

Facteurs de cicatrisation tendineuse

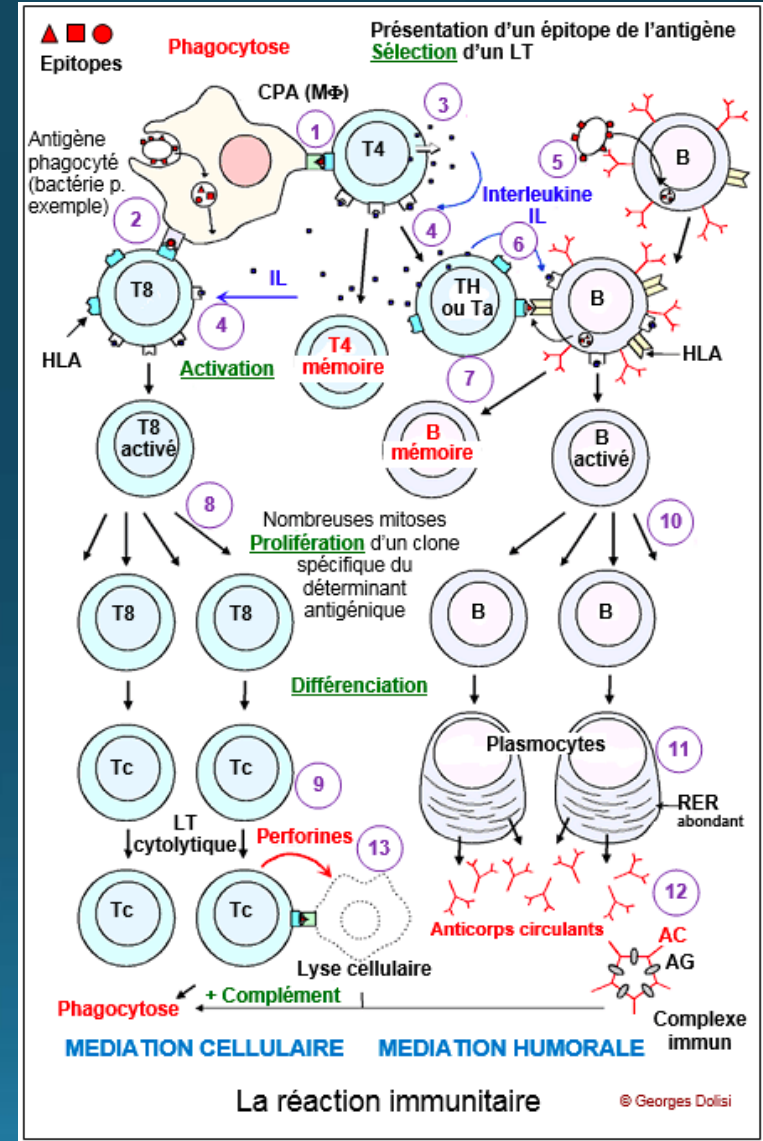
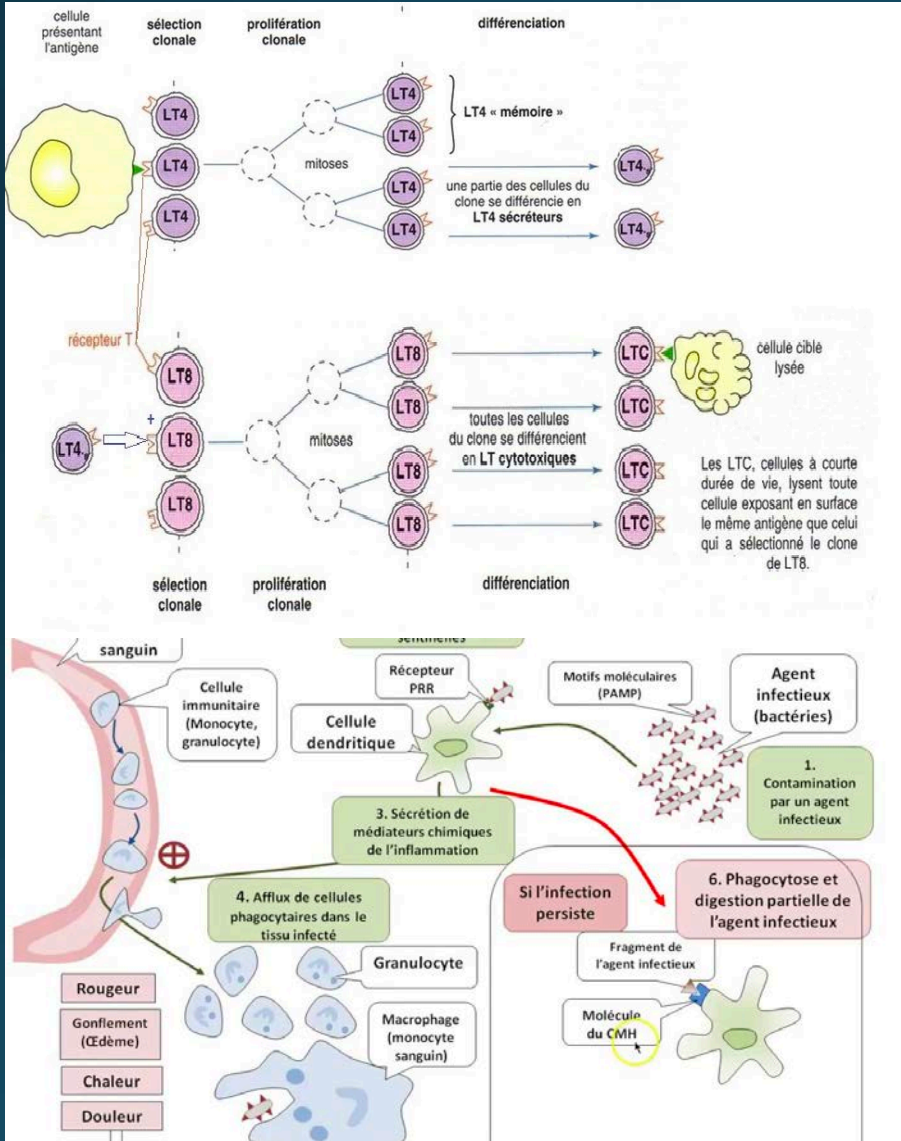
Hôpital Ambroise Paré
JD Werthel



