

26TH ANNUAL
TAMPA
SHOULDER COURSE
ARTHROPLASTY & SPORTS



Tampa Marriott Waterside Hotel | Tampa, FL

ARGUMENT FOR THE PEEL

George S. Athwal, MD, FRCSC
Professor of Surgery

ROTH | MCFARLANE
HAND & UPPER LIMB CENTRE
ST. JOSEPH'S HEALTH CARE LONDON

26TH ANNUAL
TAMPA
SHOULDER COURSE
ARTHROPLASTY & SPORTS



CONTROVERSY!

TENOTOMY

Vs

PEEL

Vs

OSTEOTOMY



BIOMECHANICS

A biomechanical evaluation of three surgical techniques for subscapularis repair

Gregory R.
Robert Pec

Biomechanical comparison of lesser tuberosity osteotomy versus subscapularis tenotomy in total shoulder arthroplasty

Steven A.
Akin Cil,
Scott P.

Biomechanical similarities among subscapularis repairs after shoulder arthroplasty

Geoffrey
Shane J.
Anthony

Biomechanical testing of small versus large lesser tuberosity osteotomies: effect on gap formation and ultimate failure load

Matthew
Mark May
J. Michael

Effect of lesser tuberosity osteotomy size and repair construct during total shoulder arthroplasty

Christ
Martir
Carme

Subscapularis repair after shoulder arthroplasty: Biomechanical and clinical validation of a novel technique



Schulich
MEDICINE & DENTISTRY

Sumant G. Krishnan, MD*, David G. Stewart, MD, John R. Reineck, MD, Kenneth C. Lin, MD, Jonathan E. Buzzell, MD, Wayne Z. Burkhead, MD

BIOMECHANICS

	Tenotomy	Peel	LTO
Van den Berghe et al			
Krishnan et al			
Van Thiel et al (Rush)			
Giuseffi et al (Mayo)			

BIOMECHANICS

	Tenotomy	Peel	LTO
Van den Berghe et al	✓	✗	✓✓
Krishnan et al			
Van Thiel et al (Rush)			
Giuseffi et al (Mayo)			

BIOMECHANICS

	Tenotomy	Peel	LTO
Van den Berghe et al	✓	✗	✓✓
Krishnan et al	✗	N/A	✓
Van Thiel et al (Rush)			
Giuseffi et al (Mayo)			

BIOMECHANICS

	Tenotomy	Peel	LTO
Van den Berghe et al	✓	✗	✓✓
Krishnan et al	✗	N/A	✓
Van Thiel et al (Rush)	✓	✓	✓
Giuseffi et al (Mayo)			

BIOMECHANICS

	Tenotomy	Peel	LTO
Van den Berghe et al	✓	✗	✓✓
Krishnan et al	✗	N/A	✓
Van Thiel et al (Rush)	✓	✓	✓
Giuseffi et al (Mayo)	✓	N/A	✗

BIOMECHANICS

	Tenodesis ????????	Foot ??????	LTO
Van den Berghe et al	✓	✗	✓✓
Krishnan et al	✗	N/A	✓
Van Thiel et al (Rush)	✓	✓	✓
Giuseffi et al (Mayo)	✓	N/A	✗



PYRAMID OF CLINICAL EVIDENCE BASED MEDICINE



PEEL VERSUS LTO





2012

Comparison of Lesser Tuberosity Osteotomy to Subscapularis Peel in Shoulder Arthroplasty

A Randomized Controlled Trial

Peter L.C. Lapner, MD, FRCSC, Elham Sabri, MSc, Kawan Rakhra, MD, FRCPC,
Kimberly Bell, BA, and George S. Athwal, MD, FRCSC

Investigation performed at the University of Ottawa, Ottawa, and the University of Western Ontario, London, Ontario, Canada





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2012

- Primary outcome: Subscapularis strength hand dynamometer
- Secondary outcomes:
 - WOOS
 - ASES
 - Constant



