

Department of Orthopaedics

# Total Joint Update 2026

*Who the hell wants a Jiffy Knee?*

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Ryan, Murphy | WVOS President | April 25, 2026

# Disclosures

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None. Despite my best efforts

# Introduction

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## What's actually changed vs noise in 2025-2026

- Rapid advancement of technology
- Preference for registry data over anecdotal evidence
- Unequal progression in knee and hip development

# TKA: The Real Changes

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## 3 things to note

- Cementless 
- Robotics 
- Alignment Philosophy Shift

# TKA: The Real Changes

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## 3 things to note

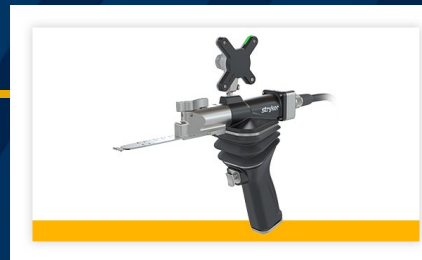
- Cementless ↑
- Robotics ↑
- Alignment Philosophy Shift



# Cementless TKA

- Rapid adoption
  - From 2014 to 2022: 2.8 → 20.5% usage
- Survivorship
  - Newer studies → lower revision rate than cemented
- Implant options and offerings expanding
- Expanded indications
  - More than just the young
- Improved OR efficiency
- Meticulous bone cuts required



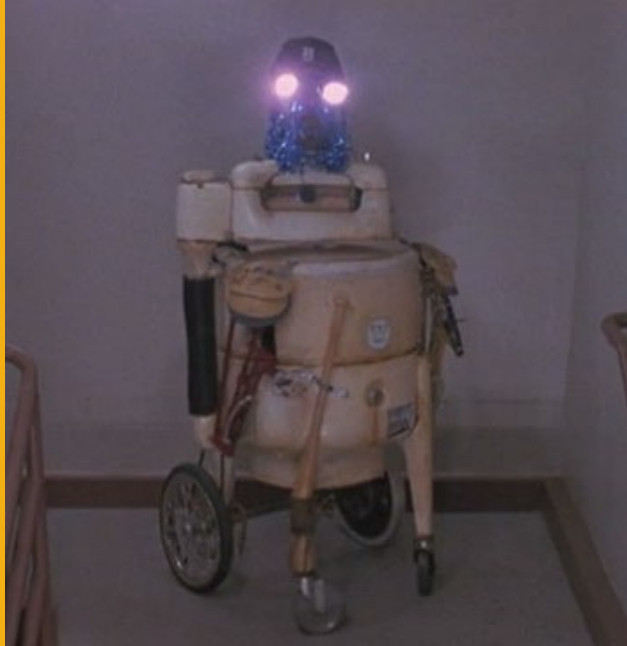




# ROBOTICS!!



# Robotics Reality Check

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- Surgeon usage 
  - 35% by 2023
- % TKA 
  - 4% - 2018
  - 13% - 2023
- Estimates : 50% by 2030
- Early adopter → Early Majority

# Robotics Reality Check

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- Alignment accuracy ↑
- Reproducibility ↑
- Outcomes
  - No decreased need for revision
    - Mid term
  - No sig changes in outcomes – meta analyses
    - Older data
- Some studies suggest improved satisfaction
  - University of Louisville
    - rTKA vs mTKA
    - Increased change in KSS, WOMAC, KOOS JR



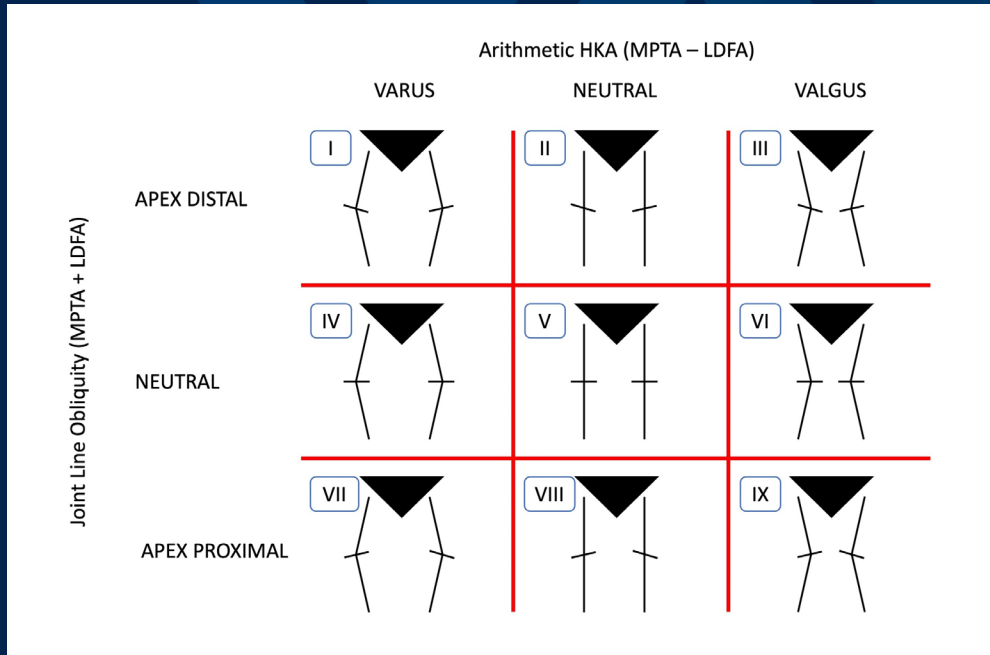
# Alignment Philosophy Shift

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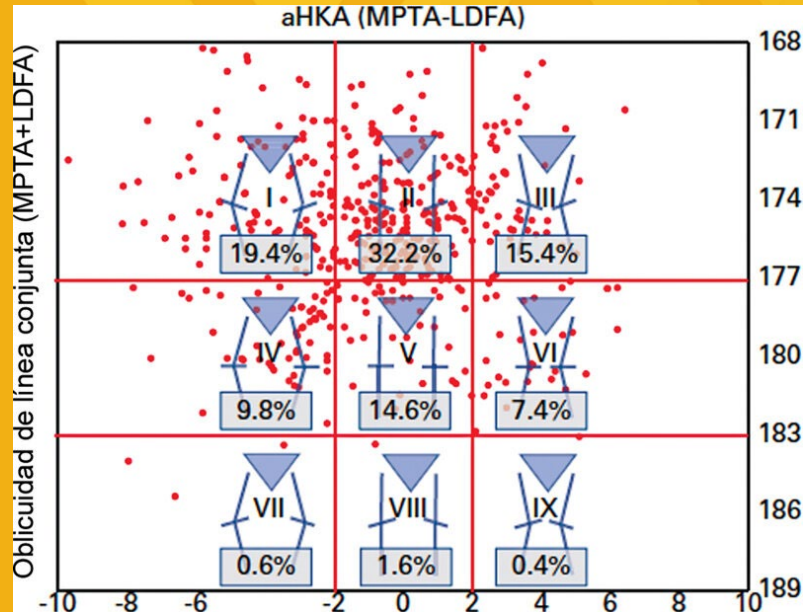
- Mechanical → Functional
- Personalized alignment
- Enabled by robotics



# CPAK classification



# CPAK classification



# Functional Alignment

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- Goal to optimize implant position by balancing bony resection and soft tissue tension while respecting patients' constitutional alignment/native joint line
  - Technology driven
    - see chicken or the egg
- Gap balancing variant

# Functional Alignment

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- Long term studies are necessarily lacking
- Mixed studies comparing to MA
  - New Zealand study 2025 – 2 year follow up without difference
- Manara et al. 2025
  - FA
    - Restores native kinematics more consistently
- At one year possible improvement in certain CPAK

# Functional Alignment

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- Potential benefits
  - Less soft tissue release
  - Better balance
  - Native like kinematics
  - Suspected higher patient satisfaction
- lacking
  - Long term survivorship advantage
  - Revision reduction
  - PROM superiority

# THA: evolving changes

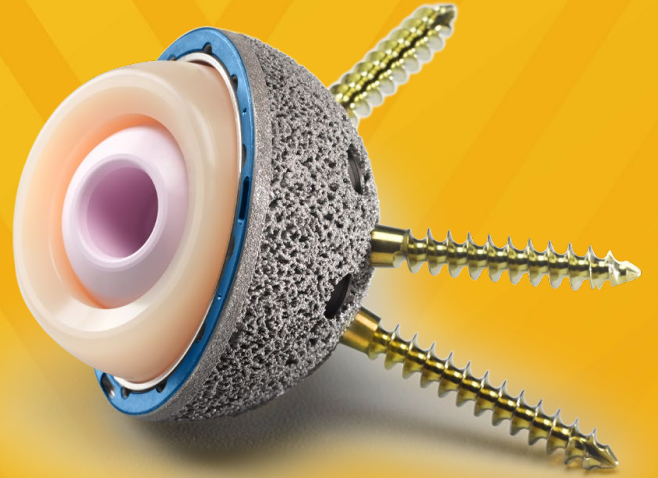
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- Implant design
  - Dual Mobility usage
  - Triple tapered stems
- Robotic usage
  - Still lacking
  - More precise acetabular placement.
- Antibiotic usage
  - Ancef still best option
    - Vanc plus ancef not superior
  - ALLERGY OVERPLAYED
    - Second line abx poss increased risk of infection
- DVT ppx
  - Savings from VTE prevention do not outweigh cost of lovenox
  - Periprosthetic fracture classifications

