpel,¹² R S Hinman,¹³ P Hölmich,^{9,14} A Kassarjian,^{15,16} H D Martin,¹⁷ R Martin,^{18,19} R C Mather,²⁰ M J Philippon,²¹ M P Reiman,²⁰ A Takla,^{3,22,23,24} K Thorborg,¹⁴ S Walker,²⁵ A Weir,^{9,26} K L Bennell²³





Geste



Critères principal

- Score fonctionnel HOS à 8 mois
- Score de 0 à 100%, élevé = meilleur

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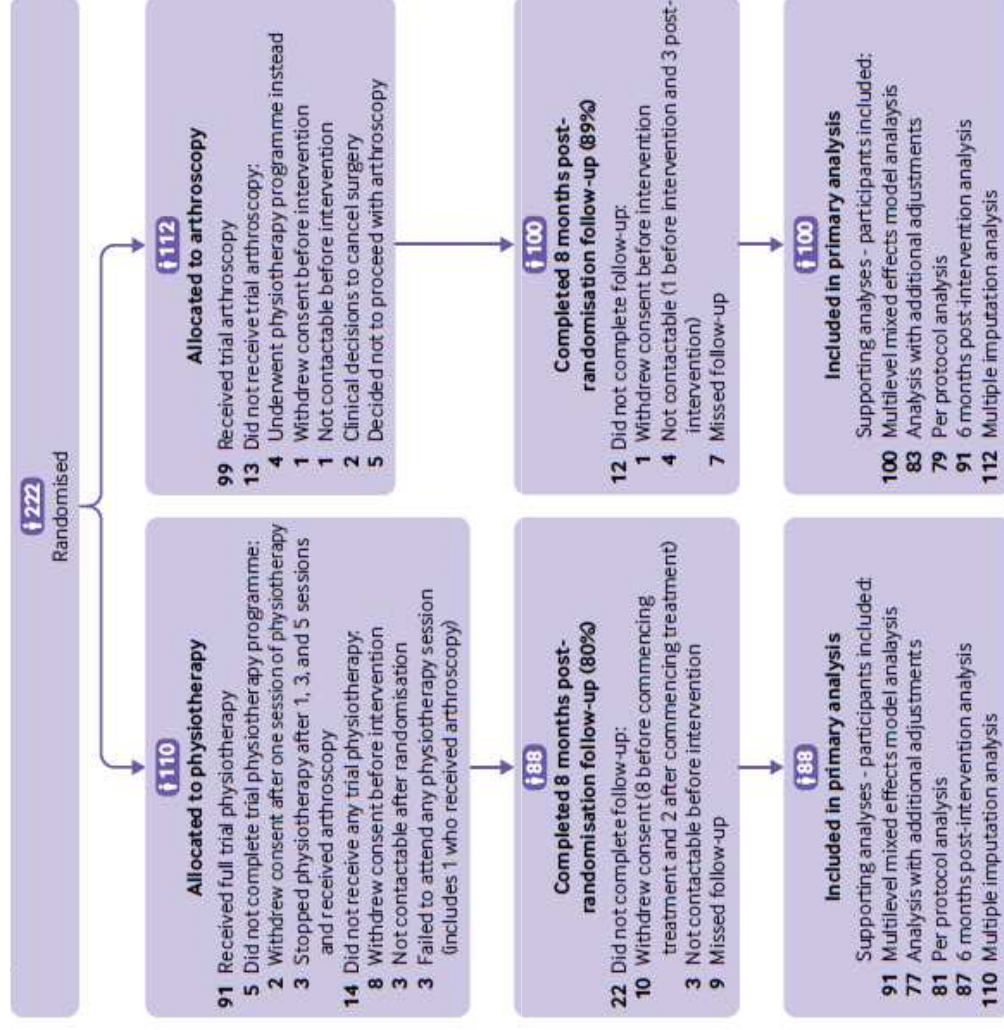
Hip Outcome Score (HOS)

[Type text]

Please answer **every question** with one response that most closely describes your condition within the past week. If the activity in question is limited by something other than your hip mark not applicable (N/A).

Because of your hip how much difficulty do you have with:

	No Difficulty at all	Some Difficulty	Moderate Difficulty	Extreme Difficulty	Unable	N/A
Standing for 15 minutes	4	3	2	1	0	N/A
Getting into and out of an average car	4	3	2	1	0	N/A
Walking up steep hills	4	3	2	1	0	N/A
Walking down steep hills	4	3	2	1	0	N/A
Going up 1 flight of stairs	4	3	2	1	0	N/A
Going down 1 flight of stairs	4	3	2	1	0	N/A
Stepping up and down curbs	4	3	2	1	0	N/A
Deep squatting	4	3	2	1	0	N/A
Getting into and out of a bath tub	4	3	2	1	0	N/A
Walking initially	4	3	2	1	0	N/A
Walking approximately 10 minutes	4	3	2	1	0	N/A
Walking 15 minutes or greater	4	3	2	1	0	N/A
Twisting/pivoting on involved leg	4	3	2	1	0	N/A
Rolling over in bed	4	3	2	1	0	N/A
Light to moderate work (standing, walking)	4	3	2	1	0	N/A
Heavy work (push/pulling, climbing, carrying)	4	3	2	1	0	N/A
Recreational activities	4	3	2	1	0	N/A



Résultats: Critère principal

Table 3 | Primary and supporting analyses

Analyses	Physiotherapy programme*		Arthroscopic surgery		Arthroscopic surgery v physiotherapy programme: adjusted† treatment effect (95% CI)	P value
	Mean (SD)	No of patients	Mean (SD)	No of patients		
Primary analysis: HOS ADL 8 months post-randomisation	69.2 (19.1)	88	78.4 (19.9)	100	10.0 (6.4 to 13.6)	<0.001
Analysis A: multilevel mixed effects model‡	–	–	–	–	10.5 (6.4 to 14.6)	<0.001
Analysis B: additional adjustment§	69.0 (19.5)	77	80.1 (18.7)	83	11.7 (9.4 to 14.1)	<0.001
Analysis C: per protocol population¶	69.7 (18.6)	81	80.5 (18.9)	79	11.9 (6.2 to 17.5)	0.002
Analysis D: post-intervention analysis**	69.2 (19.3)	87	80.4 (19.6)	91	12.0 (7.3 to 16.7)	<0.001
Multiple imputation analysis	68.0 (20.4)	110	78.2 (20.6)	112	10.0 (5.3 to 14.7)	0.004

*Includes activity modification.

†All analysis models are adjusted for baseline activities of daily living subscale of the hip outcome score (HOS ADL, continuous), sex, age at randomisation (continuous), and site (using cluster robust standard errors).

‡Multilevel mixed effects model adjusted for HOS ADL, sex and age at randomisation, and time from randomisation (continuous), together with a quadratic term. Participant and study site are used as random effects. Data measured up to 10 months post-randomisation was included in analysis. This analysis concerns 330 observations of 191 participants.

§Primary analysis repeated with additional covariates: centre-edge angle (continuous), maximum α angle (continuous), Kellgren-Lawrence grade (categorical variable with values 0 and 1), and hospital anxiety and depression scale score (anxiety and depression subscales (continuous)).

¶Primary analysis repeated for per protocol population (participants who received their allocated intervention at least eight weeks before eight month post-randomisation assessment).

**Primary analysis repeated substituting eight month post-randomisation HOS ADL with six month post-intervention HOS ADL in participants where time from randomisation to intervention exceeded 12 weeks.

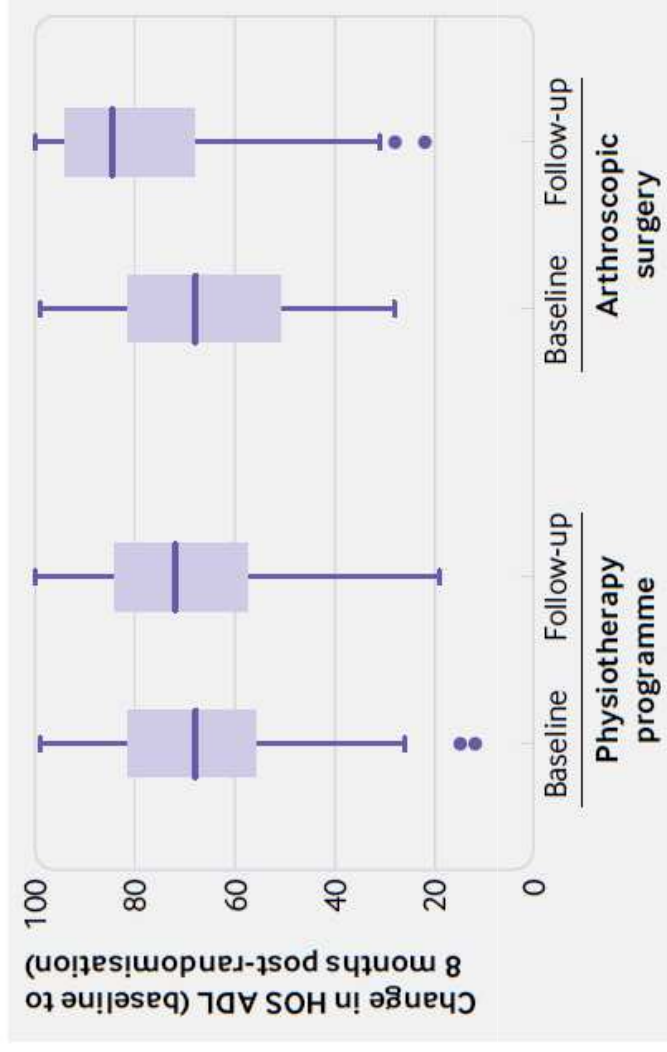


Fig 4 | Hip outcome score on activities of daily living subscale (HOS ADL) at baseline and eight months post-randomisation (modified intention to treat). Dots represent extreme outliers

Résultats en % d'amélioration

- 70% of participants randomised to arthroscopic surgery and 50% randomised to physiotherapy and activity modification reported an improvement in HOS **ADL of at least 1 point**
- **Only half the participants** randomised to arthroscopic surgery reported an improvement in HOS ADL exceeding 9 points or **achieved the PASS**

Discussion

- Biais majeur: étude en ouvert ...
- Mais évaluation à l'aveugle des amplitudes articulaires

Hip movement	Physiotherapy programme		Arthroscopic surgery		Difference in ROM adjusted for baseline (95% CI)	P value
	Baseline	8 month assessment	Baseline	8 month assessment		
Flexion:	n=107	n=85	n=111	n=96		
Mean (SD)	95.7 (19.1)	99.7 (17.5)	96.9 (15.8)	105.8 (16.3)	4.8 (0.5 to 9.1)	0.03
Range	27-126	25-130	50-130	40-138		
Extension:	n=100	n=83	n=104	n=96		
Mean (SD)	17.9 (7.9)	15.7 (8.0)	18.2 (8.0)	16.8 (7.4)	1.6 (-0.6 to 3.8)	0.16
Range	5-50	0-46	0-40	0-45		
Abduction:	n=107	n=84	n=110	n=96		
Mean (SD)	27.5 (11.9)	29.6 (11.7)	27.1 (12.0)	30.3 (10.6)	1.0 (-2.1 to 4.1)	0.53
Range	5-60	5-70	5-80	8-66		
Adduction:	n=104	n=84	n=108	n=96		
Mean (SD)	21.6 (7.9)	23.2 (8.9)	20.9 (8.2)	23.9 (8.2)	1.1 (-1.2 to 3.5)	0.35
Range	5-44	5-50	5-60	9-45		
Internal rotation:	n=107	n=84	n=110	n=96		
Mean (SD)	24.0 (11.2)	28.9 (11.2)	24.9 (11.2)	30.8 (10.6)	1.4 (-1.6 to 4.4)	0.37
Range	5-55	2-55	2-56	5-69		
External rotation:	n=107	n=84	n=110	n=96		
Mean (SD)	25.0 (11.8)	27.4 (9.7)	26.2 (10.6)	27.0 (8.9)	-1.1 (-3.6 to 1.4)	0.38
Range	5-80	8-70	7-80	10-50		

Conclusion

- 50% d'amélioration après chirurgie de conflit dans une étude en ouverte comparativement à la kinésithérapie
- Deux étude précédente négatives ...



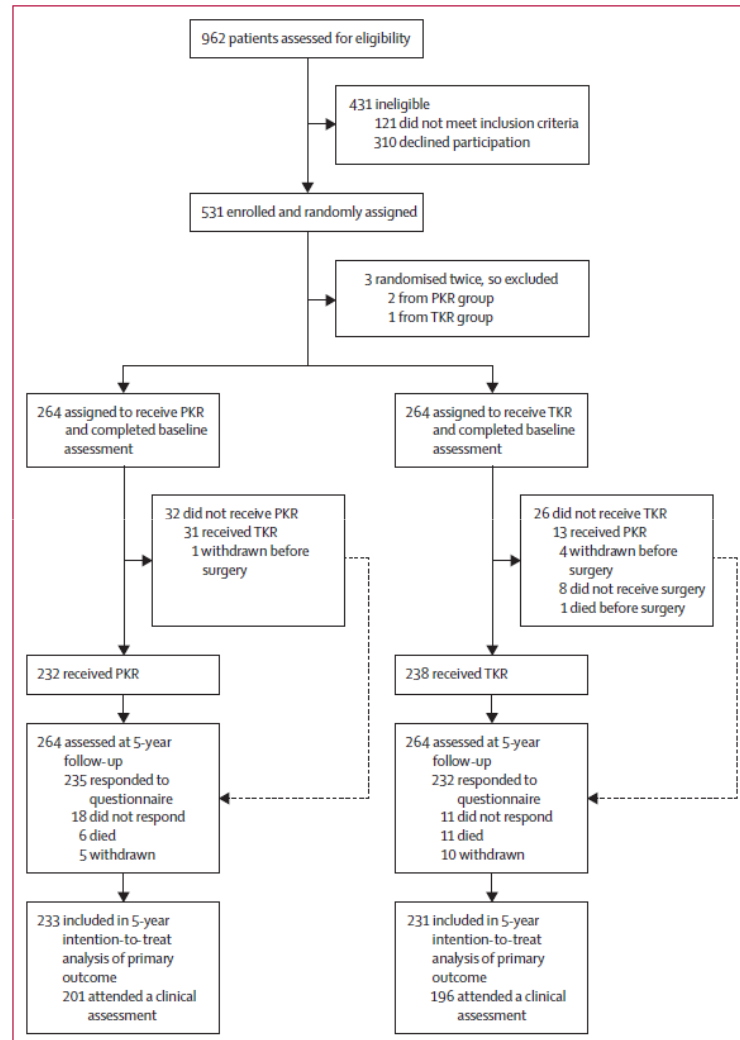


The clinical and cost-effectiveness of total versus partial knee replacement in patients with medial compartment osteoarthritis (TOPKAT): 5-year outcomes of a randomised controlled trial