Level of Evidence: I



SAMPLE SIZE

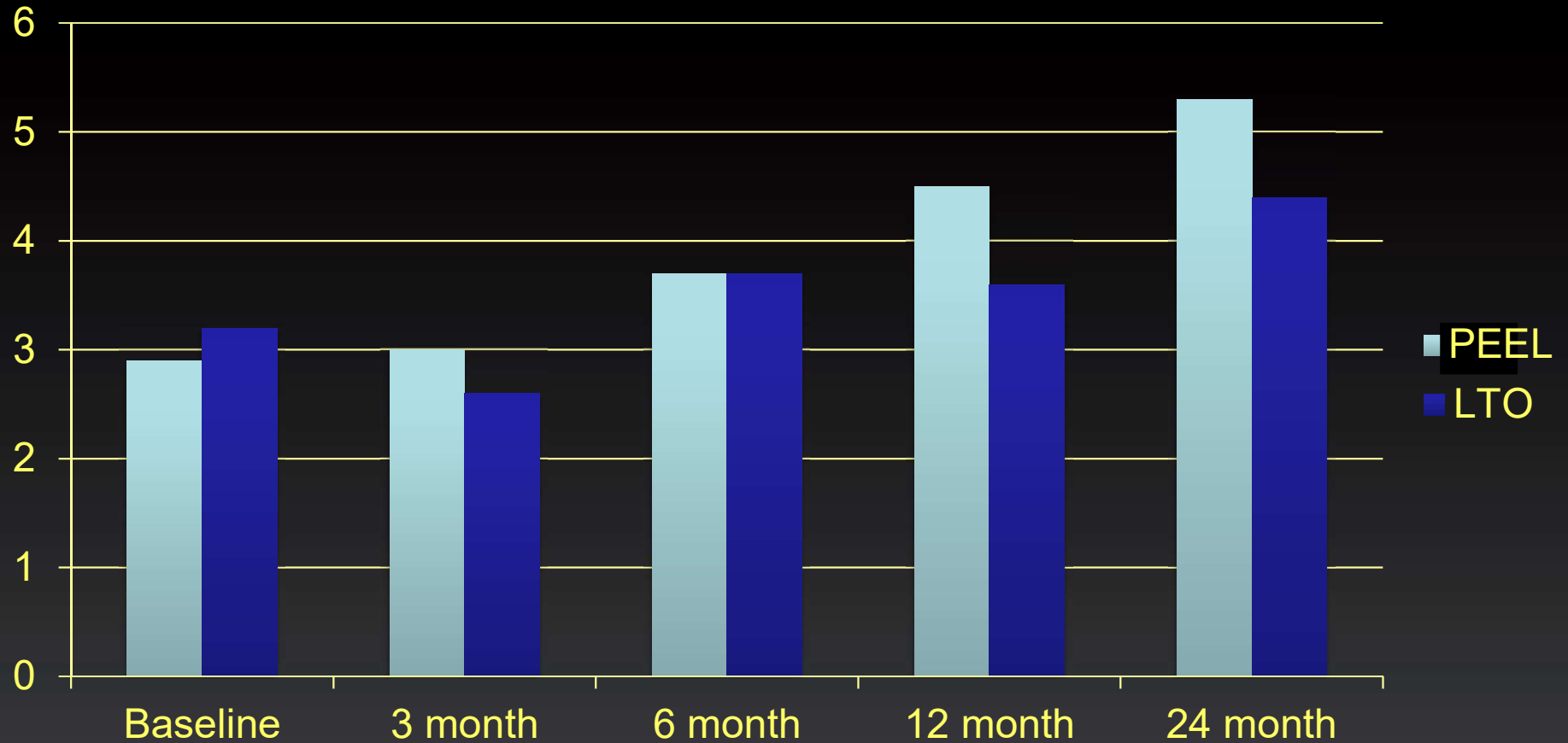
- Mean Strength 1.9kg, SD 2.4 kg
- Effect size = 0.79, $\beta=0.1$, $\alpha=0.05$
- Assume 15% loss to follow-up
- 40 participants per group



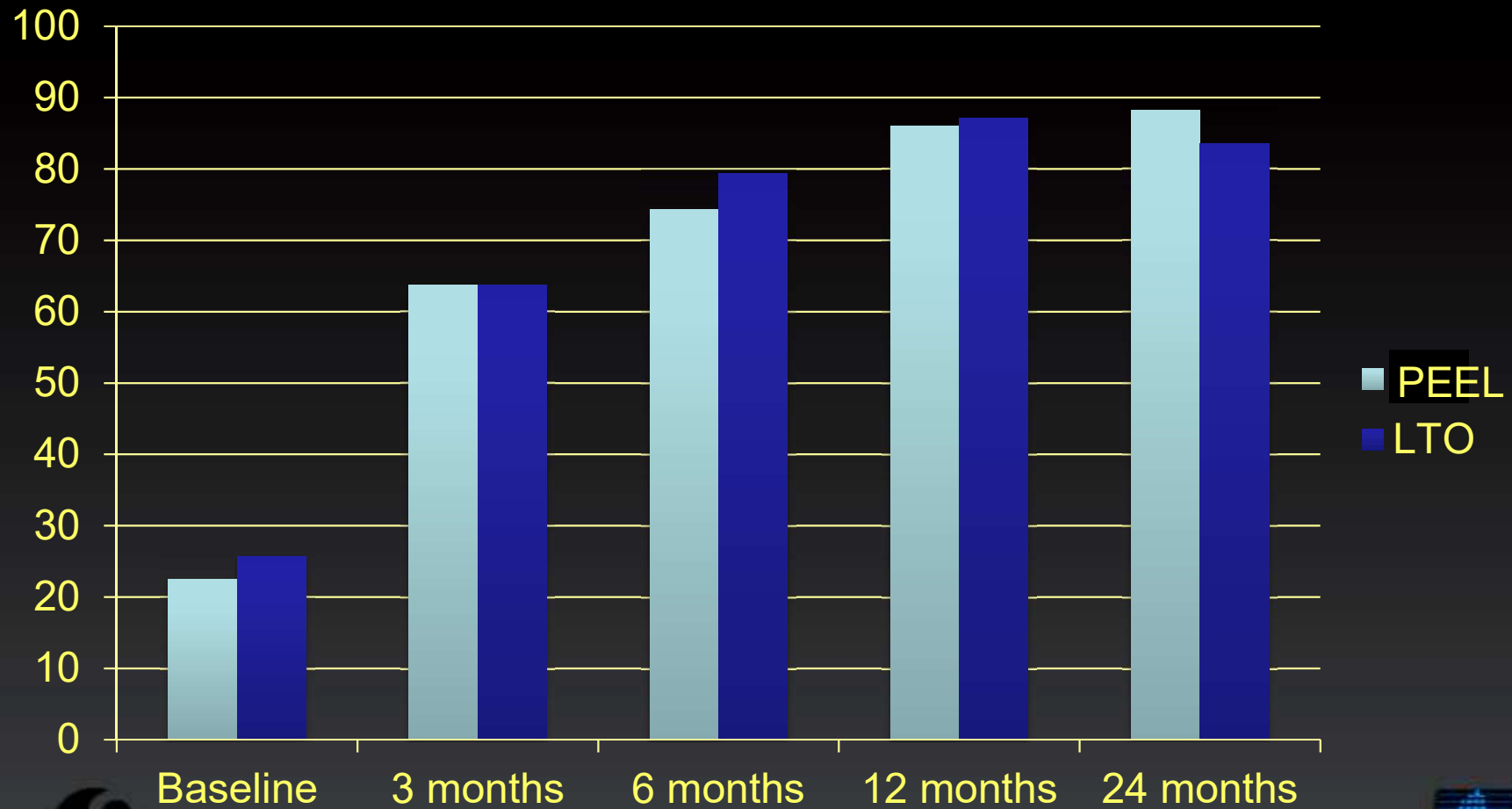
RESULTS



SUBSCAPULARIS STRENGTH



WOOS SCORES



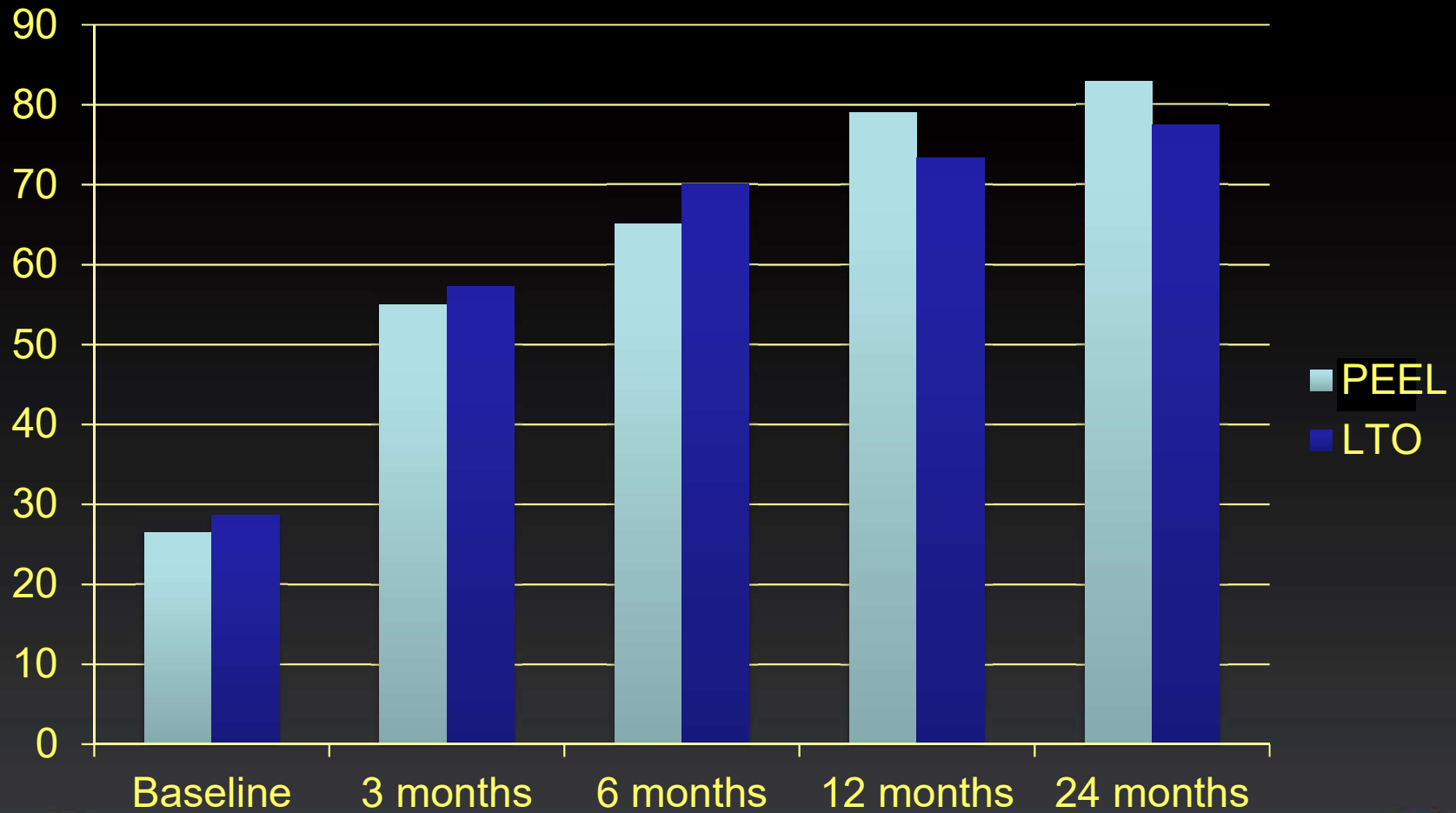
Schulich
MEDICINE & DENTISTRY

Level of Evidence: I