Diplôme Inter-Universitaire d'Arthroscopie

Aix-Marseille, Bordeaux II, Brest, Caen, Clermont-Ferrand, Grenoble, Lille,
Lyon I, Nancy – Université de Lorraine, Nice, Nîmes-Montpellier, Paris VII,
Paris XIII, Rennes, Rouen, Strasbourg I, Toulouse, Tours, Versailles Saint-Quentin

Facteurs Cellulaires



Comment améliorer la cicatrisation des ruptures réparables?



- Indications

- Technique

- Péri- / Post-op



INDICATIONS

Rétraction



Longueur Moignon Tendineux



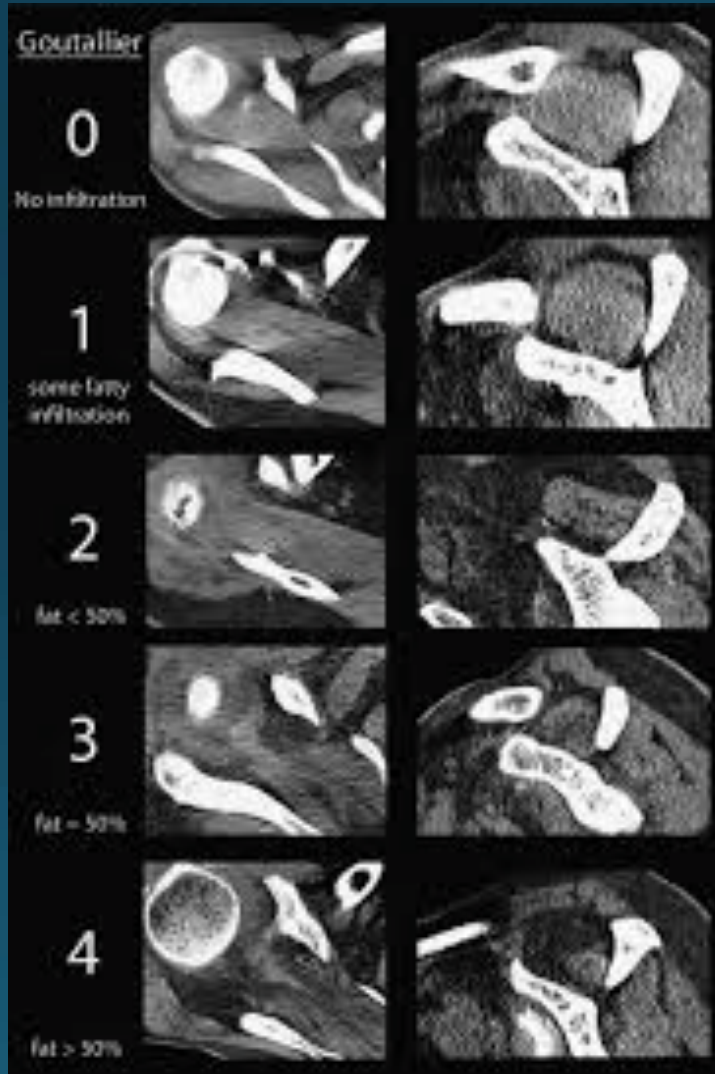
> 15 mm



< 15 mm



Infiltration Graisseuse



Délai

- Tendinopathie chronique vs rupture
aigüe
→ différentes cellules / réponse
inflammatoire



