

University of Maryland Department of Orthopaedics Adult Reconstruction Service Competency Requirements

Patient Care

Faculty will evaluate the resident's ability to obtain an H&P and appropriate radiographs and formulate a treatment plan for outpatients and inpatient consults.

In the operating room, the faculty will evaluate the resident's familiarity with the patient, the indications for surgery, understanding of the surgical treatment plan, ability to execute the operative plan, and understanding of the post-operative treatment plan.

Residents will be evaluated by mid-cycle and end of rotation faculty feedback, on-the-fly faculty feedback, case presentation evaluation forms, operative case log, 360 degree surveys, and self assessment.

PGY-3 Resident Goals & Objectives:	PGY-5 Resident Goals and Objectives
<p>The resident will:</p> <ol style="list-style-type: none"> 1. Effectively able to evaluate the following systemic conditions affecting the hip or knee via a thorough H&P: <ol style="list-style-type: none"> a. Osteoporosis b. Osteoarthritis c. Rheumatoid Arthritis d. Ankylosing Spondylitis e. Gout f. Sickle Cell Disease g. HIV h. Paget's Disease i. Metastatic Disease j. Reflex Sympathetic Dystrophy k. Workman's Compensation Issues l. Heterotopic ossification m. Deep venous thrombosis 2. Effectively demonstrate that he/she can competently: <ol style="list-style-type: none"> a. Obtain a comprehensive history b. Perform any relevant condition-specific physical examination c. Identify appropriate radiographic imaging studies d. Formulate a differential diagnosis and make an accurate final diagnosis e. Outline the etiology, or possible etiologies of the specific condition f. Outline the natural history of the specific condition with and without surgical treatment g. Describe appropriate non-operative treatment options (if they exist) h. Describe appropriate operative treatment options (if they exist) 	<p>The resident will:</p> <ol style="list-style-type: none"> 1. Demonstrate mastery of all PGY-3 level goals and objectives. 2. Outline the prognosis of non-operative and operative treatment in order to evaluate the following specific conditions affecting the hip or knee <ol style="list-style-type: none"> 1. Post-traumatic arthrosis of the knee 2. Post-traumatic arthrosis of the hip 3. Acetabular dysplasia 4. Simple acetabular fracture 5. Acetabular labral tear 6. Femoroacetabular impingement 7. Painful TJA 8. Loose TJA 9. Unstable TJA 10. Infected TJA 3. Demonstrate understanding of the anatomy and surgical plan for: <ol style="list-style-type: none"> a. Revision total hip and knee arthroplasty including <ol style="list-style-type: none"> i. Pre-operative planning ii. Implant choice iii. Use of allograft b. Vascularized free fibula grafting c. Advanced fracture fixation methods d. Knee arthrodesis e. Resection arthroplasty of the hip and knee 4. Demonstrate knowledge of the surgical approach and anatomy for all operative procedures including elective and emergent cases.

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| <ul style="list-style-type: none">i. Describe possible complications of non-operative and operative treatmentj. Outline the rehabilitation program involved in non-operative and operative treatmentk. Outline the prognosis of non-operative and operative treatment in order to evaluate the following specific conditions affecting the hip or knee<ul style="list-style-type: none">1. Osteoarthritis of the knee<ul style="list-style-type: none">a. Varus gonarthrosisb. Valgus gonarthrosis2. Pes Anserine bursitis3. Meniscal tears4. Extensor mechanism disruption5. Patello-femoral syndrome6. Tibial plateau fracture7. Supracondylar femur fracture8. Patella fracture9. Compartment syndrome10. Infectious arthritis11. Osteoarthritis of the hip12. Post-traumatic arthrosis13. Avascular necrosis of the femoral head14. Trochanteric bursitis15. Femoral neck fracture16. Intertrochanteric femur fracture17. Infectious arthritis of the hip <ul style="list-style-type: none">3. Be able to perform simple invasive procedures including:<ul style="list-style-type: none">a. Knee joint aspiration/injectionb. Shoulder joint aspiration/injectionc. Pes anserine bursa injectiond. Hematoma blocke. Closed reduction of ankle fracturef. Closed reduction of distal radius fracture4. Demonstrate competence in the operating room to:<ul style="list-style-type: none">a. Position patients for hip and knee proceduresb. Prep and drape of the operative fieldc. Perform initial surgical dissectiond. Close the surgical wounde. Apply post-operative dressing5. Demonstrate understanding of anatomy and surgical plan for:<ul style="list-style-type: none">a. Total hip arthroplastyb. Core decompression of the femoral head | |
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<ul style="list-style-type: none"> c. Percutaneous pinning of a femoral neck fracture d. ORIF of intertrochanteric femur fracture e. Bipolar hemiarthroplasty f. Arthroscopic meniscectomy g. Total knee arthroplasty h. Arthrotomy, washout of infected knee i. Arthrotomy, washout of infected hip 	
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Medical Knowledge

