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Medical College**  
at Thomas Jefferson University

# Anatomic Shoulder Arthroplasty Short Stem is Best

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Surgery

# Disclosures

- Consultant

- Aevumed
- DJO

- Royalties

- DJO
- Depuy
- Wolters Kluwer

- Intellectual Properties/Ownership

- Aevumed
- Parvizi Surgical Innovations
- OBERD
- Cross current business analytics

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- AAOS 2020 Nominating Committee– Chair
- AAOS Governance Committee
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- Research Support

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# Gold Standard



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# Problems



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# Short Stems: Potential Advantages

- Fewer diaphyseal complications
- Less blood loss
- Easier revision
- Still convertible



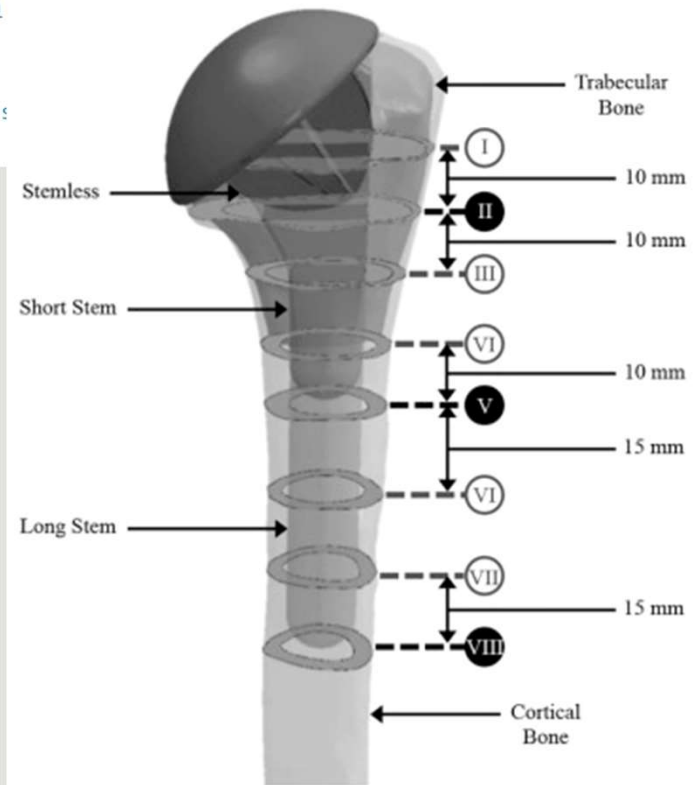
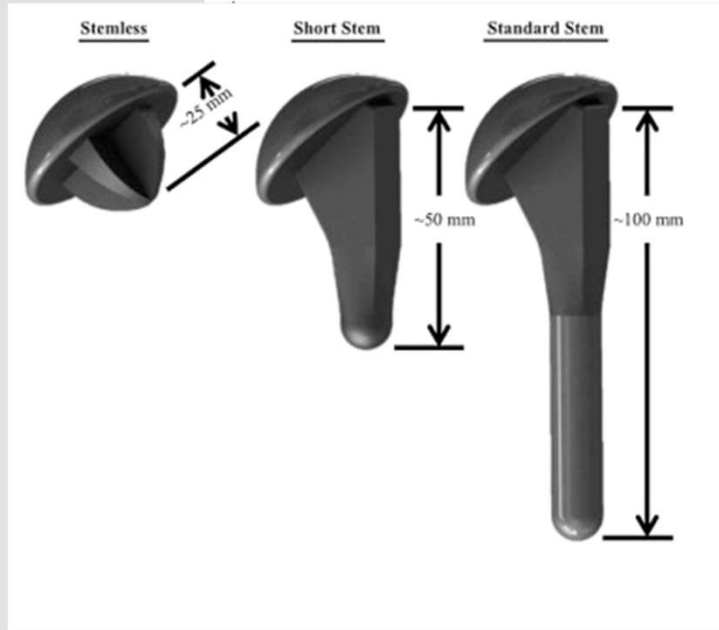
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## Comparison of proximal humeral bone stresses between stemless, short stem, and standard stem length: a finite element analysis

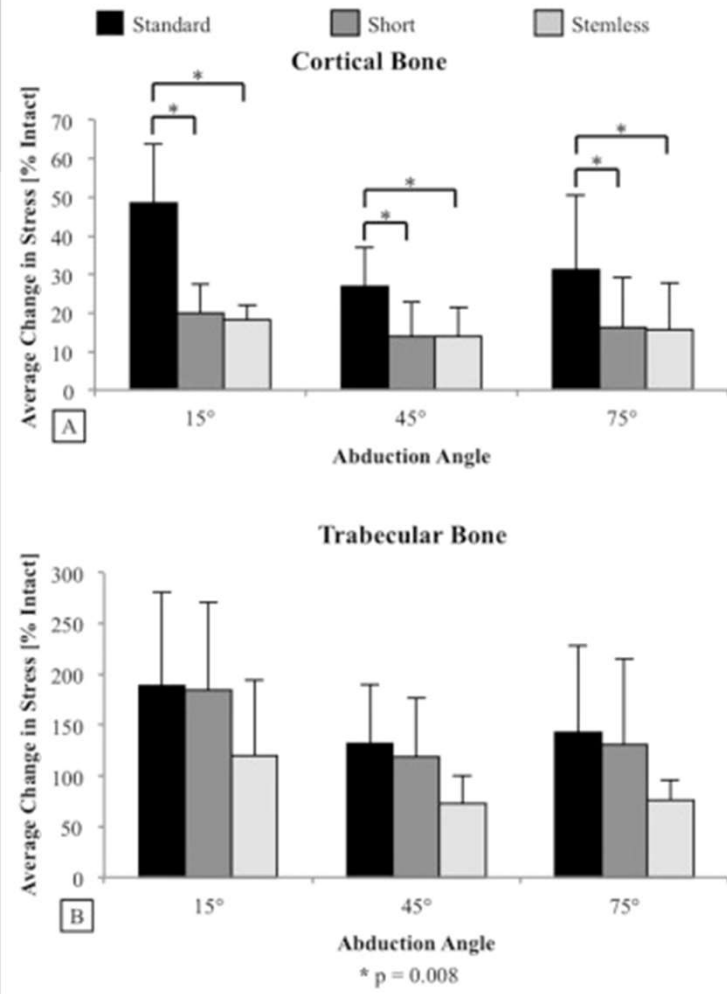
Najmeh Razfar MSc<sup>a,b,c</sup>, Jacob M. Reeves MSc<sup>b,c</sup>, Daniel G. Langohr MSc<sup>a,b,c</sup>, Ryan Willing PhD<sup>d</sup>, George S. Athwal MD, FRCSC<sup>a,b,c</sup>, James A. Johnson PEng, PhD<sup>a,b,c</sup>





## Comparison of proximal humeral bone stresses between stemless, short stem, and standard stem length: a finite element analysis

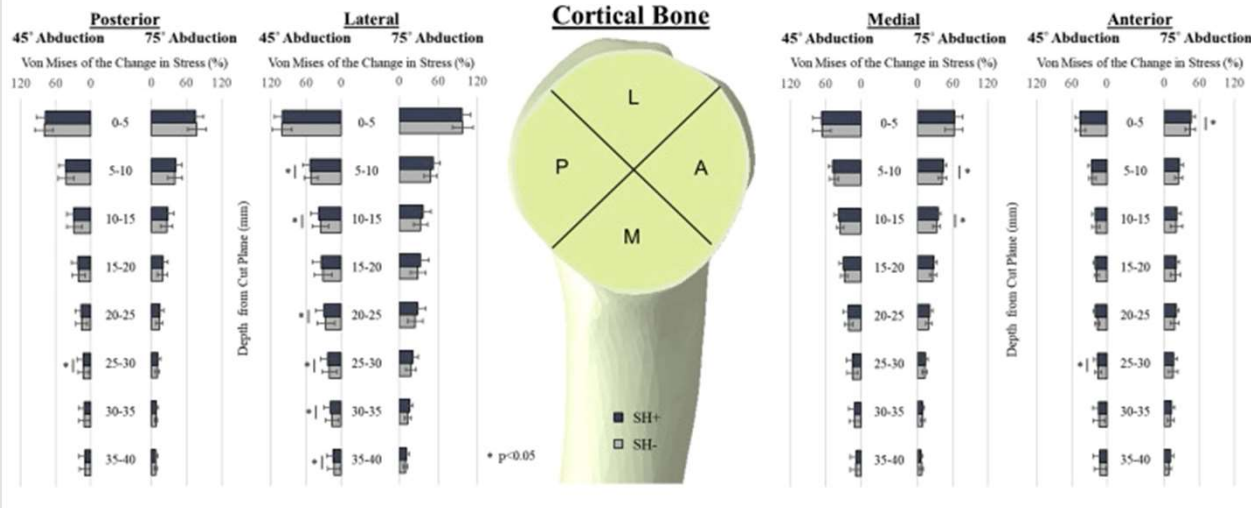
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# Stem Size Affects Stress Shielding

## The effect of short-stem humeral component sizing on humeral bone stress

G. Daniel G. Langohr PhD, Jacob Reeves MESC, Christopher P. Roche MSE, MBE, Kenneth J. Faber MD, MHPE, FRCSC, James A. Johnson PhD

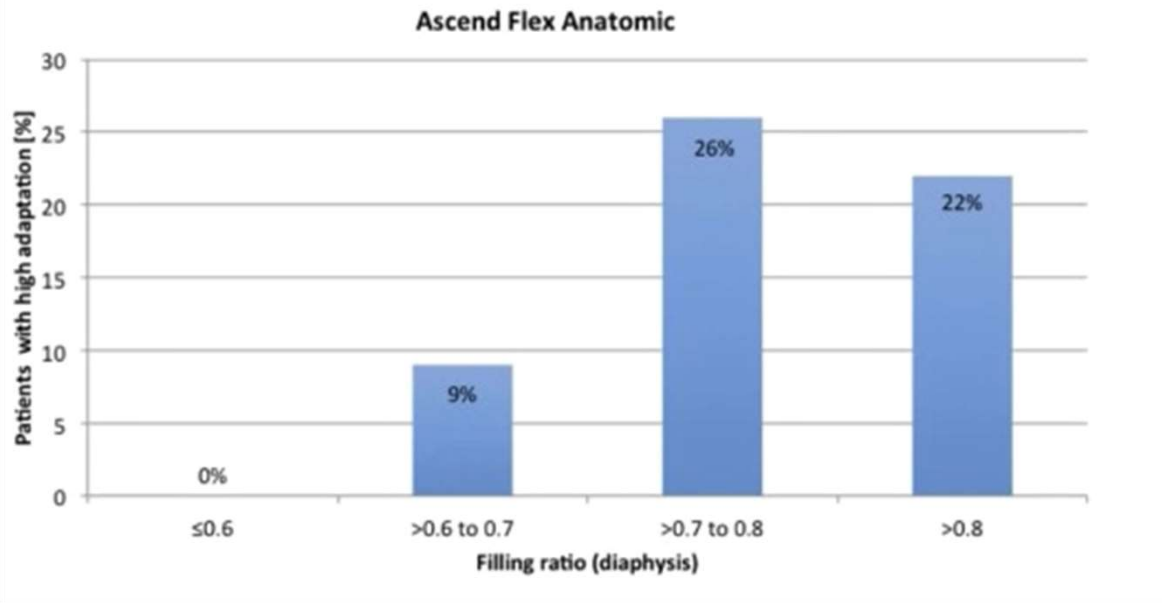




# Fill Ratio versus Radiographic Adaptation

## Postoperative radiographic findings of an uncemented convertible short stem for anatomic and reverse shoulder arthroplasty

Patric Raiss MD<sup>a</sup>, Marc Schnetzke MD<sup>b</sup>, Thomas Wittmann<sup>a</sup>, Christopher M. Kilian MD<sup>c</sup>, T. Bradley Edwards MD<sup>c</sup>, Patrick J. Denard MD<sup>d,e</sup>, Lionel Neyton MD<sup>f</sup>, Arnaud Godenèche MD<sup>f</sup>, Gilles Walch MD<sup>f</sup>





# Short-term clinical outcome of an anatomic short-stem humeral component in total shoulder arthroplasty

Anthony A. Romeo MD <sup>a</sup>, Robert J. Thorsness MD <sup>a</sup>, Shelby A. Sumner <sup>a</sup>, Reuben Gobezie MD <sup>b</sup>, Evan S. Lederman MD <sup>c</sup>, Patrick J. Denard MD <sup>d</sup>

Table I. Preoperative and postoperative clinical outcomes

	Preoperative	Postoperative	
VAS	6	2	<i>P</i> < .001
ASES	37	80	<i>P</i> < .001
SANE	32	84	<i>P</i> < .001
SST	4	10	<i>P</i> < .001
AFE	116°	148°	<i>P</i> < .001
ER	30°	57°	<i>P</i> < .001

VAS, visual analog scale; ASES, American Shoulder and Elbow Surgeons; SANE, Single Assessment Numeric Evaluation; SST, Simple Shoulder Test; AFE, active forward elevation; ER, external rotation.

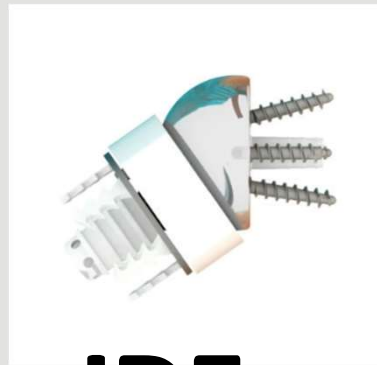
Table II. Characterization of radiolucent lines

Radiolucent lines	Patients	
0 mm	34	60.7%
<0.5 mm	10	17.9%
<1 mm	2	3.6%
1-<2 mm	6	10.7%
>2 mm	4	7.1%



# Short Stems: Potential Advantages

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**IDE**



**Easy Revision**



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# Conclusions

- Short stem is best
- Equal clinical results
- Minimal stress shielding with proper sizing
- Easily convertible



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THANK YOU.



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