

**FASST**  
Feet & Ankle Symposium & Surgical Techniques

Brought to you in partnership by

**BESPA** **DES MOINES UNIVERSITY**  
GLOBAL MEDICAL & HEALTH SCIENCES

Is Anterior Plating the Gold Standard for Ankle Fusion

---

---

---

---

---

---

---

---

**FASST**  
Feet & Ankle Symposium & Surgical Techniques

Brought to you in partnership by

**BESPA** **DES MOINES UNIVERSITY**  
GLOBAL MEDICAL & HEALTH SCIENCES

Disclosure

- BESPA – Owner
- Extremity Medical – Consultant
- Nextremity – Consultant

---

---

---

---

---

---

---

---

**FASST**  
Feet & Ankle Symposium & Surgical Techniques

Brought to you in partnership by

**BESPA** **DES MOINES UNIVERSITY**  
GLOBAL MEDICAL & HEALTH SCIENCES

Approaches

- Lateral
- Posterior
- Arthroscopic
- Anterior

---

---

---

---

---


---

---

---

**Historical – lateral approach**

- Trans-fibular
- Maintain subchondral bone
- Can make parallel cuts of articular surfaces
- Bone grafting is easy
- Cross screw fixation
- Lateral plate?



**FASST**  
Faculty of Health Sciences  
 University of Toronto  
**BESPA**  
Best Evidence Surgical Practice Association

---

---

---

---

---


---

---

---

**Transfibular Osteotomy**

- Longitudinal divide the fibula
  - Acts as a biologic plate that reinforces the lateral side
- Can resect the fibula completely
- Difficult to prepare medial gutter
  - Vertical surface – no compression
- Can correct valgus deformity well
  - Bone graft the defect



**FASST**  
Faculty of Health Sciences  
 University of Toronto  
**BESPA**  
Best Evidence Surgical Practice Association

---

---

---

---

---


---

---

---

**Posterior approach**

- Achilles transection
  - Loss of strength not issue in fusions
- Scarring of FHL
- Difficult to prep entire joint
- Must feather subchondral bone instead of drill



**FASST**  
Faculty of Health Sciences  
 University of Toronto  
**BESPA**  
Best Evidence Surgical Practice Association

---

---

---

---

---

---


---

---

**Posterior approach**

**FASST**  
Faculty of Anesthesiology and Intensive Care Medicine  
DESPA DELMONDYTT  
UNIVERSITÄT

- Blade plate fixation
  - No longer available
- Posterior plate
  - Only a few companies offer TT plate only
  - Several offer TTC pplate




---

---

---

---

---

---

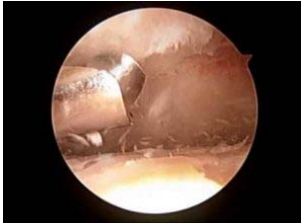
---

---

**Arthroscopic Approach**

**FASST**  
Faculty of Anesthesiology and Intensive Care Medicine  
DESPA DELMONDYTT  
UNIVERSITÄT

- Good visualization
- Power burr to prepare joint
- Burr to bleeding bone
- Maintains soft tissue envelope
  - Vascularity
- Cross-screw fixation




---

---

---

---

---

---


---

---

**Arthroscopic Ankle Fusion**

**FASST**  
Faculty of Anesthesiology and Intensive Care Medicine  
DESPA DELMONDYTT  
UNIVERSITÄT

- May be more time consuming or faster
  - Dependent on arthroscopy skills
- Difficult to add bone graft
  - Can add biologics
- Not ideal for deformity cases
- Morbidly obese?
- Poor candidates for open




---

---

---

---

---


---

---

---

### Anterior Approach

- Fusion versus TAR
- Can go through floor of EHL tendon
  - Preferred approach
- Can go through floor of AT tendon
- Scarring of tendon is potential problem
- Wound healing can be an issue
  - Careful soft tissue handling
  - Use of PRP is greatly helpful



FASST logo: FASST - Foot and Ankle Society of the American Orthopedic Association, a division of the American Orthopedic Association. Also includes logos for BESPA and The University of Michigan.

---

---

---

---

---


---

---

---

### Anterior Plating

- Can visualize entire joint
  - Medial and lateral gutters
- Easy joint prep
- Osteophyte excision
  - Blocking reduction
- Easy to bone graft
- Deformity correction
- Maintains height



FASST logo: FASST - Foot and Ankle Society of the American Orthopedic Association, a division of the American Orthopedic Association. Also includes logos for BESPA and The University of Michigan.

---

---

---

---

---

---

---

---

### Anterior Plates

- Multitude of plates available



FASST logo: FASST - Foot and Ankle Society of the American Orthopedic Association, a division of the American Orthopedic Association. Also includes logos for BESPA and The University of Michigan.

---

---

---

---

---


---

---

---

### Consider Bony Architecture

- Deformity?
  - Varus
  - Valgus
  - Extrusion
- Cysts?
- Previous Hardware?
- Osteophytes?
- Adjacent joints?



**FASST**  
FACILITY FOR ADVANCED SURGICAL TRAINING  
BESPA THE UNIVERSITY OF TEXAS AT AUSTIN

---

---

---

---

---


---

---

---

### Soft Tissue Concerns

- Achilles contracture
- Scar Tissue
  - Posterior
  - Anterior
  - Medial
  - Lateral
- Previous Incisions
- Wounds
- Skin Grafts
- Vascularity



**FASST**  
FACILITY FOR ADVANCED SURGICAL TRAINING  
BESPA THE UNIVERSITY OF TEXAS AT AUSTIN

---

---

---

---

---

---

---

---

### Union Rates

- Much debate in the literature
- Many older studies (pre-2000)
- Industry/surgeon/designer bias
- Synopsis
  - Comparable results with arthroscopic versus open
  - Most open data is older using lateral approach
  - No study exists comparing different types/location of plates

**FASST**  
FACILITY FOR ADVANCED SURGICAL TRAINING  
BESPA THE UNIVERSITY OF TEXAS AT AUSTIN

---

---

---

---

---

---

---

---

Examples

---

---

---

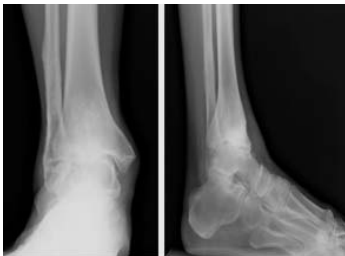
---

---

---

---

Osteoarthritis



Arthroscopic  
Lateral  
Anterior

---

---

---

---

---

---

---

Post traumatic Arthritis



Anterior  
Lateral  
Arthroscopic  
Too tight of joint  
Osteophytes

---

---

---

---

---

---

---

Anterior Extrusion



Anterior

Lateral

Arthroscopic  
Difficult to  
reduce  
extrusion

---

---

---

---

---

---

---

Varus Deformity



Anterior

Lateral

---

---

---

---

---

---

---

Valgus Deformity



A

Anterior

Lateral

---

---

---

---

---

---

---

### Failed TAA



Anterior

---

---

---

---

---

---

---

---

### Ankle Malunion



Lateral  
Hardware removal?

Anterior  
Skin?

Combined approach  
Osteotomy?

---

---

---

---

---

---

---

---

### My preferred approach

- Anterior – 90 %
- Lateral – 9 %
- Arthroscopic – 1 %
- Biologics/Bone graft
  - Yes if any defect/deformity
- Wounds
  - Tissue handling
  - PRP



---

---

---

---


---

---

---

---



  
FASST  
FACULTY ASSISTANT SUPPORT TEAM  
UNIVERSITY OF MARYLAND SYSTEM  
COLLEGE PARK, MD

Questions?

---

---

---

---

---

---

---