# THA: Implant Design

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- Dual Mobility
  - Use in primary
- Registry data
  - >54000
  - 25000 DM
    - 254 vs 114 dislocations



# THA: Implant Design

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- Triple tapered stems
  - Rapid adoption
  - >20% of primaries
- Low early rev rates
  - ~1.5%
- Low fx risk
- Easy efficient implantation
  - ASCs

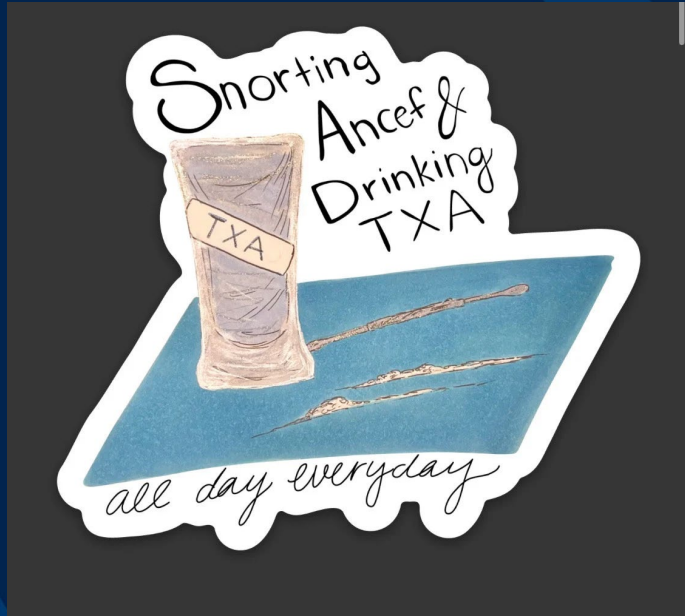


# THA: Robotics

- Current estimated usage
  - 6% of THA
- Slow adoption
- More accurate than manual
  - 1.4 vs 4.3mm error
- No clear clinical advantage



# THA: Prophylactic antibiotics



- Ancef still the best
  - No benefit to including vancomycin
  - Increased risk of reaction
- Allergy
  - 11 study review
    - Real allergy 0.7 vs reported 3.0%

Peel TN, Astbury S, Cheng AC, Paterson DL, Busing KL, Spelman T, Tran-Duy A, Adie S, Boyce G, McDougall C, Molnar R, Mulford J, Rehfish P, Solomon M, Crawford R, Harris-Brown T, Roney J, Wisniewski J, de Steiger R; ASAP Trial Group. Trial of vancomycin and cefazolin as surgical prophylaxis in arthroplasty. *N Engl J Med.* 2023 Oct 19;389(16):1488-98.

# THA: DVT PPx

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- CRISTAL trial
  - Enoxaparin vs aspirin
  - Higher rate of distal VTE with ASA
  - Did not equate to increased proximal symptomatic VTE
  - Economic analysis
    - Decreased cost of VTE did not outweigh increased cost of enox.

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# And...

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**Jiffy Knee**<sup>TM</sup>  
*A Step Ahead*

# What it offers

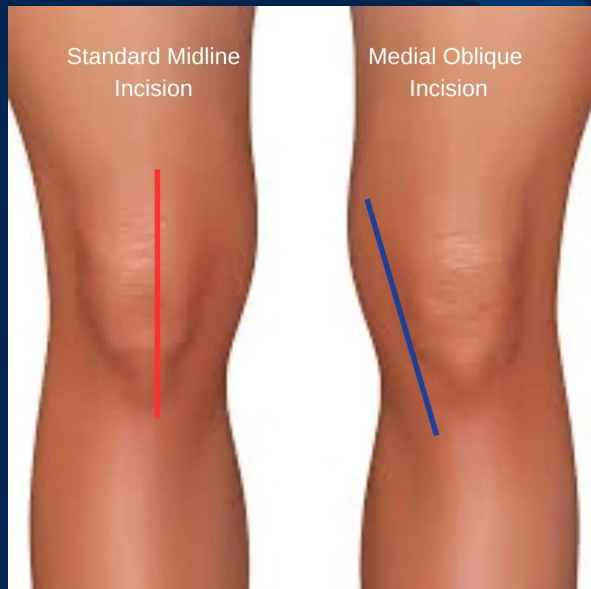
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- Same day surgery
- Faster recovery
- Less pain
- Quicker return to activity
- Minimally invasive



# What it is

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- Subvastus approach
- Oblique incision
- No new implants
- Possible retractor?
- No new techniques

# Thank You

