Revision Summary Crosswalk (2023)

This report includes NIA-approved changes to guidelines for January 2023 implementation.[1]

[1]Note: During the 2022 guideline review process, the in-text reference citation format for all guidelines was switched from the author's last name to an AMA format-based numerical superscript.

Musculoskeletal (MSK)

GUIDELINES WITH NO SIGNIFICANT CHANGES (MSK)
*Note: Guidelines may have updated references and/or background.
LUMBAR SPINE SURGERY ***SPINE SURGERY, OTHER***

GUIDELINES WITH CHANGES (MSK)

CERVICAL SPINE SURGERY	
Previous (red indicates deleted text)	New (blue indicates new text)
	Added to OVERVIEW section: Obesity is one of the most commonly identified risk factors for surgical site infection. For individuals undergoing posterior cervical decompression with or without fusion for a diagnosis other than myelopathy, BMI should be less than 40. These cases will be reviewed on a case-by-case basis and may be denied given the increased risk of infection.

HIP ARTHROPLASTY	
Previous (red indicates deleted text)	New (blue indicates new text)
Policy Statement **General Requirements** Elective hip arthroplasty may be considered if the following general criteria are met: • Hip pain with documented loss of function, which may include painful weight bearing painful or inadequate range of motion to accomplish age-appropriate activities of daily living (ADLs) and/or employment; and mechanical catching, locking • Patient is medically stable with no uncontrolled comorbidities (such as diabetes) • Patient does not have an active local or systemic infection • Patient does not have active, untreated drug dependency (including but not limited to narcotics, opioids, muscle relaxants) unless engaged in treatment program • Patient has good oral hygiene and does not have major dental work scheduled or anticipated (ideally, within one year of joint replacement), due to increased post-surgical infection risk • Efforts have been made to ensure that the patient is optimally informed and prepared for surgery **INDICATIONS** **<u>TOTAL HIP ARTHROPLASTY (THA)</u>** THA may be considered medically necessary when the following criteria are met: • Hip pathology is due to rheumatoid arthritis, femoral neck fracture, malignancy, dysplasia, avascular necrosis	**Policy Statement** **General Requirements** Elective hip arthroplasty may be considered if the following general criteria are met: • Hip pain with documented loss of function, which may include painful weight bearing painful or inadequate range of motion to accomplish age-appropriate activities of daily living (ADLs) and/or employment; and mechanical catching, locking • Individual is medically stable and optimized for surgery with no uncontrolled comorbidities (such as diabetes) • Individual does not have an active local or systemic infection • Individual does not have active, untreated drug dependency (including but not limited to narcotics, opioids, muscle relaxants) unless engaged in treatment program • Individual has good oral hygiene and does not have major dental work scheduled or anticipated (ideally, within one year of joint replacement), due to increased post-surgical infection risk **INDICATIONS** **<u>TOTAL HIP ARTHROPLASTY (THA)</u>** THA may be considered medically necessary when the following criteria are met: • Hip pathology is due to rheumatoid arthritis, femoral neck fracture, malignancy, dysplasia, avascular necrosis

(confirmed by imaging) **or** radiographs (X-rays) demonstrate bone-on-bone articulation **AND** • There is persistent pain and documented loss of function with any of the above **NOTE**: There is no medical necessity to perform THA in patients with severe radiological disease and no symptoms, except in the case of malignancy **OR** • When **ALL** of the following criteria are met: ○ Pain due to advanced osteoarthritis (Tönnis Grade 2 or 3 [see grading appendix] **AND** documented loss of function that has been present for at least 3 months ○ Failure of **at least 3 months** of non-operative treatment, including **at least two** of the following: **…** **Additional Information** • All requests for THA are to have documentation in the medical record pertaining to the potential risks, benefits, and potential complications specific to this procedure. • All requests for simultaneous bilateral total hip replacements should clearly indicate why simultaneous THA is preferable to staged procedures. Associated risks with simultaneous bilateral total hip replacements should also be discussed with the patient and documented in the medical record. ….	(confirmed by imaging) **or** radiographs (X-rays) demonstrate bone-on-bone articulation **AND** • There is persistent pain and documented loss of function with any of the above **NOTE**: There is no medical necessity to perform THA in individuals with severe radiological disease and no symptoms, except in the case of malignancy **OR** • When **ALL** of the following criteria are met: ○ Pain due to advanced osteoarthritis (Tönnis Grade 2 or 3 [see grading appendix] **AND** documented loss of function that has been present for at least 12 weeks ○ Failure of **at least** 12 weeks of non-operative treatment, including **at least two** of the following:

HIP RESURFACING ARTHROPLASTY Hip resurfacing procedures will be reviewed on a case-by-case basis. Hip resurfacing arthroplasty may be considered medically necessary when **ALL** of the following criteria are met: • Pain and documented loss of function are present for at least 3 months • 3 months of non-operative treatment have failed to improve symptoms	**HIP RESURFACING ARTHROPLASTY** Hip resurfacing procedures will be reviewed on a case-by-case basis. Hip resurfacing arthroplasty may be considered medically necessary when **ALL** of the following criteria are met: • Pain and documented loss of function are present for at least 12 weeks • 12 weeks of non-operative treatment have failed to improve symptoms NOTE: “patient” was changed to “individual” throughout the guideline – not all instances were copied above.

HIP ARTHROSCOPY	
Previous (red indicates deleted text)	New (blue indicates new text)

Policy Statement
 	
DIAGNOSTIC HIP ARTHROSCOPY
 	
All requests for diagnostic hip arthroscopy will be considered and decided on a case-by-case basis and are rarely deemed medically necessary.
 	
Diagnostic hip arthroscopy may be medically necessary when **ALL** of the following criteria are met:
• At least 6 months of hip pain with documented loss of function
• Failure of at least 12 weeks of non-operative treatment, including at least **two** of the following:
  ○ Rest or activity modifications/limitations
  ○ Ice/heat
  ○ Protected weight bearing
  ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
  ○ Brace/orthosis
  ○ Physical therapy or properly instructed home exercise program
  ○ Weight optimization
  ○ Corticosteroid injection
• Indeterminate radiographs **AND** MRI findings
 	
Patient must have **no radiographic findings of any of the following**:
	Policy Statement
	
	DIAGNOSTIC HIP ARTHROSCOPY
	
	All requests for diagnostic hip arthroscopy will be considered and decided on a case-by-case basis and are rarely deemed medically necessary.
	
	Diagnostic hip arthroscopy may be medically necessary when **ALL** of the following criteria are met:
	• At least 6 months of hip pain with documented loss of function
	• Failure of at least 12 weeks of non-operative treatment, including at least **two** of the following:
	  ○ Rest or activity modifications/limitations
	  ○ Ice/heat
	  ○ Protected weight bearing
	  ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
	  ○ Brace/orthosis
	  ○ Physical therapy or properly instructed home exercise program
	  ○ Weight optimization
	  ○ Corticosteroid injection
	• Indeterminate radiographs **AND** MRI findings
	
	Individual must have **no radiographic findings of any of the following**:

• Significant arthritis (joint space less than 2 mm or subchondral edema • Femoroacetabular impingement (non-spherical femoral head or prominent head-neck junction (pistol-grip deformity), alpha angle > 50 degrees, overhang of the anterolateral rim of the acetabulum, posterior wall sign, prominent ischial spine sign, acetabular protrusion, or retroversion with a center edge (CE) angle > 35° and/or cross-over sign) • Hip dysplasia (lateral center edge angle < 20 degrees, anterior center edge angle < 20 degrees, Tonnis angle > 15 degrees or femoral head extrusion index > 25%), unless combined with concomitant periacetabular osteotomy[1,2] • Fractures of the femoral head or acetabulum • Labral tear (on MRI or MR arthrogram) • PVNS or synovial chondromatosis • Intra-articular loose body • Adductor tear or hamstring tear • Pubic edema or osteitis pubis • Gluteus medius or minimus tear • Ischiofemoral impingement (narrowed ischiofemoral and quadratus femoris spaces) **….** **EXTRA-ARTICULAR (ENDOSCOPIC) HIP SURGERY** **Requests for the use of arthroscopy to treat extra-articular hip pathology (endoscopy) will be decided on a case-by-case basis and when criteria in either of the following subsections are met:** • Activity related painful snapping sensation around the hip joint caused by the iliotibial tract over the greater trochanter or bursa (external snapping hip)	• Significant arthritis (joint space less than 2 mm on X-ray or subchondral edema on MRI) • Femoroacetabular impingement (non-spherical femoral head or prominent head-neck junction (pistol-grip deformity), alpha angle > 50 degrees, overhang of the anterolateral rim of the acetabulum, posterior wall sign, prominent ischial spine sign, acetabular protrusion, or retroversion with a center edge (CE) angle > 35° and/or cross-over sign) • Hip dysplasia (lateral center edge angle < 20 degrees, anterior center edge angle < 20 degrees, Tonnis angle > 15 degrees or femoral head extrusion index > 25%), unless combined with concomitant periacetabular osteotomy[1,2] • Fractures of the femoral head or acetabulum • Labral tear (on MRI or MR arthrogram) • Pigmented villonodular synovitis (PVNS) or synovial chondromatosis • Intra-articular loose body • Adductor tear or hamstring tear • Pubic edema or osteitis pubis • Gluteus medius or minimus tear • Ischiofemoral impingement (narrowed ischiofemoral and quadratus femoris spaces) NOTE: “patient” was changed to “individual” throughout the guideline – not all instances were copied above.

(Mascarenhas, 2014; Pierce, 2018) and/or the iliopsoas tendon over medial bony prominence or bursa (internal snapping hip) unresponsive to non-operative care (Byrd, 2013; De Sa, 2014), **OR** • Activity related pain and tenderness at the greater or lesser trochanter due to bursal inflammation, tendinosis and/or tendinitis, or tear of the tendon (gluteus medius or minimus) unresponsive to non-operative care (Byrd, 2013; Domb, 2010, 2013; McCormick, 2013); • **AND** • Failure of **at least 6 months** of non-operative treatment, including at least **two** of the following: ○ Physical therapy or properly instructed home exercise program ○ Rest or activity modification ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics ○ Corticosteroid injection • Physical exam findings align with patient symptoms and at least **one** of the following documented: ○ Limp or painful ambulation ○ Tenderness and/or crepitus to palpation ○ Visible, audible, or palpable snapping at the greater trochanter or pelvic brim ○ Pain and/or weakness with active or resisted motion of the hip ○ Pain relief with diagnostic local anesthetic injection	

ARTICULAR CARTILAGE RESTORATIVE/REPAIR (CHONDROPLASTY, MICROFRACTURE, ACI (AUTOGENOUS CHONDROCYTE IMPLANTATION) PROCEDURES
 	
All requests for microfracture or articular cartilage restorative procedures of the hip will be reviewed on a **case-by-case basis** and when the following criteria are met (Chahla, 2016; Domb, 2015 and 2018; Fontana, 2012; Karthikeyan, 2012; MacDonald, Maldonado, 2019; 2016; Marquez-Lara, 2016; O'Connor, 2016; Schallmo, 2018; Trask, 2016; Yen, 2010):
 	
• Skeletally mature adult (partial or complete closure of the proximal femoral physis)
• MRI results confirm a partial or full thickness chondral or osteochondral lesion of the hip.
• Patient has been symptomatic (pain, mechanical symptoms of popping, locking, catching, or limited range of motion) for at least 3 months
• Failure of **at least 3 months** of non-operative treatment, including **at least two** of the following:
  ○ Rest or activity modifications/limitations
  ○ Ice/heat
  ○ Protected weight bearing
  ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
  ○ Physical therapy modalities
  ○ Supervised home exercise
  ○ Weight optimization
  ○ Corticosteroid injection
• No evidence of significant hip joint arthritis, defined as joint space narrowing 2 mm or less or a Tönnis Grade 3 [see Grading Appendix].	