Are inflammatory cells increased in painful human tendinopathy? A systematic review

Benjamin John Floyd Dean,¹ Peter Gettings,² Stephanie Georgina Dakin,¹
Andrew Jonathan Carr¹

Délai

- Rupture taille petite / moyenne

A comparison of early versus delayed repair of traumatic rotator cuff tears

Michael E. Hantes · Georgios K. Karidakis ·
 Mariana Vlychou · Sokratis Varitimidis ·
 Zoe Dailiana · Konstantinos N. Malizos



• 3 semaines !

Table 2 Comparisons of the constant and the UCLA scores between patients with an intact and a retear of the rotator cuff

	Acute repair group			Delayed repair group		
	Intact	Retear	<i>P</i> value	Intact	Retear	<i>P</i> value
Constant score	83 (58–93)	81 (54–90)	NS	76 (44–89)	61 (36–82)	0.0027
UCLA score	32 (27–34)	31 (23–33)	NS	27 (20–30)	22 (18–27)	0.0041

Délai

- Rupture massive



	<u>chronic</u>	<u>early</u>
• patients	21	21
• f-up (yrs)	10	>2
• pseudoparetic postop	2	0
• reruptured (%)	53	20

Zumstein MA, JBJS A: 2008

Spross C, Arthroscopy: 2019

FdR Intrinsèques

OR cicatrisation

- Facteurs génétiques

12.0 – 17.0

Gwylim SE, JBJS B: 2009

Harvie P, JBJS B: 2004

- Age

5.8 - 8.1

Abate M, BMC: 2010

Moosmayer S, JBJS B: 2009

- Hyperlipidémie (statines?)

2.0 - 4.3

Abboud JA, CORR: 2010

- Tabac + subst. nicot.

1.7 - 4.2

Baumgarten KM, CORR: 2010

Galatz L et al., 2006, JBJS Am

- Diabète

2.1

Clement ND, JBJS B: 2010

- HTA

2.1

Gumina S, JSES: 2012

- Alcool

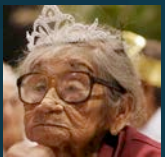
1.8

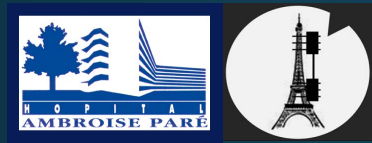
Passaretti D, Acta Orthop: 2016

- Obésité → IG +++

???

Anwander H, Zumstein MA: Eur J Trauma Emerg Surg, 2019





TECHNIQUE



Progrès Techniques?