Faculty will evaluate the resident's knowledge on an ongoing basis in the clinic and operating room.

Residents will be evaluated by mid-cycle and end of rotation faculty feedback, on-the-fly faculty feedback, pre-op conference assessments, case presentation evaluation forms, journal club evaluation forms, OITE scores, 360 degree surveys, self assessment.

<p>PGY-3 Resident Goals and Objectives:</p> <p>The resident will:</p> <ol style="list-style-type: none"> 1. Demonstrate knowledge of the indications for surgical procedures such as ORIF of lower extremity fractures, arthroscopy of the knee, TKA, THA, arthrotomy and washout, ... 2. Demonstrate understanding of the relevant surgical anatomy of the lower extremity 3. Demonstrate an understanding of simple invasive procedures for patients such as injection/aspiration, abscess drainage, closed reduction of simple fractures 4. Demonstrate an understanding of the classic and contemporary literature pertaining to lower extremity reconstruction through self-guided study and participation in Journal club 	<p>PGY-5 Resident Goals and Objectives:</p> <p>In addition to obtaining competency in the PGY-3 goals and objectives, the resident will:</p> <ol style="list-style-type: none"> 1. Possess knowledge and demonstrate expertise in the discussion of the natural history of the systemic and specific conditions listed above 2. Demonstrate proficiency in the application of all splints and casts 3. Demonstrate an advanced understanding of pathology, surgical anatomy and operative exposures 4. Assume a leadership role in planning patient care and teaching conferences
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Practice Based Learning and Improvement

Residents will be evaluated based upon awareness of background and recent advances in common treatments, surgical indications, and surgical principles through participation in weekly pre-operative conference, morning trauma intake rounds, Chairman's conference, monthly M&M conference, and Journal club.

Residents will be evaluated by mid-cycle and end of rotation faculty feedback, on-the-fly faculty feedback, pre-op conference assessments, case presentation evaluation forms, journal club evaluation forms, M&M assessments, 360 degree surveys, self assessment.

<p>PGY-3 Resident Goals & Objectives:</p> <p>The resident will:</p> <ol style="list-style-type: none"> 1. Demonstrate familiarity and understanding of reading materials describing the systemic and specific conditions listed above including those assigned from: <ol style="list-style-type: none"> a. OKU Hip and Knee, Vol 2 	<p>PGY-5 Resident Goals & Objectives:</p> <p>In addition to obtaining competency in the PGY-3 goals and objectives, the resident will:</p> <ol style="list-style-type: none"> 1. Apply critical thinking in the appraisal of clinical studies read in the peer reviewed literature as well as in the treatment of patients
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<ul style="list-style-type: none">b. Campbell's Operative Orthopaedicsc. Advanced Hip Reconstruction <p>2. Accurately locate, appraise and assimilate evidence from scientific studies relating to the patient's orthopaedic condition. This requires knowledge of the pertinent recent literature as may be obtained in:</p> <ul style="list-style-type: none">a. American and British JBJSb. Journal of Arthroplastyc. Journal of the AAOS	<ul style="list-style-type: none">2. Direct the education for the more junior residents on the service3. Prepare and organize the weekly pre-operative conference to include templating of all total joint cases and review of implant logs for all revision total joint cases
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Interpersonal & Communication Skills

See common program competencies

Professionalism

See common program competencies

Systems-based Practice

See common program competencies

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Reading Recommendation for the Adult Reconstruction Service 2009
OKU Hip and Knee Reconstruction 3

Week 1

- Ch 16 - Osteoarthritis & Inflammatory Arthritis
- Ch 17 - Conservative Management of OA of the H&K
- Ch 18 - Perioperative Medical Management
- Ch 1 – Surgical Exposure in TKA
- Ch 30 - Surgical Approaches (hip)

Week 2

- Ch 19 - Blood conservation for Total Joint Replacement
- Ch 20 - Anesthesia
- Ch 23 – PMMA Bone Cement and Polyethylene
- Ch 24 – Imaging
- Ch 2 – Biomechanics of the Knee

Week 3

- Ch 21 - Venous Thromboembolic Disease and Prophylaxis in TJA
- Ch 3 – Total Knee Implant Design
- Ch 9 – Primary Total Knee Arthroplasty Outcomes
- Ch 10 – TKA in Outliers

Week 4

- Ch 31 – Biomechanics of the Hip
- Ch 32 – Bearing Surfaces
- Ch 33 – Hip Designs

Week 5

- Ch 40 – Primary Cementless THA: Cementless & Cemented
- Ch 34 – The Difficult Primary THA
- Ch 35 – Post-traumatic Management of the Hip

Week 6

- Ch 11 – Revision TKA
- Ch 12 – Complications after TKA
- Ch 14 – Osteolysis in TKA

Week 7

- Ch 36 - Osteotomy (hip)
- Ch 4 – Osteotomy (knee)
- Ch 5 – Alternative Treatment of Knee Arthritis: Arthroscopy & Cartilage Restoration

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Week 8

- Ch 27 – Arthrodesis of the Hip & Knee
- Ch 6 – UKA Long Term Results
- Ch 44 – Osteonecrosis

Week 9

- Ch 41 – Hip Revision
- Ch 42 - THA Complications
- Ch 43 – Pearls & Tips for THA

Week 10

- Ch 15 – Infected TKA
- Ch 45 – Osteolysis
- Ch 29 – Rehabilitation after THA/TKA

Adult Reconstruction Service Knowledge Map

General Patient Assessment Skills

In a patient presenting with a complaint related to the hip or knee, the resident will demonstrate competency in the following skills:

- Obtaining a focused Patient History
- Performing an appropriate Physical Examination
- Demonstrate an understanding of basic gait assessment

Order, position the patient and appropriately interpret relevant x-rays that may include:

- AP pelvis
- Frog-leg lateral hip
- Cross table lateral hip
- Judet views of the pelvis
- AP knee
- Lateral knee
- Sunrise view of the knee
- Rosenberg's view
- Alignment x-ray of the lower extremity

Know the indications and basic interpretation of the following imaging studies:

- CT Scan
- MRI
- Bone Scan

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Assessment and Treatment of Hip and Knee Specific Conditions:

For the specific hip or knee conditions listed below the resident will:

- Make an accurate **diagnosis**
- Competently perform any relevant condition-specific **physical examination**
- Identify appropriate radiographic **imaging studies**
- Outline the **etiology**, or possible etiologies of the specific condition
- Outline the **natural history** of the specific condition
- Describe appropriate **non-operative treatment options** (if they exist)
- Describe appropriate **operative treatment options** (if they exist)
- Describe possible **complications** of non-operative and operative treatment
- Outline the **rehabilitation program** involved in non-operative and operative treatment
- Outline the **prognosis** of non-operative and operative treatment

Knee Specific Conditions

- Osteoarthritis of the knee
- Varus gonarthrosis
- Valgus gonarthrosis
- Post-traumatic arthrosis of the knee
- Avascular necrosis of the knee
- Pes Anserine bursitis
- Meniscal tear
- Extensor mechanism disruption
- Patello-femoral syndrome
- Patellar malalignment
- Lower extremity malalignment
- Tibial plateau fracture
- Supracondylar femur fracture
- Patella fracture
- Compartment syndrome
- Infectious arthritis

Hip Specific Conditions

- Osteoarthritis of the hip
- Post-traumatic arthrosis
- Avascular necrosis

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- Acetabular dysplasia
- Femoral-acetabular impingement
- Acetabular labral tear
- Trochanteric bursitis
- “Snapping” hip syndrome
- Piriformis syndrome
- Femoral neck stress fracture
- Femoral neck fracture
- Intertrochanteric femur fracture
- Acetabular fracture
- Infectious arthritis of the hip

Arthroplasty Considerations and Complications:

For the specific hip or knee arthroplasty related condition listed below, the residents will:

- Describe the **implant** related implications involved in the condition
- Explain the **design rationale** for implant options
- Outline the **etiology and pathophysiology** underlying the condition
- Outline the **natural history** of the specific condition
- Describe appropriate **non-operative treatment options** (if they exist)
- Describe appropriate **operative treatment options** (if they exist)
- Describe possible **complications** of treatment
- Outline the **rehabilitation program** involved in non-operative and operative treatment
- Outline the **prognosis** of non-operative and operative treatment

Knee Replacement

- Ligament balancing in TKA
- Implant Design in TKA
 - Cruciate Retaining TKA
 - Cruciate Sacrificing TKA
- Patellar Resurfacing
- Extensor mechanism disruption after TKA
- Loose TKA
- Osteolysis in TKA
- Unstable TKA

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- Painful TKA
- Infected TKA
- Periprosthetic fracture
 - supracondylar femur
 - tibia
 - patella

Hip Replacement

- Hip biomechanics
- Bearing Surface Options
 - Metal on polyethylene
 - Metal on metal
 - Ceramic on polyethylene
 - Ceramic on Ceramic
- Primary THA Implant Design
 - Cemented Acetabulum
 - Uncemented Acetabulum
 - Cemented Femoral Stem
 - Uncemented Femoral Stem
- Revision THA Implant Design
 - Anti-protrusion ring/reconstruction cage
 - Impaction allografting
 - Constrained Acetabular Liner
- Loose THA
- Osteolysis in THA
- Unstable THA
- Infected THA
- Periprosthetic fracture
 - femur
 - acetabulum

Systemic Conditions Effecting the Hip or Knee

For the general or systemic problem listed below the resident will:

- Demonstrate an understanding of the pathophysiology
- Identify how this condition may affect management of specific hip or knee problems
- Demonstrate an understanding of appropriate treatment principles

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- Recommend appropriate patient referral when indicated

- Osteoporosis
- Osteoarthritis
- Rheumatoid Arthritis
- Ankylosing Spondylitis
- Gout
- Sickle Cell Disease
- HIV
- Paget's disease
- Metastatic Disease
- Reflex Sympathetic Dystrophy
- Workman's Compensation Issues
- Heterotopic ossification

Surgical Skills

For the basic surgical skills listed below, the resident will:

- Demonstrate competence in performing the described task
- Describe the technical considerations
- Analyze the potential complications

- Surgical Planning
- Patient positioning
- Prepping and draping
- Use of a tourniquet
- Choice of suture material
- Suture tying
- Application of short leg cast

For the specific surgical procedures listed below the resident will:

- Identify the appropriate surgical approach/approaches
- Describe the technical considerations and pitfalls
- Outline the operative procedure
- Identify the required equipment
- Perform the procedure

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Cognitive

Psychomotor

○○○	○○○	Total knee arthroplasty
○○○	○○○	Total hip arthroplasty
○○○	○○○	Core decompression of the femoral head
○○○	○○○	Harvest of fibula for vascularized fibular graft
○○○	○○○	Free fibula graft
○○○	○○○	Revision total knee arthroplasty
○○○	○○○	Arthroscopic meniscectomy
○○○	○○○	Percutaneous pinning of a femoral neck fracture
○○○	○○○	ORIF intertrochanteric femur fracture
○○○	○○○	Bipolar hemiarthroplasty
○○○	○○○	Revision tibial component of TKA
○○○	○○○	Revision femoral component of TKA
○○○	○○○	Revision patellar component of TKA
○○○	○○○	Revision acetabular component of THA
○○○	○○○	Revision femoral component of THA
○○○	○○○	Arthrodesis of the knee
○○○	○○○	Arthrodesis of the hip
○○○	○○○	Arthrotomy, washout of infected knee
○○○	○○○	Arthrotomy, washout of infected hip