AAHKS YAG Comprehensive Arthroplasty Resource Guide for Residents

1.) Online Resources

2.) Online Video Series

3.) Textbooks

4.) In-Person Courses

5.) Research Resources

6.) Topic Based Resources/Relevant Literature:

   - **Basics**
     - History and Physical Exam of the Hip
     - History and Physical Exam of the Knee
     - Radiographic Evaluation of the Hip
     - Radiographic Evaluation of the Knee
     - Biomechanics of the Hip
     - Biomechanics of the Knee
     - Nonsurgical Management of Osteoarthritis
     - Perioperative Treatment of Patients Undergoing Arthroplasty

   - **Primary Hip Arthroplasty**
     - Indications for THA
       - Dysplasia of the Hip
       - Hip Fractures
       - Inflammatory Arthritis
       - Osteonecrosis
       - Post-Traumatic Arthritis
     - Bearing Surfaces Basic Science
     - Acetabular Component
     - Femoral Component
     - Hip-Spine Relationship
     - Techniques for Primary THA
       - Surgical Approaches for THA
       - Cement in THA
       - Conversion THA
       - Advanced Technologies in Primary Total Hip Arthroplasty
- **Revision Hip Arthroplasty**
  - Evaluation and Workup in Revision Total Hip Arthroplasty
  - Complications
    - Nerve Injury
    - Limb Length Discrepancy
    - Periprosthetic Fractures
    - Adverse Local Tissue Reaction - Metal on Metal
    - Aseptic Loosening After Total Hip Arthroplasty
    - Hip Instability
    - Periprosthetic Joint Infection
    - Polyethylene Wear and Osteolysis
  - Revision Total Hip Arthroplasty Techniques:
    - Component Removal in Revision Total Hip Arthroplasty
    - Acetabular Component Revision
    - Femoral Component Revision
    - Extended Trochanteric Osteotomy
    - PJI Management
    - Soft Tissue Reconstruction

- **Primary Knee Arthroplasty**
  - Surgical Anatomy of the Knee
  - Indications for TKA
    - Osteoarthritis
    - Post Traumatic Arthritis of the Knee
    - Inflammatory Arthritis
  - Kinematic vs Mechanical Alignment
  - Measured Resection vs Gap Balancing
  - Implant Designs Total Knee Arthroplasty
  - Rotational Positioning
  - Coronal and Sagittal Balancing for TKA
  - Extra-articular Deformity
  - TKA in the Valgus Knee
  - TKA in the Varus Knee
  - Patellar Resurfacing
  - Unicompartmental Knee Arthroplasty
  - Bilateral TKA
  - Functional Outcomes
  - Techniques for Primary TKA
    - Surgical Approaches for TKA
    - Primary TKA
    - Robotic primary TKA
    - TKA with Previous Hardware

- **Revision Knee Arthroplasty**
  - Revision Total Knee Arthroplasty: Evaluation
  - Bone Loss in Revision TKA
  - Complications
    - Nerve Injury
- Periprosthetic Fracture
- Periprosthetic Joint Infections
- Instability
- Arthrofibrosis
- Patellar Maltracking, Instability/Dislocation, Patellar Clunk
- Extensor Mechanism Disruption
- Salvage Procedures and Failed Revision Total Knee Arthroplasty
  - Revision Total Knee Arthroplasty Techniques
    - Extensile approaches
    - Component removal
    - PJI Management
    - ORIF of Periprosthetic Distal Femur Fracture
    - Hinge Knee Replacement
    - Extensor Mechanism Reconstruction

1.) Online Resources:
- Hip & Knee Book:
  - https://hipandkneebook.com/
- Orthobullets Adult Reconstruction Section:
  - https://www.orthobullets.com/topic/dashboard?id=5&specialty=5&expandLeftMenu=true
- AAOS ROCK – Adult Reconstruction Section:
  - https://www.aaos.org/education/resident-orthopaedic-core-knowledge/
- AAOS Res Study – Adult Reconstruction Question Bank:
  - https://www.aaos.org/education/examinations/ResStudy/
- JBJS Clinical Classroom
  - https://jbjspages.jbjs.org
- Wheeless Textbook of Orthopedics
  - https://www.wheelessonline.com/joints/hip/
  - https://www.wheelessonline.com/joints/knee/
  - https://www.wheelessonline.com/arthritis/
- The Hip and Knee Society Learning SHAK:
  - https://ccjr.mclms.net/en/