David J Beard, Loretta J Davies, Jonathan A Cook, Graeme MacLennan, Andrew Price, Seamus Kent, Jemma Hudson, Andrew Carr, Jose Leal, Helen Campbell, Ray Fitzpatrick, Nigel Arden, David Murray, Marion K Campbell, for the TOPKAT Study Group*



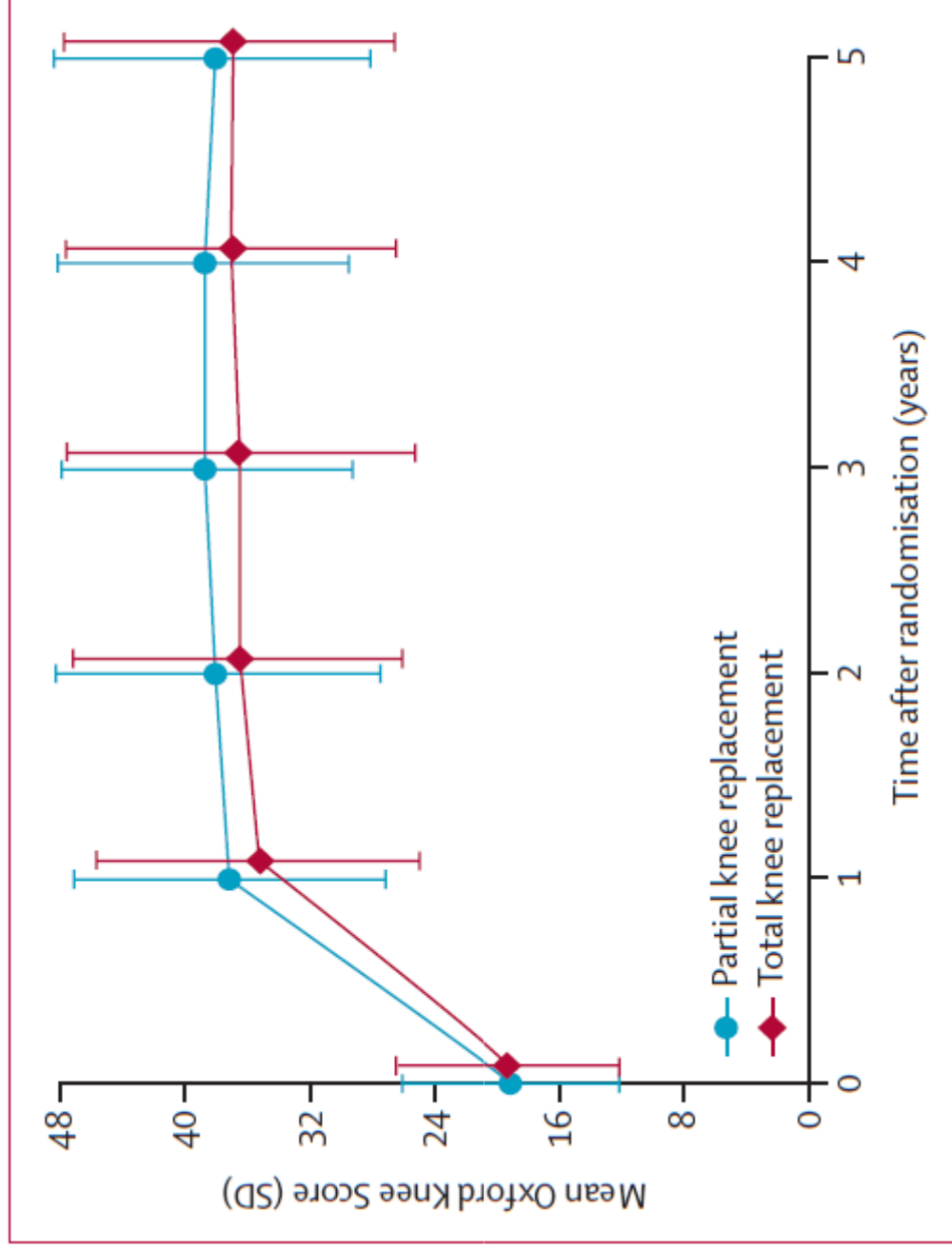


Patients avec arthrose médiale isolée

The primary outcome measure was the OKS 5 years after randomisation in all patients assigned to groups

% de réintervention

intention-to-treat basis



Satisfaction meilleure avec la prothèse partielle

	Partial knee replacement		Total knee replacement		Risk ratio (95% CI)	p value
	n (%)	Valid N	n (%)	Valid N		
Satisfied with knee	190 (82%)	233	173 (77%)	225	1.06 (0.99–1.13)	0.097
Knee better now versus before surgery	219 (95%)	230	200 (90%)	222	1.06 (1.01–1.11)	0.016
Would choose to have knee operation again	208 (91%)	228	183 (84%)	217	1.08 (1.02–1.15)	0.010

Valid N data are the number who responded to the question.

Table 3: Estimated treatment effect on self-reported anchor questions at 5 years

Pas plus de reprise

	Treatment received		Treatment as allocated	
	PKR (n=245)	TKR (n=269)	PKR (n=263)	TKR (n=251)
Number of participants receiving a re-operation	15 (6%)	21 (8%)	14 (5%)	22 (9%)
Number of re-operations	22 (9%)	28 (10%)	18 (7%)	32 (13%)
Number of participants with revision	10 (4%)	10 (4%)	8 (3%)	12 (5%)
Unexplained pain	2	5	1	6
Bearing dislocation	3	0	3	0
Device loosening (tibia)	2	0	1	1
Bearing dislocation and unexplained pain	1	0	1	0
Ligamentous instability	1	0	1	0
Infection	1	0	1	0
Infection and mechanical failure	0	1	0	1
Knee stiffness and unexplained pain	0	1	0	1
Ligamentous instability and malalignment	0	1	0	1
Unknown	0	2	0	2
Number of other procedures	12	18	10	20
MUA	0	12	1	11
Aspiration	3	2	3	2
Arthroscopy	3	0	3	0
Arthroscopy and debridement or washout	1	1	1	1
Debridement, exploration, or washout	2	0	0	2
Open reduction and internal fixation	1	0	1	0
Marcaïne injection and MUA	2	0	1	1
Arthroscopy and MUA	0	1	0	1
Arthroscopy and biopsy	0	1	0	1
Arthroscopy and partial medial meniscectomy	0	1	0	1

Data are n or n (%). PKR=partial knee replacement. TKR=total knee replacement. MUA=manipulation under anaesthetic.

Table 4: Number of re-operations, including revisions, by treatment received and as allocated at 5 years

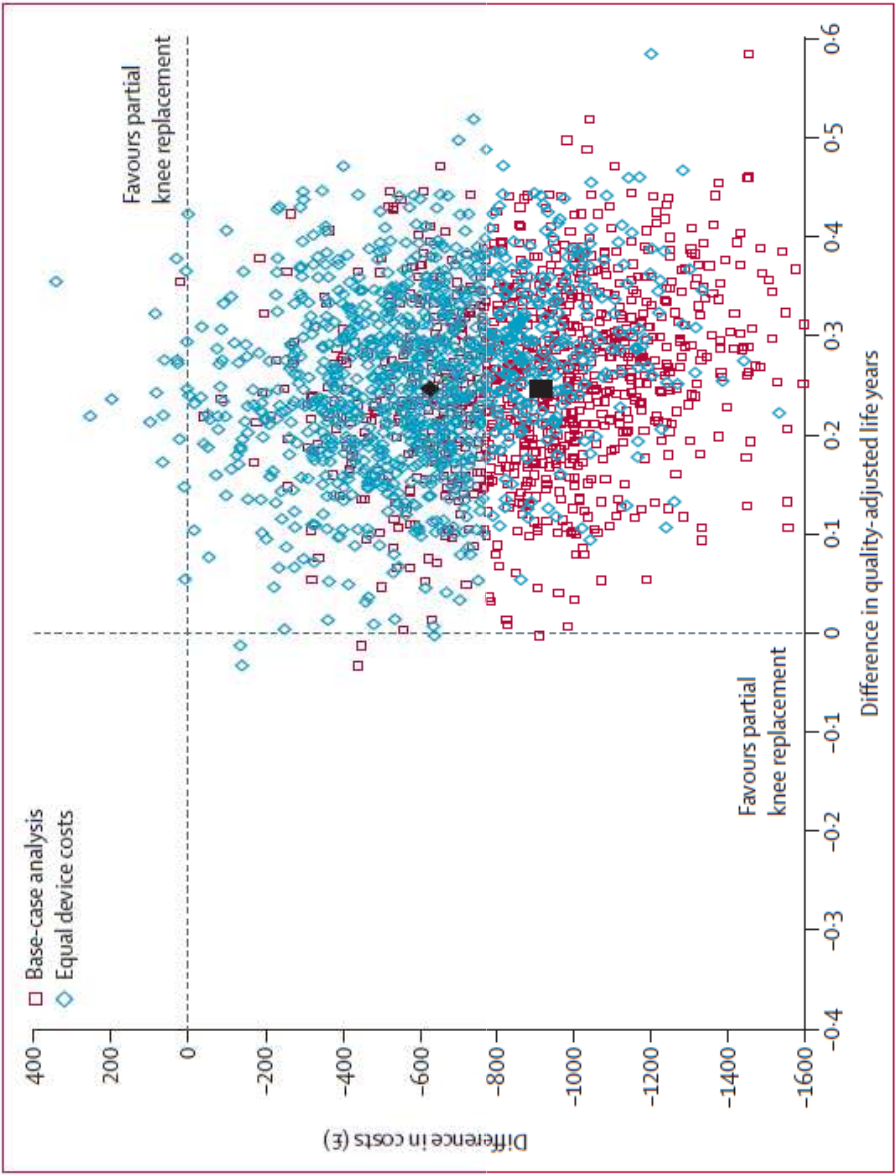


Figure 3: Cost-effectiveness of the base-case analysis versus an assumption of equal implant device costs
Large black dots are the mean values for each scenario.

Conclusion

- Pas de différence efficacité entre prothèse partielle ou complète
- Pas de différence de reprise chirurgicale
- Patient plus satisfait avec partielle (étude ouverte)
- Avantage médico-économique

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ORIGINAL ARTICLE



Intentional Weight Loss in Overweight and Obese Patients With Knee Osteoarthritis: Is More Better?

STEPHEN P. MESSIER,¹ ALLISON E. RESNIK,¹ DANIEL P. BEAVERS,² SHANNON L. MIHALKO,¹
GARY D. MILLER,¹ BARBARA J. NICKLAS,² PAUL DeVITA,³ DAVID J. HUNTER ,⁴
MARY F. LYLES,² FELIX ECKSTEIN,⁵ ALI GUERMAZI,⁶ AND RICHARD F. LOESER⁷

Effet dose de la perte de poids sur les douleurs d'arthrose de genou ?

Méthodologie

- Analyse post-hoc (régime seul vs régime + exercice) *Messier, JAMA, 2013*
- 4 groupes de perte de poids: <5% (<5% group), 5–10% ($\geq 5\%$ group), 10–20% ($\geq 10\%$ group), and >20% ($\geq 20\%$ group)

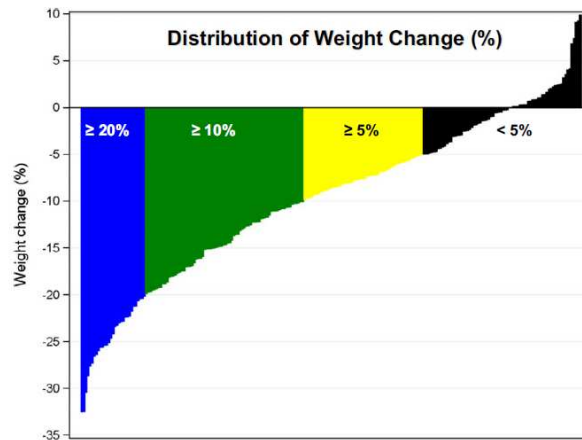


Figure 1. Distribution of weight change according to weight loss group.

- 300% !



Table 3. Dose-response effect of weight loss on outcome measures at the 18-month follow-up, according to percent weight loss*					
	<5% (n = 74)	≥5% (n = 59)	≥10% (n = 76)	≥20% (n = 31)	P
IL-6, pg/ml	2.84 (2.41, 3.26)	2.52 (2.10, 2.94)	2.65 (2.26, 3.04)	2.27 (1.70, 2.83)	0.017†
Knee compressive force, N	2,750 (2,610, 2,890)	2,611 (2,473, 2,740)	2,444 (2,324, 2,567)	2,200 (2,010, 2,381)	<0.0001
WOMAC pain (range 0–20)	4.46 (3.81, 5.11)	4.60 (3.92, 5.28)	3.71 (3.09, 4.34)	2.79 (1.87, 3.71)	0.006
WOMAC function (range 0–68)	17.13 (15.15, 19.11)	16.73 (14.70, 18.76)	13.57 (11.67, 15.47)	10.84 (8.07, 13.61)	0.0005
6-minute walk distance, meters	508 (496, 520)	522 (510, 534)	542 (530, 553)	559 (543, 576)	<0.0001
SF-36 physical (range 0–100)	42.5 (40.8, 44.2)	43.2 (41.5, 45.0)	44.3 (42.8, 45.9)	48.1 (45.8, 50.4)	0.001
SF-36 mental (range 0–100)	55.4 (53.7, 57.0)	54.6 (52.9, 56.3)	57.5 (56.0, 59.1)	58.1 (55.8, 60.4)	0.02
PASE‡	140 (120, 160)	165 (143, 188)	134 (115, 152)	129 (104, 154)	0.083
* Adjusted for visit, sex, treatment group, baseline body mass index, change in Physical Activity Scale for the Elderly (PASE) scale, and baseline value for outcome. Values are the means (95% confidence intervals). IL-6 = interleukin-6; WOMAC = Western Ontario McMasters Universities Osteoarthritis Index; SF-36 = Short Form 36. † Based on log-transformed data (not shown). ‡ Not adjusted for change in the PASE scale.					

Table 4. Pairwise between-group comparisons at the 18-month follow-up, according to percent weight loss*					
Variable	<5% vs. ≥20%	≥5% vs. ≥20%	≥10% vs. ≥20%	<5% vs. ≥10%	≥5% vs. ≥10%
IL-6, pg/ml	0.57 (-0.13, 1.27)†	0.25 (-0.44, 0.95)	0.38 (-0.28, 1.05)‡	0.18 (-0.37, 0.74)	-0.13 (-0.68, 0.42)
Knee compressive force, Newtons	550 (332, 768)§	411 (191, 632)§	244 (35, 453)‡	306 (135, 478)§	139 (-40, 317)
WOMAC pain	1.68 (0.57, 2.78)§	1.81 (0.69, 2.93)§	0.93 (-0.14, 1.99)	0.75 (-0.12, 1.62)	0.89 (0.01, 1.77)‡
WOMAC function	6.29 (2.96, 9.62)§	5.89 (2.58, 9.20)§	2.73 (-0.39, 5.85)	3.56 (0.98, 6.13)§	0.40 (-2.19, 2.99)
6-minute walk distance, meters	-51 (-71, -31)§	-37 (-57, -17)§	-17 (-36, 1)	-34 (-49, -18)§	-20 (-35, -4)§
SF-36 physical	-5.59 (-8.40, -2.78)§	-4.85 (-7.66, -2.04)§	-3.75 (-6.40, -1.10)§	-1.84 (-4.02, 0.33)	-1.10 (-3.26, 1.06)
SF-36 mental	-2.68 (-5.46, 0.10)	-3.48 (-6.28, -0.67)‡	-0.54 (-3.22, 2.14)	-2.15 (-4.33, 0.03)	-2.94 (-5.13, -0.74)§
* Adjusted for visit, sex, treatment group, baseline body mass index, change in Physical Activity Scale for the Elderly scale, and baseline values for outcome. Values are the means (95% confidence intervals). IL-6 = interleukin-6; WOMAC = Western Ontario McMasters Universities Osteoarthritis Index; SF-36 = Short Form 36. † $P \leq 0.0125$, based on log-transformed data (not shown). ‡ $P \leq 0.05$. § $P \leq 0.0125$.					

Conclusion

- Plus de 10% et de 20% de poids sont favorable sur les douleurs
- Objectif dans la prise en charge = 10% de perte de poids
- Bien dire au patient que 10% en plus va encore augmenter les bénéfices!

Randomized Trial

A Prospective Randomized Comparison of the Efficacy of Ultrasound- vs Fluoroscopy-Guided Genicular Nerve Block for Chronic Knee Osteoarthritis

Doo-Hwan Kim, MD¹, Myung-Su Lee, MD¹, Sookyung Lee, MD¹, Syn-Hae Yoon, MD²,
Jin-Woo Shin, MD, PhD¹, and Seong-Soo Choi, MD, PhD¹

Bloc ou radiofréquence du nerf géniculé

GENICULAR NERVES

1) **Femoral Nerve:** gives branches from the nerves to the three vasti

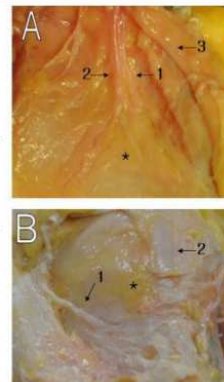
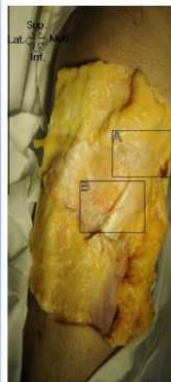
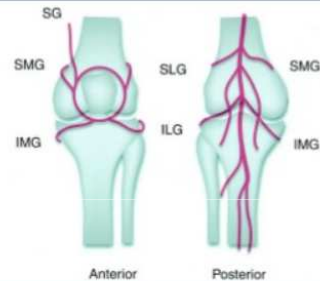
2) **Tibial Nerve Branches**

- a) Superior medial genicular
- b) Inferior medial genicular
- c) Middle genicular nerve

3) **Common Peroneal Nerve Branches**

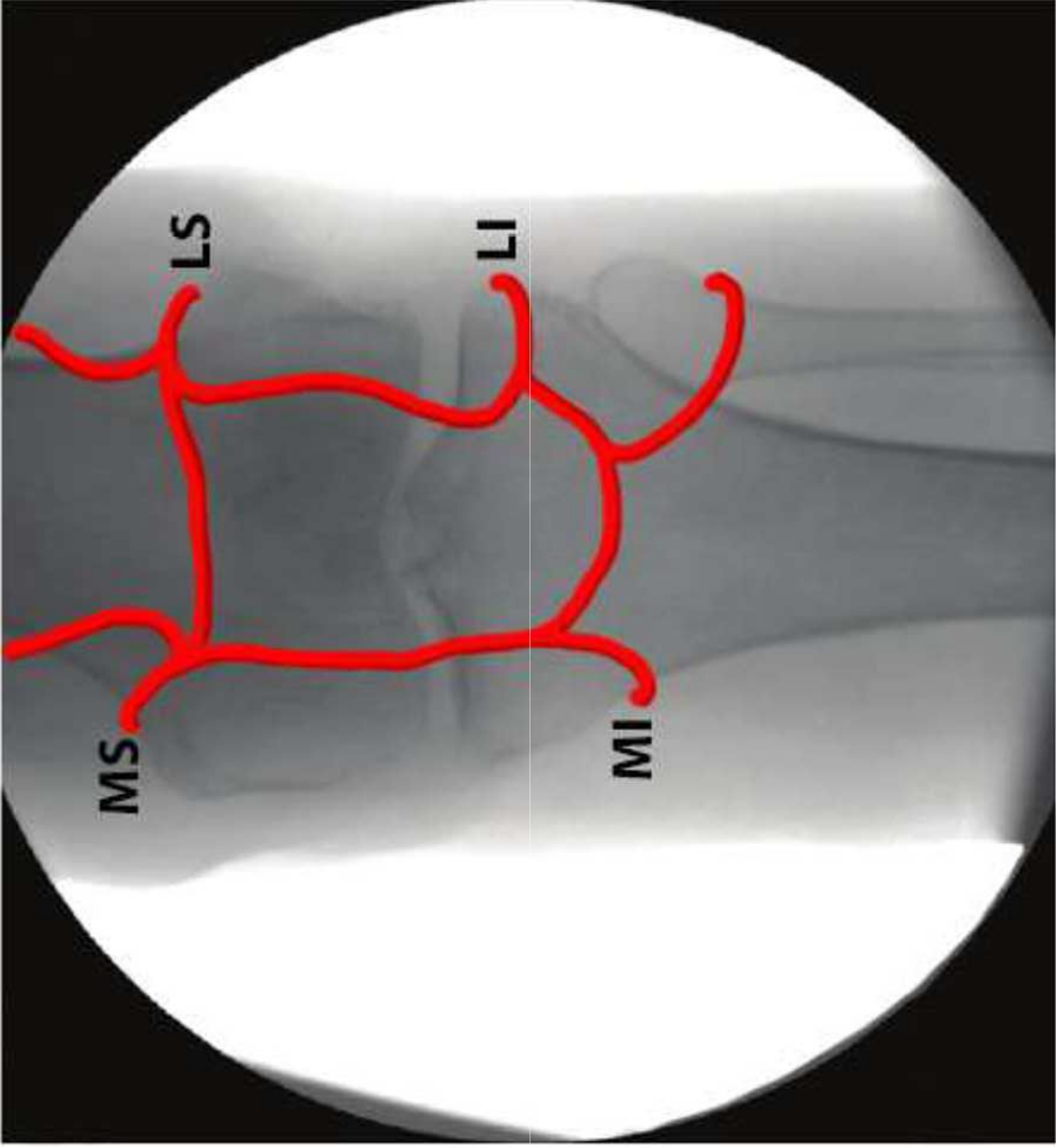
- a) Superior lateral genicular
- b) Inferior lateral genicular
- c) Recurrent genicular nerve

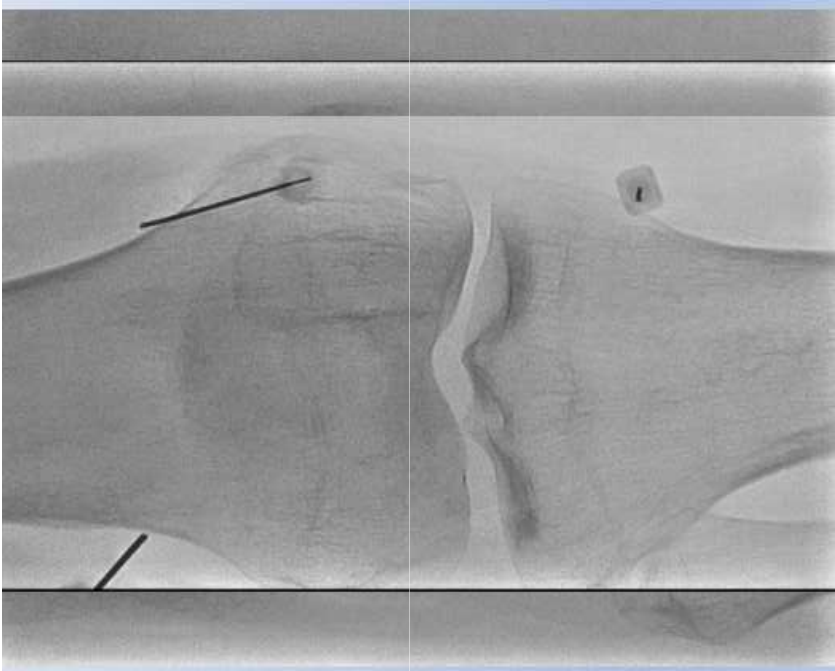
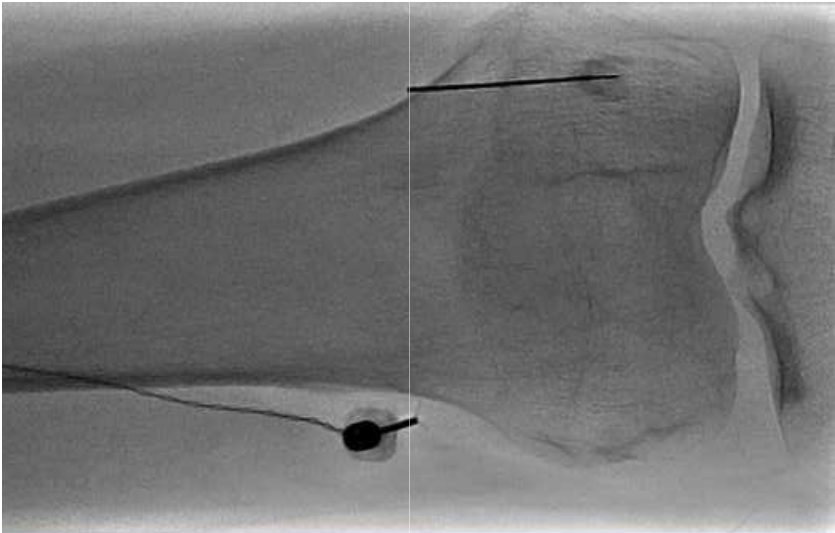
4) **Obturator Nerve:** gives genicular branch from its posterior division



Main innervating articular branches for the knee joint
Adjacent to periosteum
Can be targeted using bony landmarks under fluoroscopy

Choi WJ, et al (2011) Radiofrequency treatment relieves chronic knee osteoarthritis pain: a double-blind randomized controlled trial. Pain 152(3):481-7





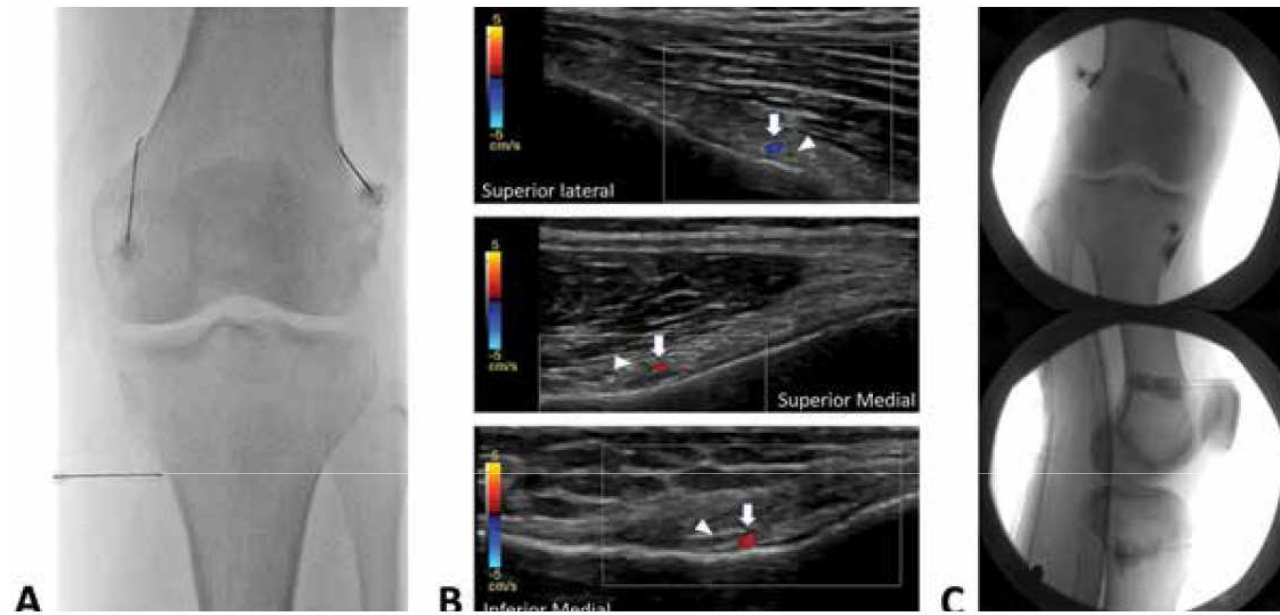


Fig. 1. *A. Anteroposterior fluoroscopic view after needle insertion into the junction between the shaft and epicondyle of the tibia and femur. B. Ultrasound images identifying genicular arteries and nerves using color Doppler mode. White arrows indicate genicular arteries, while arrowheads indicate genicular nerves appearing as a small rounded hypoechoic dot. C. Anteroposterior and lateral fluoroscopic images after ultrasound-guided needle insertion for genicular nerve block. The location of the needle tip was similar to that in Panel A. Contrast dye spread showed that the needle tips were positioned in the periosteal area, which is the junction between the shaft and epicondyle of long bones.*

2% lidocaine and 20 mg of triamcinolone

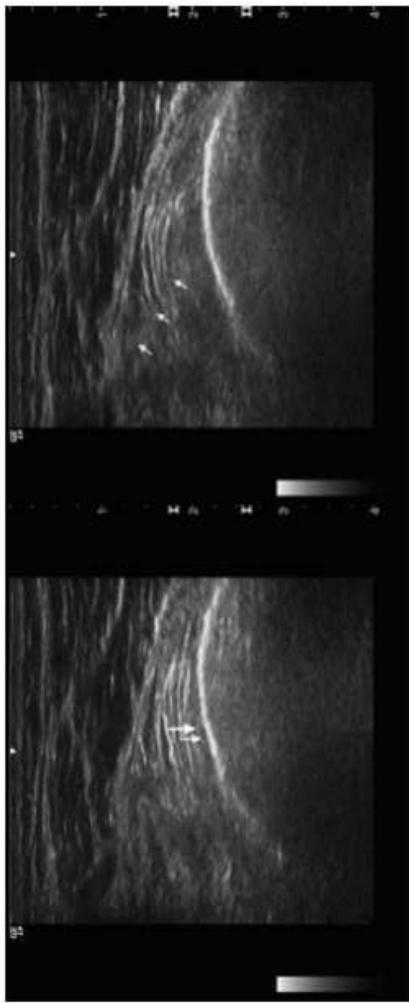


Fig. 1. (a) Transverse ultrasound image of the knee at the level of the femoral medial epicondyle. Superior medial genicular nerve (thick arrow) and the corresponding artery (thin arrow) were visualized. (b) The needle (arrows) was placed to the bony cortex 1 cm anterior to the peak of the adductor tubercle for the superior medial genicular nerve.

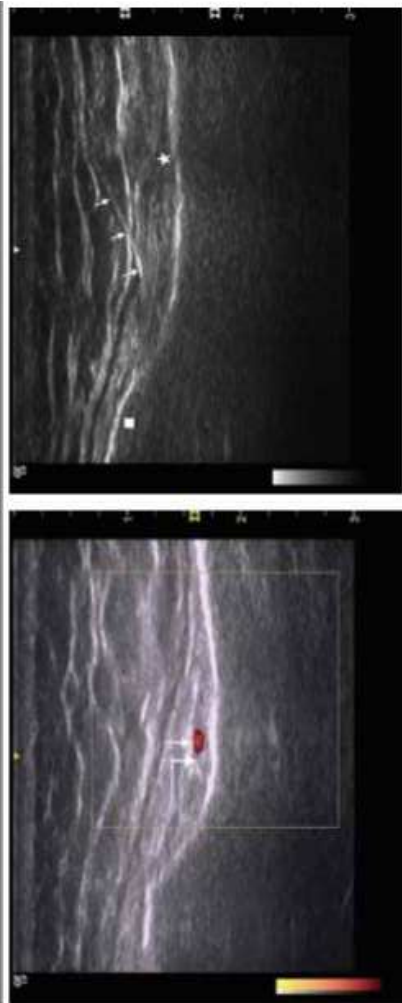


Fig. 2. (a) Longitudinal ultrasound image of the knee at the level of the tibial medial epicondyle. Inferior medial genicular nerve (thick arrow) and the corresponding artery (thin arrow) were visualized using power doppler. (b) The needle (arrows) was placed to the bony cortex at the midpoint between the peak of the tibial medial epicondyle (square) and the initial fibers inserting in the tibia of the medial collateral ligament (star) for inferior medial genicular nerve.

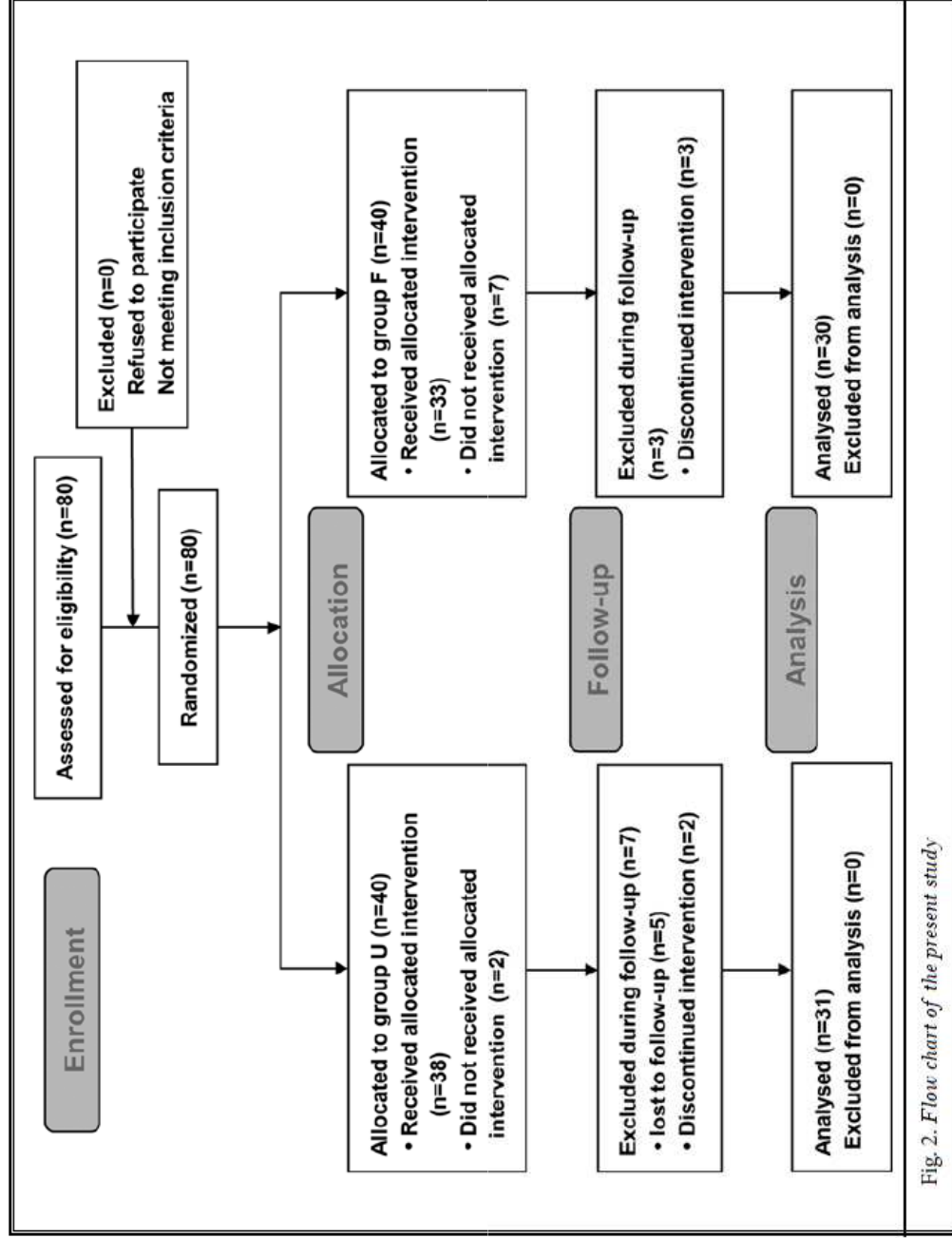
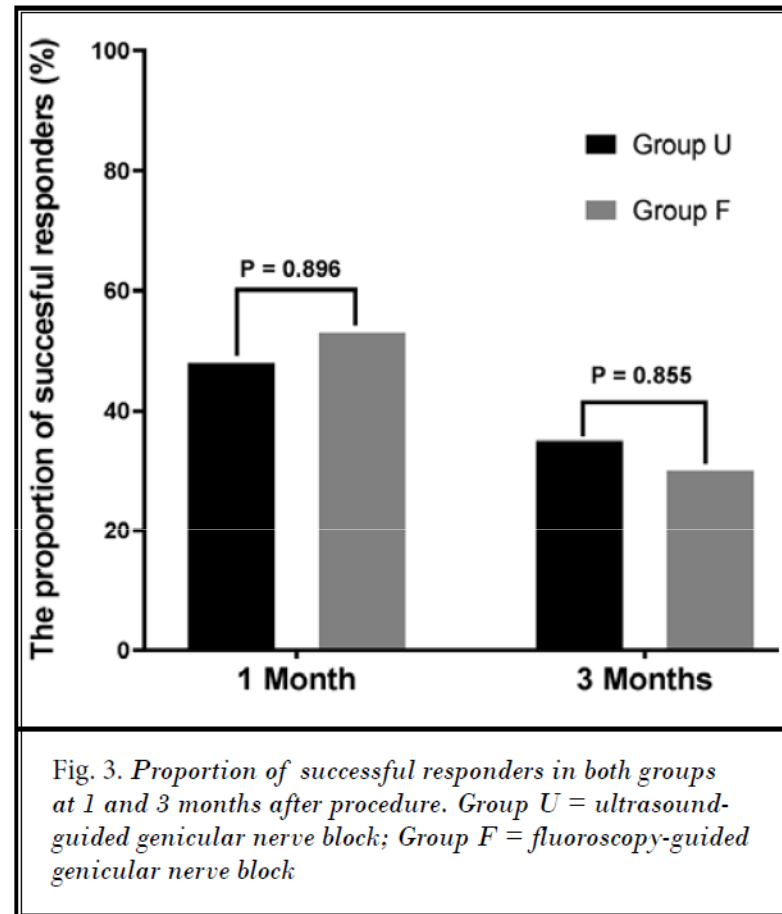


Fig. 2. Flow chart of the present study

Définition des répondeurs:

- 1) experiencing a reduction of at least 50% in mean VAS score and no increase from baseline WOMAC, and ≥ 4 points on the évaluation globale
- 2) experiencing a reduction of at least 30% in mean VAS and mean WOMAC scores, or > 5 points évaluation globale



➡ Candidats pour une radiofréquence?



The TeMPO trial (treatment of meniscal tears in osteoarthritis): rationale and design features for a four arm randomized controlled clinical trial

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Table 1 TeMPO Trial Inclusion and Exclusion Criteria

Inclusion Criteria
Age 45–85
Lives within 60 miles of a clinical site
English speaking
Has access to email
Not living in a nursing home
Physician suspects meniscal tear with symptoms
WOMAC* (knee) pain ≥ 15
Meniscal tear present on MRI [†] (taken in the last year) and aligning with symptomatic compartment
Degenerative cartilage changes on MRI (taken in the last year)

3 mois

Table 2 Overview of the different intervention components

Arm	Protocolized Home Exercise Program	Adherence Optimization	Placebo Therapy (14 sessions)	Supervised Exercise & Manual Therapy (14 sessions)
Arm 1	✓			
Arm 2	✓	✓		
Arm 3	✓	✓	✓	
Arm 4	✓	✓		✓

Weeks 1-4

Group 1: Home Exercise

25 min Home Exercise Program	Day Off	25 min Home Exercise Program	Day Off	25 min Home Exercise Program	Day Off	25 min Home Exercise Program
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
100 min exercise per week (0 min supervised)						

Group 2: Home Exercise + Adherence Optimization

25 min Home Exercise Program	Day Off	25 min Home Exercise Program	Day Off	25 min Home Exercise Program	Day Off	25 min Home Exercise Program
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Adherence Optimization						
100 min exercise per week (0 min supervised)						

Group 3: Sham PT (US, Lotion) + Home Exercise + Adherence Optimization

12 min (US)	5 min lotion	8 min sham MT	5 min assessment	25 min Home Exercise Program	Day Off	25 min Home Exercise Program	Day Off	25 min Home Exercise Program	Day Off	25 min Home Exercise Program
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11
Adherence Optimization										
100 min strength exercise per week (0 min supervised)										

Two sessions of Sham PT per week

Group 4: PT (Exercise, MT) + Home Ex + Adherence Intervention

10 min bike	5 min MT	25 min therapist-directed exercise	25 min Home Exercise Program	Day Off	Day Off	10 min bike	5 min MT	25 min therapist-directed exercise	25 min Home Exercise Program	Day Off	Day Off	25 min Home Exercise Program
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13
Adherence Optimization												
100 min exercise per week (50 min supervised)												

Two sessions of Exercise PT per week

Table 3 Protocolized home exercise program exercises and progression

Targeted Muscles ^a	Initial	Intermediate	Advanced
Stretches	Hamstrings 2x30s ^b Quadriceps 2x30s	Hamstrings 2x30s Quadriceps 2x30s	Hamstrings 2x30s Quadriceps 2x30s
Gluteus Maximus	Bent over hip extension with knee bent without weight; OR <i>Bridging</i>	Bent over hip extension with knee bent with weight (1–5 lbs)	Bent over hip extension with knee bent with weight (6–10 lbs)
Gluteus Medius	Side-lying straight leg lift without weight; OR <i>Clamshell</i>	Side-lying straight leg lift with weight (1–5 lbs)	Side-lying straight leg lift with weight (6–10 lbs)
Quadriceps	Straight leg raise without weight; OR <i>Seated knee extension without weight</i>	Straight leg raise with weight (1–5 lbs); OR <i>Seated knee extension with weight (1–5 lbs)</i>	Straight leg raise with weight (6–10 lbs); OR <i>Seated knee extension with weight (6–10 lbs)</i>
Hamstrings	Standing knee bent without weight	Standing knee bent with weight (1–5 lbs)	Standing knee bent with weight (6–10 lbs)
Functional	Mini wall squats	Regular chair squat	Staggered leg chair squat

^aAll exercises, except where indicated were done in 3 sets of 12 reps 4 times per week. Subjects were encouraged to begin at as low as 3 sets of 8 reps and work their way to 12 repetitions per set as tolerated

^b2x30s refers to two reps of a 30 s hold of each stretch

The stretch:

1. Firmly grasp your thigh with both hands and bend your hip and knee at a 90-degree angle.



2. Slowly straighten your leg as much as possible.



The exercise:

1. Bend your exercising leg.



2. Gently lift your leg up from the hip, keeping the knee bent, and push up towards the ceiling in a controlled manner. Then lower the leg back down.



The exercise:

1. Find a stable starting position on your side with your top leg in line with your shoulders and your top knee straight.



2. Slowly lift your top leg, leading with your heel. Hold for 3-5 seconds at the top, then lower slowly.



The exercise:

1. Stand a few inches in front of the chair with your feet parallel.



2. Gently bend your knees, lowering your hips so that your buttocks almost touch the chair, but do not sit down. Hold for 3-5 seconds before rising back up slowly.



TeMPO Trial Paper Appendix II:
Arm III Sham Manual Therapy

Below are screenshots of the different procedures used in the Sham Physical Therapy Arm of the TeMPO Trial.

Therapist Guided Hip Internal/External Rotation



TeMPO Trial Paper Appendix II:
Arm III Sham Manual Therapy

Ankle Plantar /Dorsi Flexion and Inversion/Eversion



Conclusion

- Perdre du poids
- Faire de l'activité
- L'arrivée des corticoïdes retard
- Chirurgie préventive du conflit: on y croit ?
- Prothèses uni-compartimentales aussi bien que des totales
- Les biothérapies ce n'est pas pour demain ...
- Les blocs antalgiques: on y croit ?