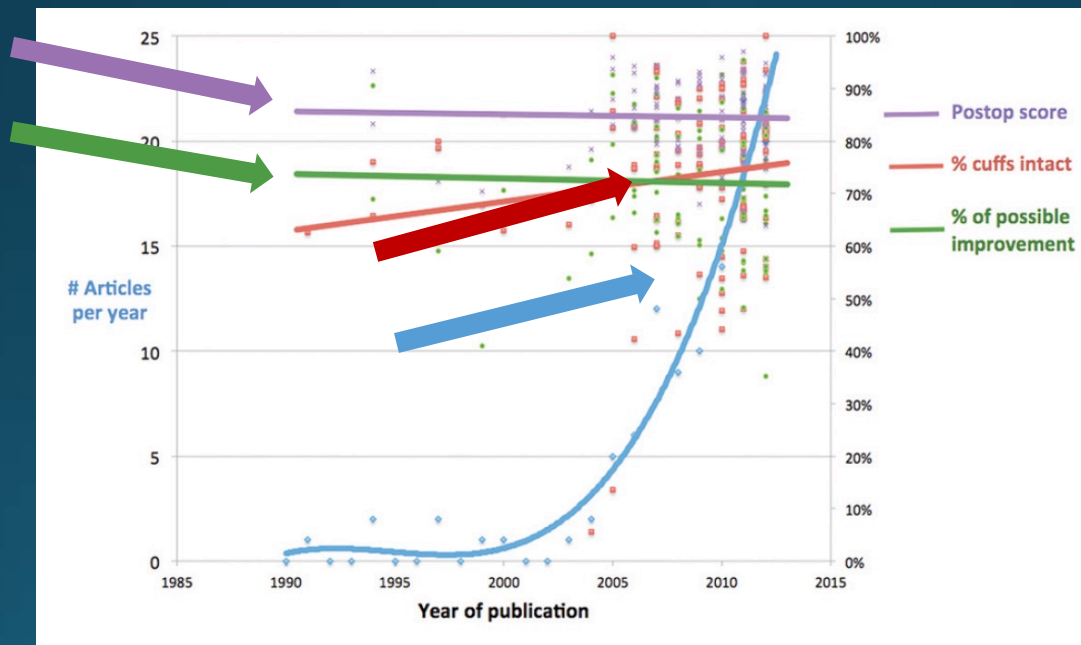
Rotator Cuff Repair

Published Evidence on Factors Associated With Repair Integrity and Clinical Outcome

Matthew D. McElvany,* MD, Erik McGoldrick,* MD, Albert O. Gee,* MD, Moni Blazej Neradilek,† MS, and Frederick A. Matsen III,** MD

Investigation performed at the University of Washington, Seattle, Washington, USA

Méta-analyse
2383 études



Simple rang ? Double rang?



Outcomes of Single-Row and Double-Row Arthroscopic Rotator Cuff Repair: A Systematic Review

By Paul Saridakis, BS, and Grant Jones, MD

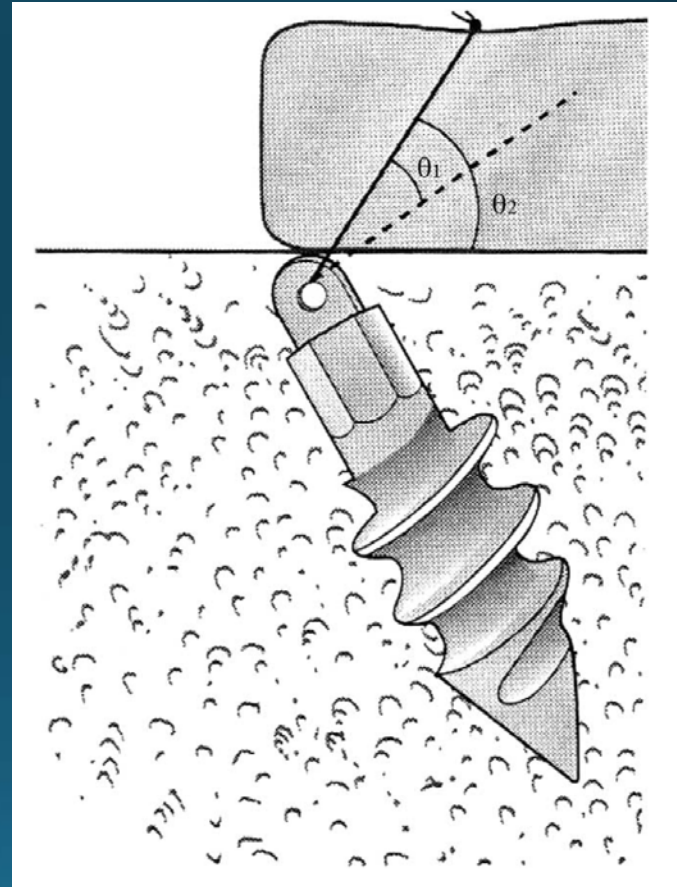
Investigation performed at the Department of Orthopaedics, The Ohio State University, Columbus, Ohio

Summary of Evidence

We performed this systematic review of the literature to determine whether arthroscopic single-row fixation is equivalent to double-row fixation in terms of clinical outcomes and the structural integrity of the repair. We found evidence supporting our hypothesis that these two surgical techniques were not different in terms of postoperative ASES, UCLA, and Constant scores. However, Park et al.¹⁶ stratified their results on the basis of tear size and found that large-to-massive tears (≥3 cm) repaired with double-row fixation had significantly improved outcomes in terms of ASES scores (p = 0.01) and Constant scores (p < 0.01) in comparison with those repaired with single-row fixation. None of the other studies stratified results on the basis of rotator cuff tear size.

Positionnement des ancres? (angulation)

- Rang médial:
insertion à 90° .
- Parfois difficile à
cause de l'acromion
→ adduction +++
- Rang latéral:
insertion à 90°



Positionnement des ancres? (stock osseux)



- Rang médial:
proche du cartilage

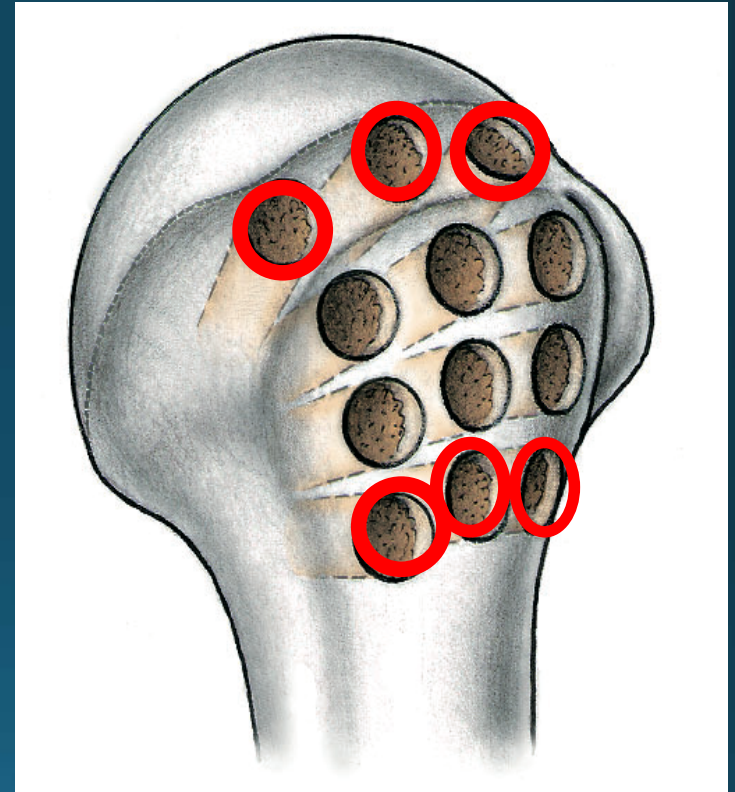
- Rang latéral: 15 mm
sous sommet du
tubercule majeur

5 mm

10 mm

15 mm

20 mm



Facteurs de croissance?

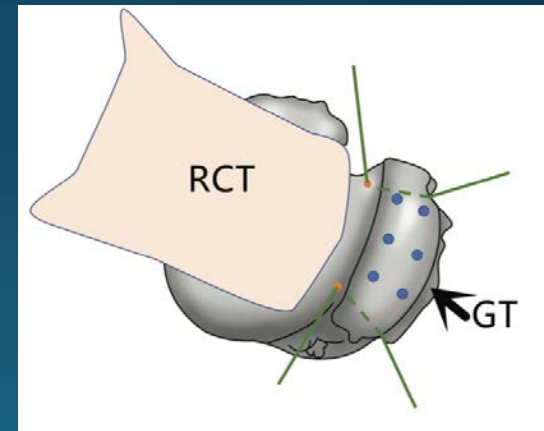


- Microfractures 1-3 mm

Pulatkan A, JSES: 2019
Sun, AJSM 2020

- Améliore cicatrisation
coiffe

- Améliore résultats
fonctionnels



Acromioplastie Conventionnelle? Latérale?



- Etudes prospectives randomisées
→ Aucune différence significative

Gartsman et al., JSES: 2004
Milano et al, Arthroscopy 2007
Mac Donald et al, JBJS AM 2011
Romeo et al, ASES 2015

- CSA > 38 ° OR 14.8 re-rupture

Garcia et al., JSES: 2016
Li et al., AJSM 2016

- Acromioplastie conventionnelle diminue significativement CSA (2/3 des cas < 35° en postop)

Billaut A et al., AOTS 2019





PERI- / POST-OP

Pas d'AINS



- AINS diminuent la résistance à la traction

Cohen DB, AJSM: 2006

- AINS diminuent les propriétés biomécaniques de tendon de coiffe réparé

Chechik O, AOTS: 2014

- Administration précoce d'AINS (J0-J7) → effet délétère sur cicatrisation tendineuse

Connizzo BK, CORR: 2014



Immobilisation ? Kine ?



- Pas d'immobilisation après RCR taille petite / moyenne (< 3 cm)

- A 6 mois:
 - Pas de différence en terme de cicatrisation
 - Meilleure fonction
 - Moins de douleur

Tirefort J et al. JBJS 2019

- Immobilisation → meilleure cicatrisation tendineuse
- Mobilisation passiv immédiate → meilleurs résultats fonctionnels

Arndt J et al. OTSR 202

- Méta-analyse → pas de différence significative en terme de cicatrisation tendineuse

Shen C, AOTS: 2014

• Indications

- Technique

- Péri- / Post-op