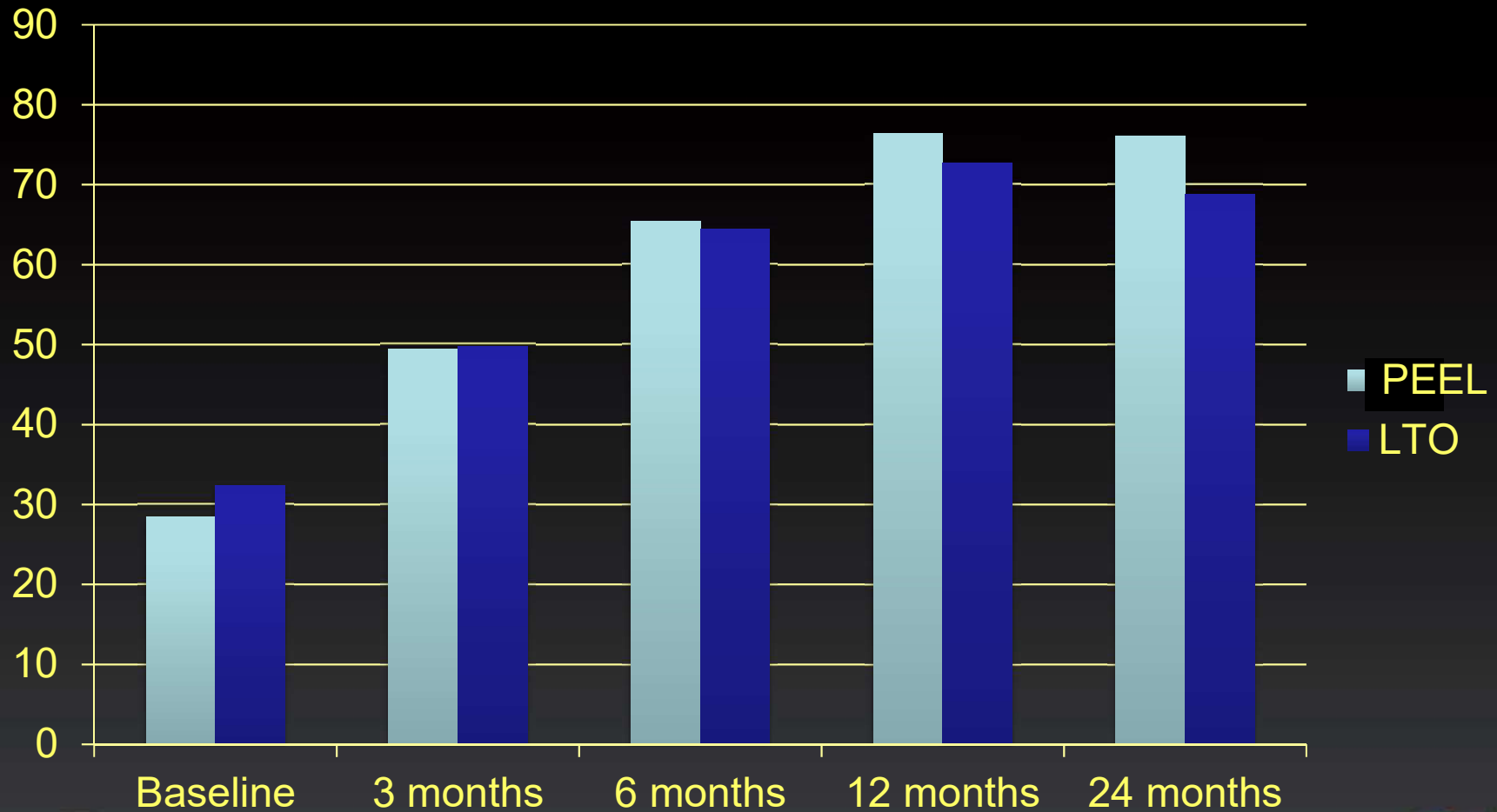
HULC Shoulder



ASES SCORES



CONSTANT SCORES



HEALING RATES?

Healing rates and subscapularis fatty infiltration after lesser tuberosity osteotomy versus subscapularis peel for exposure during shoulder arthroplasty

Peter L.C. Lapner, MD, FRCSC^{a,*}, Elham Sabri, MSc^b, Kawan Rakhra, MD, FRCSC^c, Kimberly Bell, BA^d, George S. Athwal, MD, FRCSC^e

2013

^aThe Ottawa Hospital, University of Ottawa, Ottawa, ON, Canada

^bClinical Epidemiology Program, Ottawa Hospital Research Institute, Ottawa, ON, Canada

^cDepartment of Diagnostic Imaging, The Ottawa Hospital, University of Ottawa, Ottawa, ON, Canada

^dDivision of Orthopaedics, The Ottawa Hospital, Ottawa, ON, Canada

^eSt Joseph's Health Care, Hand and Upper Limb Centre, University of Western Ontario, London, ON, Canada

- No statistically significant difference



STUDY 1: SUMMARY

- No significant differences: Strength
- No significant differences: WOOS, ASES, Constant, and Healing rates
- Take Home Message:

STUDY 1: SUMMARY

- No significant differences: Strength
- No significant differences: WOOS, ASES, Constant, and Healing rates
- Take Home Message:

Do Whatcha Like



WHAT ABOUT STEMLESS?





ELSEVIER

Subscapularis management in stemless total shoulder arthroplasty: tenotomy versus peel versus lesser tuberosity osteotomy

William R. Aibinder, MD^a, Ryan T. Bicknell, MD, MSc, FRCSC^{b,c}, Stefan Bartsch, MD^d, Markus Scheibel, MD^{e,f}, George S. Athwal, MD, FRCSC^{a,*}



JOURNAL OF
SHOULDER AND
ELBOW
SURGERY

2019



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HULC Shoulder





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JOURNAL OF
SHOULDER AND
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SURGERY

2019

- 188 stemless implants @ 2 years
 - 68 tenotomy
 - 65 peel
 - 55 LTO





Subscapularis management in stemless total shoulder arthroplasty: tenotomy versus peel versus lesser tuberosity osteotomy

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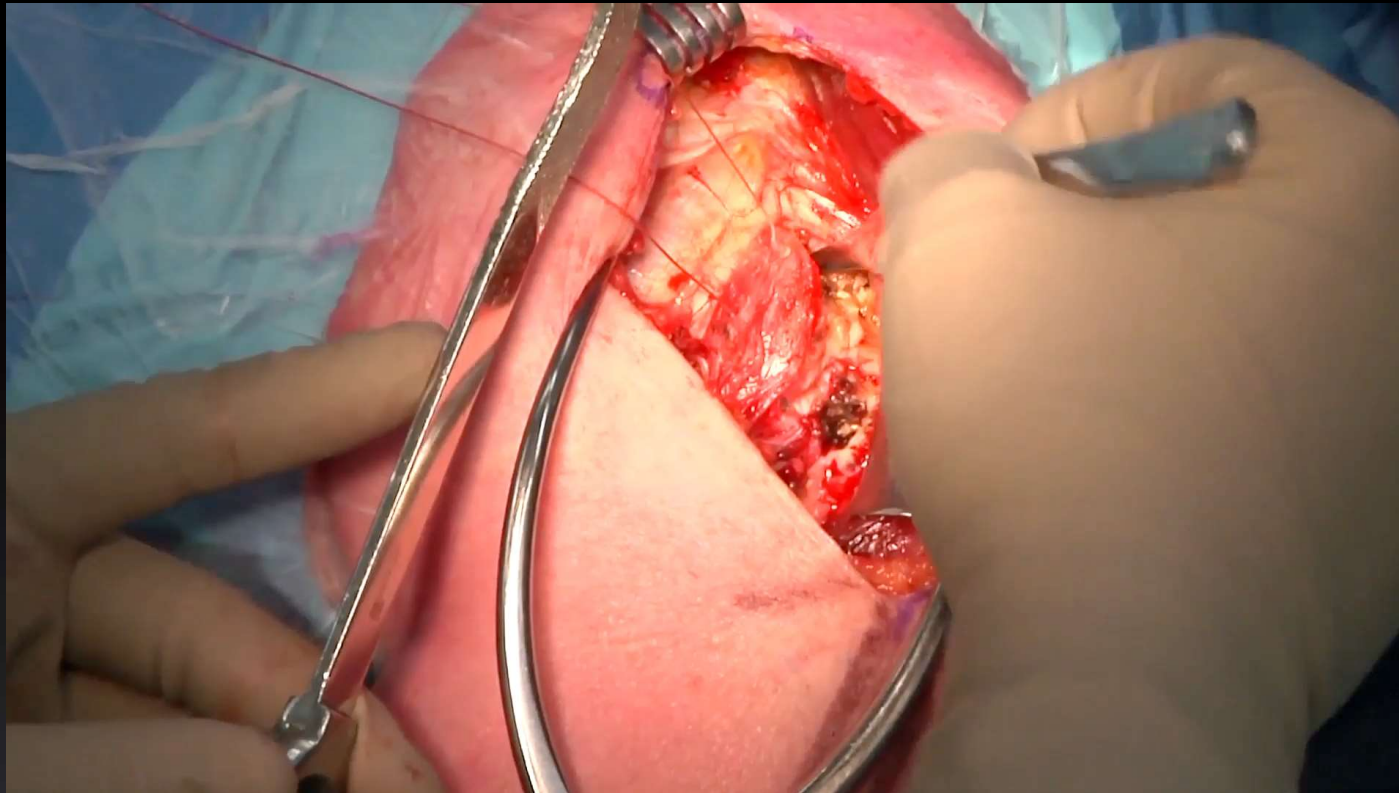
JOURNAL OF
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ELBOW
SURGERY