2.) Online Video Series:
- Fellows Orthopaedic Continued AAHKS Learning Videos
  - https://www.aahks.org/focal/
- AAOS Orthopaedic Video Theater – Adult Recon Section:
  - https://www.aaos.org/education/orthopaedic-video-theater/
- HSS Orthopaedic Surgical Videos (YouTube)
  - https://www.youtube.com/@orthopaedicsurgicalvideos9653
- NYU Langone Orthopedic Digital Library – Adult Reconstruction Section:
  - https://www.ortholibrary.org/coursecategory/adult-reconstruction/

3.) Textbooks:
- Orthopaedic Knowledge Update: Hip and Knee Reconstruction
  - by Michael A. Mont, MD, Michael Tanzer MD FRCSC
- Operative Techniques in Joint Reconstruction Surgery Third Edition
4.) In-Person Courses:
- AO Recon Course – Principles of Total Hip and Total Knee Arthroplasty:
  o [https://events.aona.org/event/eventdetailresp/9684?_ga=2.116595973.2013371041.1688932780-852154412.1687641298#AONA](https://events.aona.org/event/eventdetailresp/9684?_ga=2.116595973.2013371041.1688932780-852154412.1687641298#AONA)
- AAHKS Resident Arthroplasty Course:
  o [https://meeting.aahks.org/aahks-courses/resident-arthroplasty-course/](https://meeting.aahks.org/aahks-courses/resident-arthroplasty-course/)
- AAOS/Hip Society/Knee Society Comprehensive Resident Total Hip & Knee Course: From Cutting Your Teeth to Cutting Out Implants
  o April 19-21, 2024
  o [https://www.aaos.org/education/courses/2403389/](https://www.aaos.org/education/courses/2403389/)

5.) Research Resources:
- JOA Reviewer Mentorship Program
  - [https://www.aahks.org/focal/joa-reviewer-mentorship-program/](https://www.aahks.org/focal/joa-reviewer-mentorship-program/)

6.) Topic Based Resources/Relevant Literature:

**Basics:**

- **History and Physical Exam of the Hip**
  - Videos:
    - Physical Examination of the Hip: [https://www.youtube.com/watch?v=XPqOePfGjaE](https://www.youtube.com/watch?v=XPqOePfGjaE)
  - Relevant Literature:

- **History and Physical Exam of the Knee**
  - Videos:
    - Physical Examination Knee: [https://www.youtube.com/watch?v=pquonuC0Hms](https://www.youtube.com/watch?v=pquonuC0Hms)
  - Relevant Literature:

- **Radiographic Evaluation of the Hip**
  - Websites:
    - [https://radiologyassistant.nl/musculoskeletal/hip/arthroplasty](https://radiologyassistant.nl/musculoskeletal/hip/arthroplasty)
  - Relevant Literature:


- **Radiographic Evaluation of the Knee**
  - Relevant Literature:

- **Biomechanics of the Hip**
  - Book Chapters:
    - Chapter 19 - Biomechanics and joint replacement of the hip (Basic Orthopaedic Sciences: The Stanmore Guide)
  - Relevant Literature:

- **Biomechanics of the Knee**
  - Book Chapters:
    - Chapter 20 - Biomechanics and joint replacement of the knee (Basic Orthopaedic Sciences: The Stanmore Guide)
  - Relevant Literature:

- **Nonsurgical Management of Osteoarthritis**
  - Overview:
    - 2023 AAOS Management of Osteoarthritis of the Hip Evidence-Based Clinical Practice Guidelines
    - 2021 AAOS Management of Osteoarthritis of the Knee Evidence-Based Clinical Practice Guidelines
○ Relevant Literature:

○ Perioperative Treatment of Patients Undergoing Arthroplasty
  ○ Overview:
    ■ “Arthroplasty Preoperative Medical Optimization” *Orthobullets.*
      https://www.orthobullets.com/recon/422808/arthroplasty-preoperative-medical-optimization
  ○ Relevant Literature:

*Primary Hip Arthroplasty:*

○ Indications for THA:
  ○ Overview:

○ Dysplasia of the Hip
  ■ Overview:
    ● “Adult Dysplasia of the Hip” *Orthobullets.*
      https://www.orthobullets.com/recon/5008/adult-dysplasia-of-the-hip
  ■ Relevant Literature:

○ **Hip Fractures**
  ■ Relevant Literature:

○ **Inflammatory Arthritis**
  ■ Relevant Literature:

○ **Osteonecrosis**
  ■ Relevant Literature:

○ **Post-Traumatic Arthritis**
Relevant Literature:


### Bearing Surfaces Basic Science

- Relevant Literature:

### Acetabular Component

- Overview:

- Relevant Literature:

### Femoral Component

- Overview:

- Relevant Literature:
● **Hip-Spine Relationship**
  ○ **Relevant Literature:**

● **Techniques for Primary THA:**
  ○ **Surgical Approaches for THA**
    ■ **Videos:**
    ■ **Relevant Literature:**

  ○ **Cement in THA**
    ■ **Relevant Literature:**

  ○ **Conversion THA**
    ■ **Videos:**
    ■ **Relevant Literature:**
Advanced Technologies in Primary Total Hip Arthroplasty

- Videos:

- Relevant Literature:

Revision Hip Arthroplasty:

- Evaluation and Workup in Revision Total Hip Arthroplasty
  - Overview:
  - Relevant Literature:

- Complications:
  - Overview:
  - Nerve Injury
    - Relevant Literature:
  - Limb Length Discrepancy
    - Relevant Literature:
  - Periprosthetic Fractures
    - Overview:
"THA Periprosthetic Fracture" Orthobullets. 
https://www.orthobullets.com/recon/5013/tha-periprosthetic-fracture

Relevant Literature:

○ Adverse Local Tissue Reaction - Metal on Metal
  Relevant Literature:

○ Aseptic Loosening After Total Hip Arthroplasty
  Overview
  Relevant Literature:

○ Hip Instability
  Relevant Literature:

○ Periprosthetic Joint Infection
  Videos:
  - AAOS Guidelines on PJI: An Update
  Relevant Literature:


○ Polyethylene Wear and Osteolysis

  ■ Relevant Literature:

● Revision Total Hip Arthroplasty Techniques:

  ○ Component Removal in Revision Total Hip Arthroplasty

    ■ Videos:
    ● Strategies for Acetabular Component Removal in Hip Revision Surgery
    ● Exposure and Component Removal in Revision THA

    ■ Relevant Literature:

  ○ Acetabular Component Revision

    ■ Videos:
    ● Cup/Cage Construct for the Management of Pelvic Discontinuity:

    ■ Relevant Literature:

  ○ Femoral Component Revision

    ■ Book Chapters:
- **Videos:**

- **Relevant Literature:**

- **Extended Trochanteric Osteotomy**
  - **Videos:**
  - **Relevant Literature:**

- **PJI Management**
  - **Videos:**
  - **Relevant Literature:**
    - Chen W, C Klemt, EJ Smith, V Tirumala, L Xiong, and YM Kwon. "Outcomes and risk factors associated with failures of debridement, antibiotics, and implant retention in patients with acute hematogenous


- **Soft Tissue Reconstruction**
  - Videos:
  - Relevant Literature:

**Primary Knee Arthroplasty:**

- **Surgical Anatomy of the Knee**
  - Overview
  - Relevant Literature:

- **Indications for TKA:**
  - Overview:
    - Relevant Literature
  - **Osteoarthritis**
    - Relevant Literature:

○ Post Traumatic Arthritis of the Knee
  ■ Relevant Literature:

○ Inflammatory Arthritis
  ■ Relevant Literature:

● Kinematic vs Mechanical Alignment
  ○ Relevant Literature:

● Measured Resection vs Gap Balancing
  ○ Relevant Literature:
• **Implant Designs Total Knee Arthroplasty**
  - **Overview:**
    - "TKA Prosthesis Design" *Orthobullets.*
      [https://www.orthobullets.com/recon/5019/tka-prosthesis-design](https://www.orthobullets.com/recon/5019/tka-prosthesis-design)
  - **Relevant Literature:**

• **Rotational Positioning**
  - **Overview:**
  - **Relevant Literature:**

• **Coronal and Sagittal Balancing for TKA**
  - **Overview:**
  - **Relevant Literature:**
  - **Videos:**

• **Extra-articular Deformity**
  - **Relevant Literature:**

- **TKA in the Valgus Knee**
  - Relevant Literature:

- **TKA in the Varus Knee**
  - Relevant Literature:

- **Patellar Resurfacing**
  - Relevant Literature:

- **Unicompartmental Knee Arthroplasty**
  - Overview:
  - Relevant Literature:

- **Bilateral TKA**
  - Relevant Literature:

- **Functional Outcomes**
  - Relevant Literature:
    - Bourne RB, BM Chesworth, AM Davis, NN Mahomed, and KD Charron. "Patient satisfaction after total knee arthroplasty: who is satisfied and who is not?." *Clinical Orthopaedics and Related Research* 468 (2010): 57-63
**Techniques for Primary TKA:**

- **Templating for TKA**
  - **Overview:**

- **Surgical Approaches for TKA**
  - **Videos:**
  - **Relevant Literature:**

- **Primary TKA**
  - **Videos:**
  - **Robotic primary TKA**
    - **Videos:**
    - **Relevant Literature:**

- **TKA with Previous Hardware**
  - **Videos:**
  - **Relevant Literature:**

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*Revision Knee Arthroplasty:*
• Revision Total Knee Arthroplasty: Evaluation
  ○ Relevant Literature:

• Bone Loss in Revision TKA
  ○ Relevant Literature:

• Complications:
  ○ Nerve Injury
    ■ Relevant Literature:

  ○ Periprosthetic Fracture
    ■ Relevant Literature:

  ○ Periprosthetic Joint Infections
    ■ Relevant Literature:
      ■ Parvizi J, TL Tan, K Goswami, C Higuera, C Della Valle, AF Chen, and N Shohat. “The 2018 definition of periprosthetic hip and knee infection:


### Instability

- **Relevant Literature:**

### Arthrofibrosis

- **Relevant Literature:**

### Patellar Maltracking, Instability/Dislocation, Patellar Clunk

- **Overview:**
- **Relevant Literature:**
○ Extensor Mechanism Disruption
  ■ Relevant Literature:

● Salvage Procedures and Failed Revision Total Knee Arthroplasty
  ○ Relevant Literature:

● Revision Total Knee Arthroplasty Techniques:
  ○ Book Chapters:
  ○ Relevant Literature:

○ Extensile approaches
  ■ Videos:
  ■ Relevant Literature:

○ Component removal
  ■ Videos:
- Revision Total Knee Arthroplasty: Component Removal
- Revision Arthroplasty: Implant Removal, Tips, and Tricks

  Relevant Literature:

  - **PJI Management**
    - Videos:
      - Antibiotic Spacers in Two-Stage Exchange for Infected TKA:
        https://www.vumedi.com/video/two-stage-revision-itk17/
      - Preparing Antibiotic Cement & TKA Articulating Spacer:
        https://www.eacademy.hss.edu/courses/preparing-antibiotic-cement-tka-articulating-spacer
      - 1.5 Stage Revision with Prosthetic Articulating Spacer for the Definitive Management of Knee Periprosthetic Joint Infection: Surgical Technique
    - Relevant Literature:

  - **ORIF of Periprosthetic Distal Femur Fracture**
    - Videos:
      - Plating Techniques for Periprosthetic Fractures - Part 1: Distal Femur
    - Relevant Literature:

  - **Hinge Knee Replacement**
    - Videos:
      - Manual Surgical Technique - Rotating Hinge Knee AESCULAP® EnduRo:
- **Extensor Mechanism Reconstruction**
  - Videos: