

Augmented Reality in Hip and Knee Arthroplasty: *Guiding Personalized Alignment*

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COI Disclosures

Consulting Payments / Royalties

- **Enovis (DJO Global)**
- OsteoRemedies
- Innomed
- Kinamed

Consulting Payments

- 3M / KCI

Scientific Advisory Board Options

- Emovi
- PeekMed

Investment / Ownership Shares

- Surgery Center of Fort Wayne
- M2 Orthopedics

Research Support

- Enovis (DJO Global)

Fellowship Funding

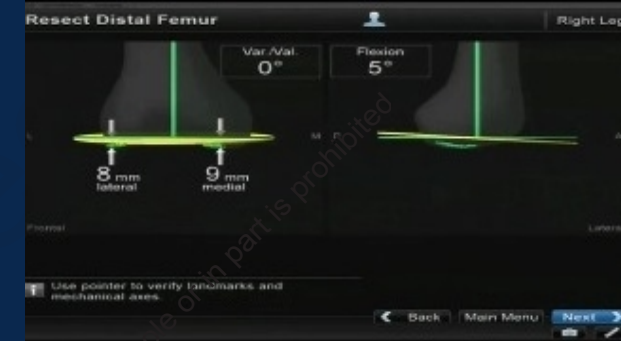
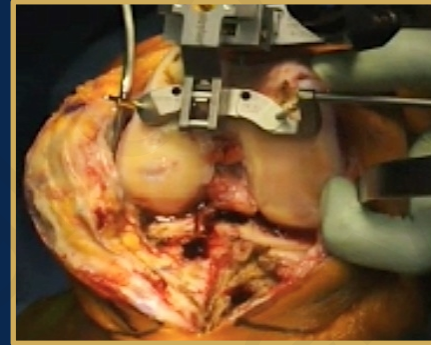
- OMEGA

Editorial Boards

- Journal of Arthroplasty
- Orthopedics Today

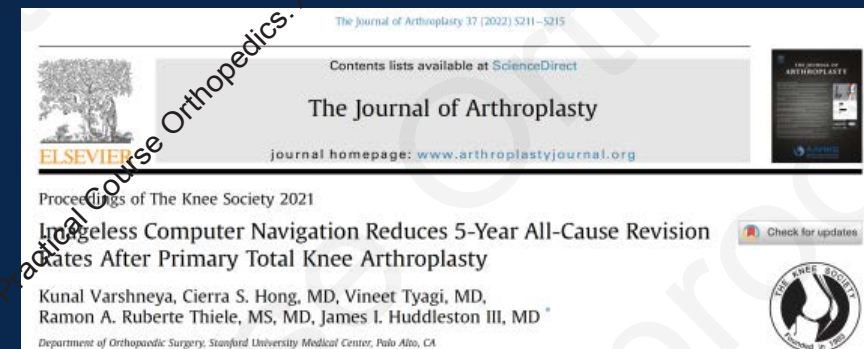
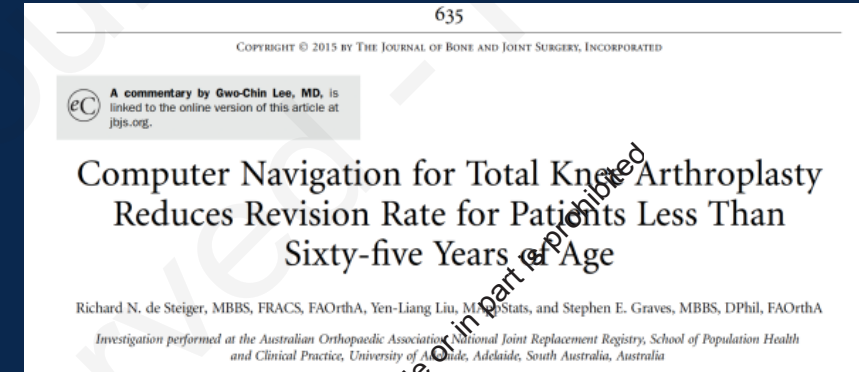
Advanced Technology in TJA

- In the contemporary era, technology must NOT:
 - compromise efficiency
 - increase cost
 - increase space consumption
 - increase resource consumption



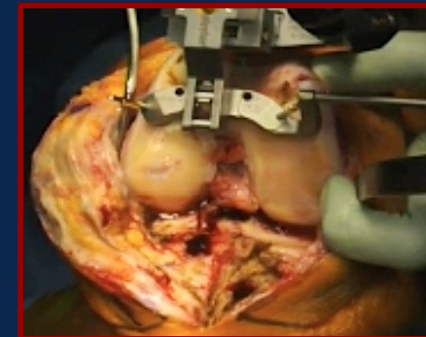
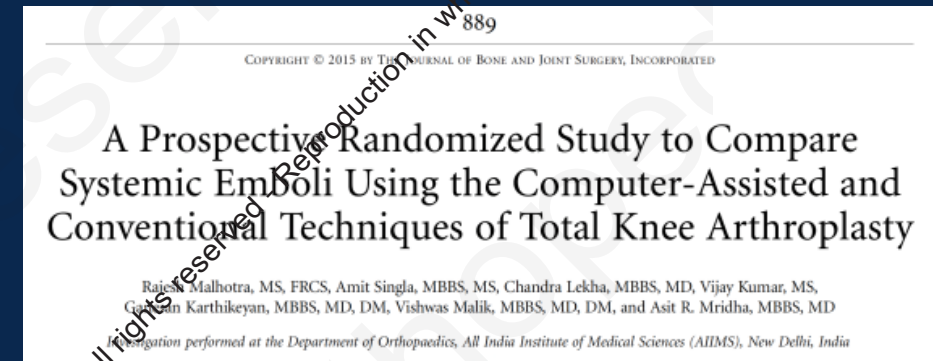
Current Value of Technology: CAS - Knees

- Computer Navigation (CAS)
 - Locates hip center
 - Personalized Alignment
 - Minimizes revision rates
 - No increase in time
 - Minimal cost



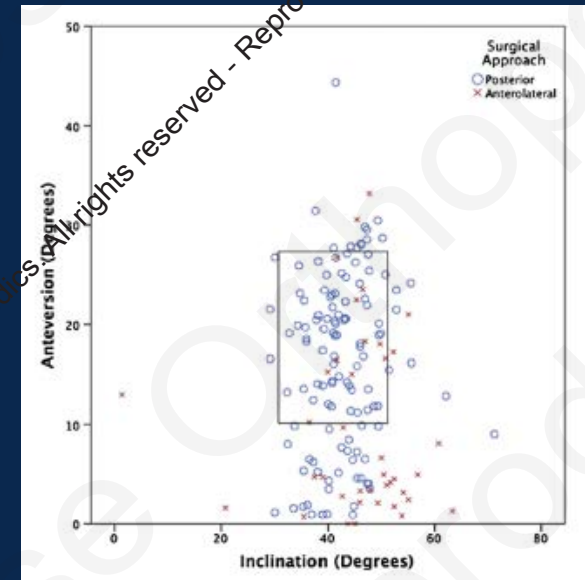
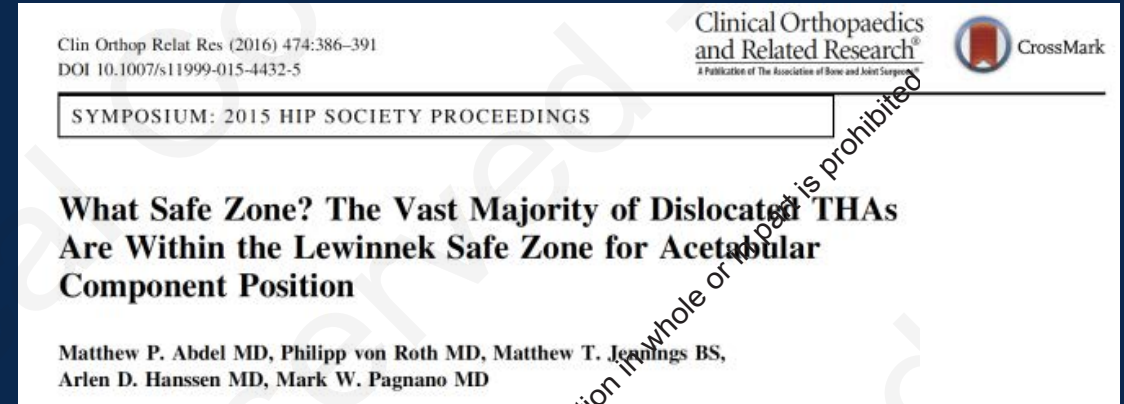
Current Value of Technology: CAS - Knees

- Minimizes Embolic Load
- Saves 1 gm Hgb
 - Analogous to TXA
- Minimizes painful postop hemarthrosis & anemia
- Maintains euvolemia
- Facilitates early discharge



Current Value of Technology: CAS - Hips

- **Computer Navigation (CAS)**
 - Improved accuracy in acetabular implant position
 - Improved accuracy in leg length restoration and offset
 - Targets remain elusive



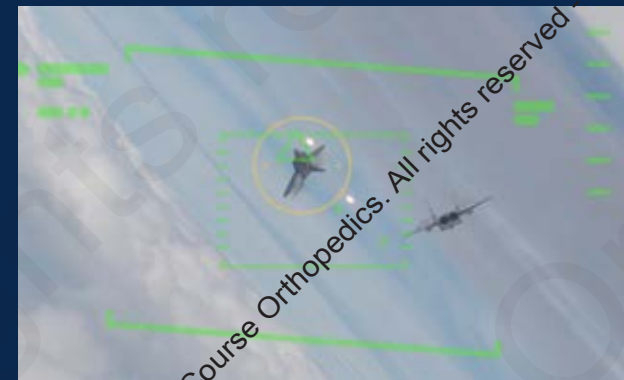
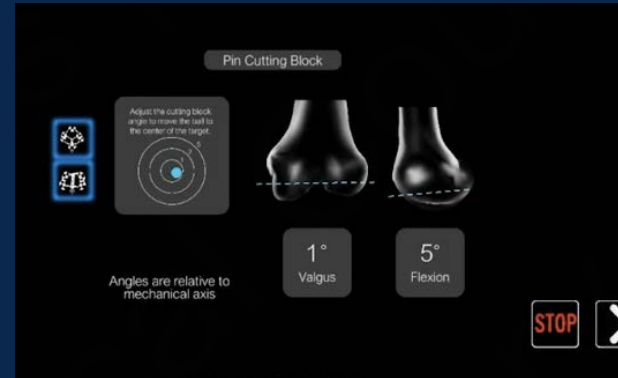
Next Technology Iteration

- Is it Robotics?
 - Costly
 - Time consuming
 - Space consuming
- No progress beyond CAS
- Augmented Reality?

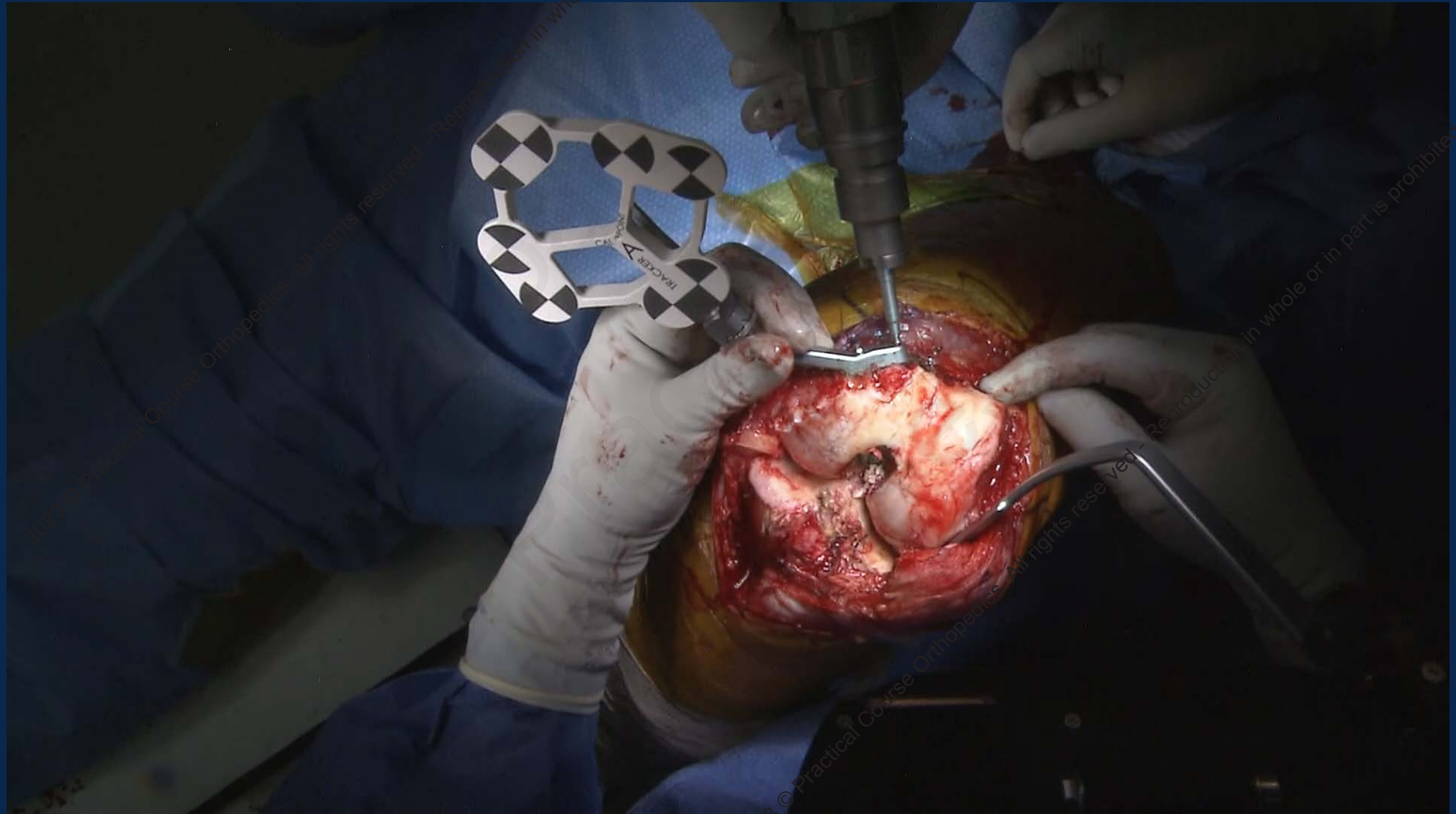


Augmented Reality

- Benefits of CAS / Robotics
- No space consumption
- Minimal cost
- Surgeon's eyes on surgical field
- Enhanced efficiency
- Ideal for outpatient utilization



Augmented Reality in TKA



Augmented Reality in THA

Courtesy of Dr. Michael Taunton, Mayo Clinic



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Augmented Reality in THA

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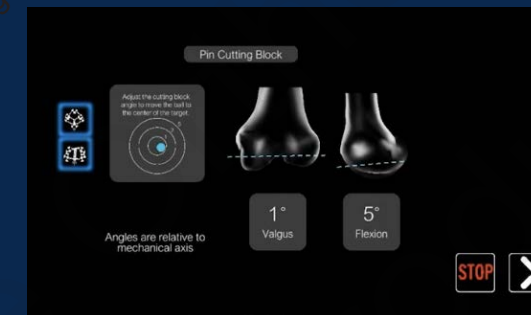
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Augmented Reality in TKA & THA

- Enhances value in TJA
 - Benefits of CAS / Robotics
 - No space consumption
 - Minimal cost
 - Keeps surgeon's eyes on surgical field
 - Enhanced efficiency
- Ideal for outpatient utilization



Thank you!



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