2019

- 188 stemless implants @ 2 years
 - 68 tenotomy
 - 65 peel
 - 55 LTO
- 2 years follow-up
 - ASES & VAS $p > 0.19$
 - ROM



WHY I DO THE PEEL

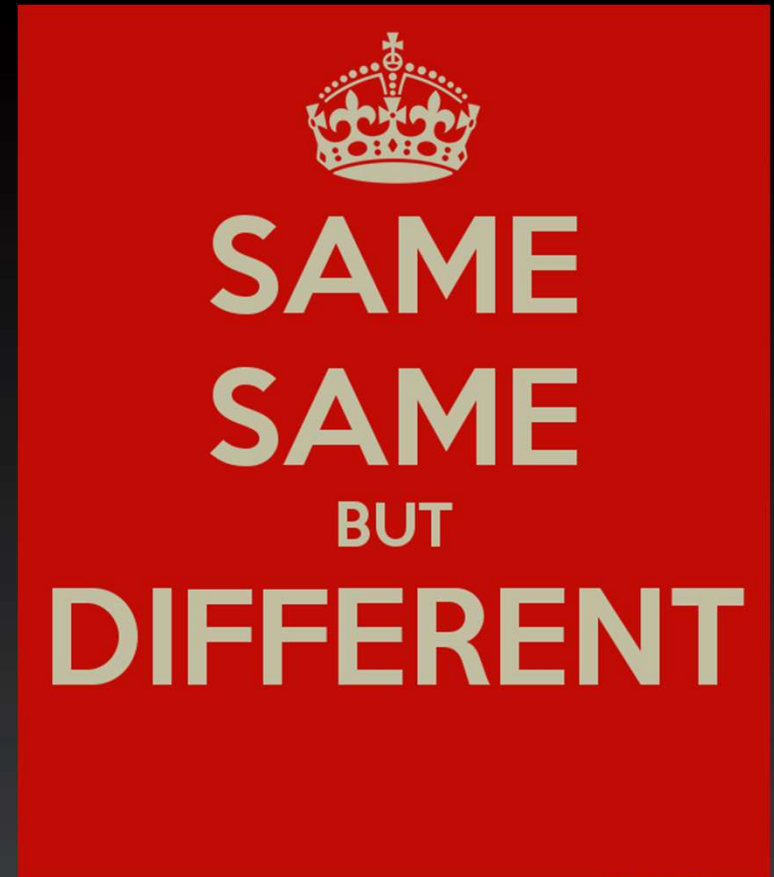


- Easy to do
- Easy to teach
- Versatile
- Reproducible



SUMMARY

- Stemmed Level 1
 - No difference
- Stemless Level 3
 - No difference





THANK

**Jan 20-22
2022**

YOU



Utah, USA

CONTROVERSY!



**KEEP
CALM
AND**



Schulich
MEDICINE & DENTISTRY

HULC Shoulder



CONTROVERSY!



**KEEP
CALM**

AND

**Make
Educated Decisions**