

## WHY I PREFER TOTAL SHOULDER ARTHROPLASTY

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### HSA vs TSA IN PATIENTS WITH OSTEOARTHRITIS

Systematic review at long-term follow-up (minimum FU of 7 years)

	323 HSA	1783 TSA
Revision rate	13%	7%
Complication rate	8%	12%
Improvement of flexion	33°	56°
Improvement of abduction	31°	48°
Improvement of ext. Rot.	15°	21°
Pain decrease	4.2	5.5

- ⇒ Significant lower revision rate after TSA
- ⇒ Better shoulder function after TSA

Van den Bekerom et al., Int J Shoulder Surg 2013

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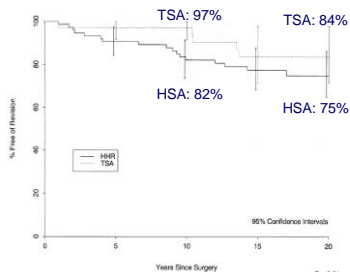
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### SURVIVAL RATE HSA / TSA IN PATIENTS YOUNGER THAN 50 YEARS

- 62 HSA, mean age 39 years
- 29 TSA, mean age 41 years



Sperling JW & Cofield RH JSES 2004

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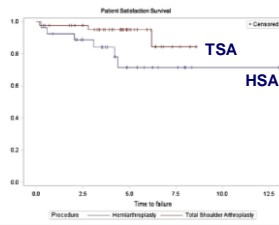


## HSA vs TSA IN PATIENTS AGED 50 YEARS OR YOUNGER



- TSA: n=44, mean age 44 years, FU: 4.9 years
- HSA: n=27, mean age 38 years. FU 5.2 years

### SATISFACTION SURVIVAL



- TSA at 5 years: 95%
- HSA at 5 years: 71.6%

Eichinger JK et al., JSES E-Pub 2015

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## RISK OF REVISION RELATED TO AGE



### Shoulder arthroplasty in patients 59 years of age and younger:

Retrospective cohort study:

- N=2981 primary shoulder arthroplasty
  - 59 years and younger: 504 (207 HA)
  - 60 years and older: 2477 (622 HA)
- FU 2.2 years

- Time to revision: 1.4 years
- Revision rate of TSA 1.4%
- Revision rate of HA 3.9%

Dillon MT et al., JBJS Am 2013

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## RISK OF REVISION RELATED TO AGE



### Shoulder arthroplasty in patients 59 years of age and younger:

Retrospective cohort study:

- Crude revision rate in patients < = 59 years: 5.4%  
with 70.4% revision to TSA
- Crude revision rate in patients > 59 years: 2.5%  
14.3% revision to TSA

- ➔ Younger patients have 2 times higher risk of revision
- ➔ Risk of revision in HA: 4.5
- ➔ Risk of revision in TSA: 1.7

Dillon MT et al., JBJS Am 2013

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## OSTEOARTHRITIS IN PATIENTS YOUNGER THAN 50 YEARS

PRIMARY  
OSTEOARTHRITIS



TSA

SECONDARY  
OSTEOARTHRITIS:  
Posttraumatic  
Avascular necrosis  
Dysplasia



HSA

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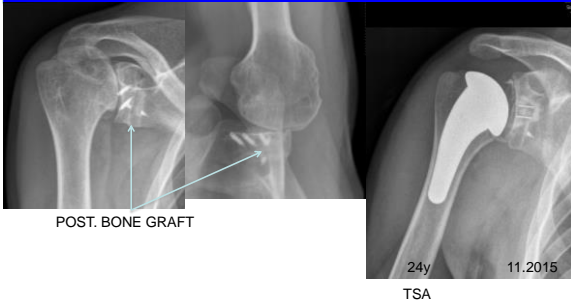
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## INSTABILITY OSTEOARTHRITIS



L.F.16.5.91

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## SUMMARY

- Sign. Lower revision rate after TSA
- Better shoulder function after TSA
- Higher satisfaction rate after TSA
- HSA 2,4x higher risk of revision after 20y



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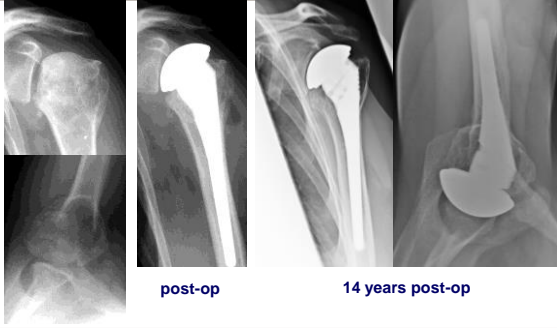
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## POSTTRAUMATIC ARTHRITIS



H.B., 56 years

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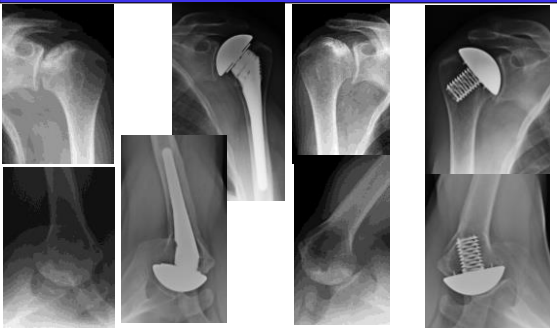
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## AVASCULAR NECROSIS



F.H., 52 years

10 years post-op

7 years post-op

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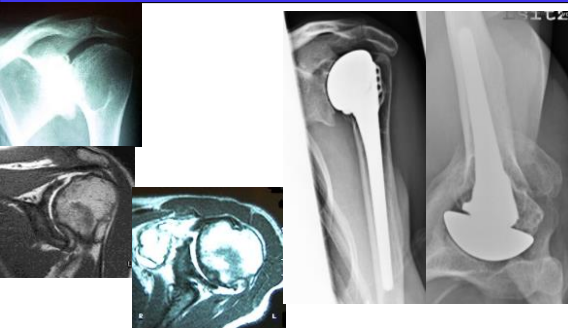
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## DYSPLASIA



P.M., 30 years

18 years post-op

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# GLENOID DYSPLASIA



S.G., 56 years

15 years post-OP

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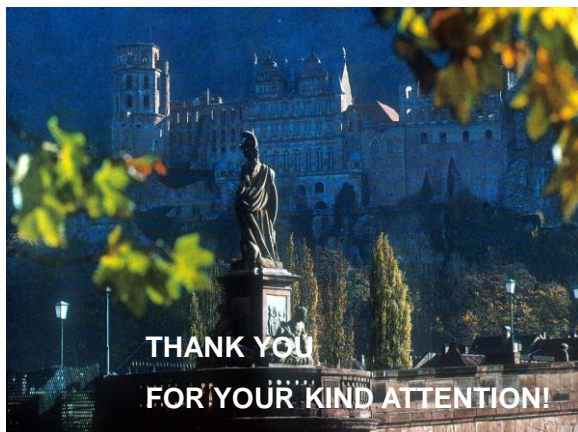
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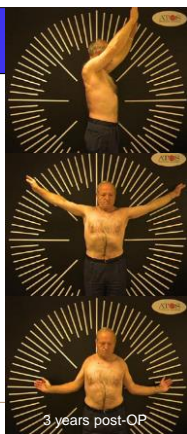
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# GLENOID DYSPLASIA



S.G., 56 years



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## HSA vs TSA IN PATIENTS WITH OSTEOARTHRITIS



### Meta analysis of randomized controlled trials:

- 4 clinical trials
- 79 TSA
- 82 HSA
- FU 2 and 3 years

### TSA:

- Better shoulder function (UCLA and ASES Score)
- No significant difference for revision rate and incidence of instability at 2 years.

Duan X et al., Seminar in Arthritis and Rheumatism 2013

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## HSA WITH BIOLOGICAL GLENOID RESURFACING



	Graft Jacket	Meniscal Allograft	Capsular Interposition
N	6	5	6
FU	16	22	34
Revision Rate	5/6	3/5	4/6
Constant Score	35% pre-op 31% post-op	44% pre-op 58% post-op	47% pre-op 63% post-op

→ Unacceptable early failure rate

Puskas GJ & Gerber C, JSES 2015

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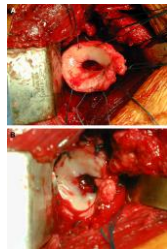
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## HSA WITH & WITHOUT BIOLOGICAL GLENOID RESURFACING IN PATIENTS < 50 YEARS

- N=40
  - 20 HSA  
mean age 33.9 years, FU 3.8 years
  - 20 HSA & biologic glenoid resurfacing (lateral meniscal allograft)  
mean age 37.7 years, FU 3.6 years



- ⇒ HSA:  
failure rate: 6 / 20  
revision rate: 3/20 to TSA after 1.8 – 5.5 years
- ⇒ HSA & BR:  
failure rate: 12 / 20  
revision rate: 6 / 20, conversion to TSA 4 / 20 after 7 months – 3.5 years

Hammond LCDRJ et al., JSES 2013

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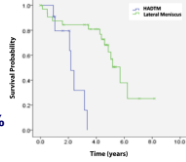
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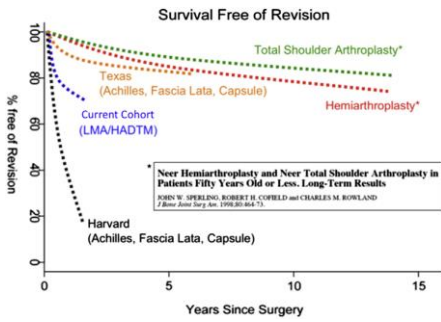
## HSA WITH BIOLOGICAL GLENOID RESURFACING IN YOUNG PATIENTS

- N=41
    - 31 lateral meniscal allograft resurfacing
    - 10 human acellular dermal tissue matrix interposition
  - Age: 42.2 years
  - FU = 2.8 years
- Overall failure rate: 51.2%
- failure rate of lateral meniscal allograft: 45.2%  
mean time to failure: 3.4 years
  - failure rate of dermal tissue matrix interposition: 70%  
mean time to failure: 2.2 years



Strauss EJ et al., JSES 2014

## HSA WITH BIOLOGICAL GLENOID RESURFACING IN YOUNG PATIENTS



Strauss EJ et al., JSES 2014

## HSA vs TSA IN PATIENTS WITH OSTEOARTHRITIS



### Meta-Analysis 2 years post-OP of 50 HSA and 62 TSA

#### TSA provides:

- better pain relief
- better forward elevation
- better functional outcome

Bryant D et al., JBJS Am 2005