

Total Ankle Arthroplasty  
Age/Weight/Co-Morbidities:  
Are there limits?

AS Flemister Jr MD  
Tampa FORE 2017

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Disclosure

I have nothing to disclose

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Why Total Ankle?

- Better Function?
- Preservation of surrounding joints (probably)



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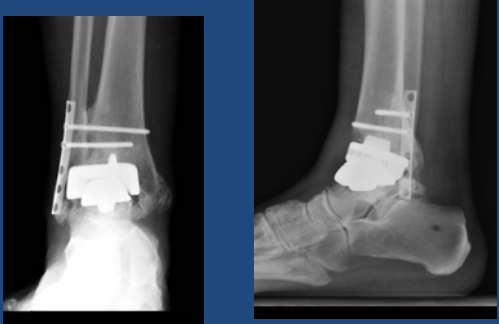
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### Problem: Eventual Failure



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### Goals

Younger Age  
Obesity  
Rheumatoid Arthritis  
Diabetes Mellitus

- How do these factors effect outcome of Total Ankle Arthroplasty?

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### Outcomes in General

- Scandinavian Total Ankle Replacement (STAR)  
Mobile Bearing system
- Salto Talaris  
Fixed Bearing system
- InBone I/II  
Intramedullary fixation system

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### STAR

*Brunner et al JBJS am 2013*

- 77 ankles fu 12.4 yrs mean follow up
- 38% revision of metallic components
- Probability of implant survival  
70.7 % at 10 years,  
45.6 % at 14 yrs



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### STAR

*Daniels et al JBJS am 2015*

- 111 ankle fu 9.0 years
- 12 % revision at mean 4.3 years
- 18% poly failure

*Kerkhoff et al FAI 2016*

- 134 ankles followed min 7.5 yrs
- 78% survival at 10yrs



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### Salto

- *Bonnin et al 2011 CORR*
  - 89 ankles fu 8.9 yrs 35% reoperation, 85% overall survival

- *Nodzo et al 2014 FAI*
  - 98 % survival, 75 implants at 43 months

- *Hofmann et al 2016 JBJS am*
  - 97.5% survival at 5.2 yrs in 81 ankles



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## INBone

*Adams et al JBJS 2014*

- 194 TAA, 3.7 yr fu, implant survival 89%

*Hsu, Haddad JBJS 2015*

- 59 TAA at 35 mo
- 96.6% survival



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## If it fails we'll just fuse it



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## AGE

*Easley & Colleagues  
FAI 2015*

- 395 pts at 3.5 yrs FU
- <55 y/o(81)
- 55-70 (221)
- >70 (93)

No difference in outcomes, wound problems, reoperation, revisions

*Pinto et al FA Surg 2013*

- 103 pts at 41 mo FU
- 2 groups <50 y/o (31)
- or > 50 y/o(72)

No difference in complications or survivorship

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### Obesity



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### Obesity

*Daniels and colleagues JBJS am 2015*

- 39 pts w/BMI > 30 (10 BMI > 40) :3.8yr fu
- 48 pts w/BMI < 30: 3.9 yr fu
- No difference in complications or revisions, outcome improved in all

*Barg et al FAI 2011*

- 123 TARs with BMI > 30
- 6 yr survivorship 93%
- Improvement in pain and function significant

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### Obesity

*Gross et al FAI 2016*

- 266 pts BMI < 30, fu 45 mos
- 116 pts BMI 30-35, fu 43 mos
- 73pts BMI >35, fu 45 mos
- Obese pts had lower function
- Pain, overall functional improvement, revisions all same

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## Obesity

*Haddad & colleagues, FAI 2016*

- 49 pts < 30 BMI, 8.2 yr fu
- 48pts >30 BMI, 7.7 yr fu
- Obese patients with primary OA had increased risk of failure at 5 yrs

*Penner et al JBJS am 2012*

- 145 overweight and obese pts fu at 6mos, 2yrs, 5 yrs
- Successful TAR or fusion
- No change in BMI

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## Rheumatoid Arthritis



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## Rheumatoid Arthritis

- Pedersen et al 2014, JBJS
- 50 pts w/ RA and 50 pts w/out
- Followup 64 mos and 66 mos
- No difference in revisions 7 in RA vs 5
- One deep wound infection in RA, none in other



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## Diabetes Mellitus

*Gross et al FAI 2015*

- 50 pts w/DM vs 50 w/out
- Fu 2.3 yrs vs 3.1 yrs
- 10% in DM had secondary procedure
- 14.5% in control
- No difference in failure rates

*Schipper et al FAI 2015*

- 2973 TAA
- Complication rate
- DM 7.8 % (307 TAA)
- Non diabetic 4.7 % ( 2655)
- Higher rates of transfusion, non home discharge, overall complications in DM

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## My Thoughts

- All TAA will fail eventually
- Salvage is not always successful and often complicated
- Most of the studies have too short of follow up along with other flaws

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## My Thoughts

- Age > 55 y/o if subtalar OA, but I try to get them closer to 60
- Obesity BMI < 35-40
- RA- meticulous soft tissue handling
- DM- HbA1c < 7, no neuropathy
- Need to have detailed discussion with patient about risk factors

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Thank YOU



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