KNEE ARTHROPLASTY	
Previous (red indicates deleted text)	New (blue indicates new text)
Policy Statement **General Requirements** Elective knee arthroplasty may be considered if the following general criteria are met: • Knee pain with documented loss of function, which may include painful weight bearing, painful or inadequate range of motion to accomplish age-appropriate activities of daily living (ADLs) and/or employment, and painful mechanical catching, locking, or popping • Patient is medically stable and optimized for surgery with no uncontrolled comorbidities (such as diabetes) • Patient does not have an active local or systemic infection • Patient does not have active, untreated drug dependency (including but not limited to narcotics, opioids, muscle relaxants) unless engaged in treatment program • Patient has good oral hygiene and does not have major dental work scheduled or anticipated (ideally within one year of joint replacement), due to increased post-surgical infection risk • Efforts have been made to ensure that the patient is optimally informed and prepared for surgery **…** **INDICATIONS** **<u>TOTAL KNEE ARTHROPLASTY (TKA)</u>**	**Policy Statement** **General Requirements** Elective knee arthroplasty may be considered if the following general criteria are met: • Knee pain with documented loss of function, which may include painful weight bearing, painful or inadequate range of motion to accomplish age-appropriate activities of daily living (ADLs) and/or employment, and painful mechanical catching, locking, or popping • Individual is medically stable and optimized for surgery with no uncontrolled comorbidities (such as diabetes) • Individual does not have an active local or systemic infection • Individual does not have active, untreated drug dependency (including but not limited to narcotics, opioids, muscle relaxants) unless engaged in treatment program • Individual has good oral hygiene and does not have major dental work scheduled or anticipated (ideally within one year of joint replacement), due to increased post-surgical infection risk **…** **INDICATIONS** **<u>TOTAL KNEE ARTHROPLASTY (TKA)</u>**

TKA may be considered medically necessary <u>when the following criteria are met</u>: • Extensive disease or damage due to rheumatoid arthritis,[1] post-traumatic arthritis (i.e., previous proximal tibia or distal femur fracture causing subsequent arthritis), fracture,[2] avascular necrosis[3] confirmed by imaging (radiographs, MRI, or other advanced imaging) or radiographs (X-rays) demonstrate bone-on-bone articulation **AND** ○ There is persistent pain and documented loss of function with any of the above. **NOTE**: There is no medical necessity to perform TKA in patients with severe radiological disease and no symptoms **OR** • When **ALL** of the following criteria are met: ○ Pain due to advanced osteoarthritis (Kellgren-Lawrence (K-L) grade 3 or grade 4 degeneration [see grading appendix]) that is persistent and severe and/or patient has documented loss of function that has been present for at least 3 months resulting in a diminished quality of life ○ Failure of **at least 3 months** of non-operative treatment, including **<u>at least two</u>** of the following ▪ Rest or activity modifications/limitations ▪ Weight reduction for patient with elevated BMI[8]	TKA may be considered medically necessary <u>when the following criteria are met</u>: • Extensive disease or damage due to rheumatoid arthritis,[1] post-traumatic arthritis (i.e., previous proximal tibia or distal femur fracture causing subsequent arthritis), fracture,[2] avascular necrosis[3] confirmed by imaging (radiographs, MRI, or other advanced imaging) or radiographs (X-rays) demonstrate bone-on-bone articulation **AND** ○ There is persistent pain and documented loss of function with any of the above. **NOTE**: There is no medical necessity to perform TKA in individuals with severe radiological disease and no symptoms **OR** • When **ALL** of the following criteria are met: ○ Pain due to advanced osteoarthritis (Kellgren-Lawrence (K-L) grade 3 or grade 4 degeneration [see grading appendix]) that is persistent and severe and/or individual has documented loss of function that has been present for at least 12 weeks resulting in a diminished quality of life ○ Failure of **<u>at least</u>** 12 weeks of non-operative treatment, including **<u>at least two</u>** of the following ▪ Rest or activity modifications/limitations ▪ Weight reduction for individual with elevated BMI[8]

▪ Protected weight-bearing with cane, walker, or crutches ▪ Brace/orthosis ▪ Physical therapy modalities ▪ Physician-supervised exercise program (including home exercise program) ▪ Application of heat or ice ▪ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, or analgesics[8] ▪ Injections: corticosteroid or viscosupplementation ○ Physical exam findings demonstrate **one or more** of the following: tenderness, swelling/effusion, limited range of motion (decreased from uninvolved side or as compared to a normal joint), flexion contracture, palpable or audible crepitus, instability and/or angular deformity ○ Radiographic findings show evidence of advanced arthritic changes, described as Kellgren-Lawrence grade 3 or grade 4 degeneration or described as X-rays demonstrating advanced changes such as severe narrowing or bone-on-bone compartment collapse, subchondral sclerosis or cysts, osteophyte formation and/or bony deformity.[4,9] X-rays described only as showing "severe", "advanced" or "end-stage" arthritis require more definitive descriptions as stated above. The severity of knee osteoarthritis is commonly determined with weight-bearing radiographs, however, if severe arthritic changes (e.g., bone on bone joint space narrowing) are noted on non-weightbearing images, further weight-bearing radiographs are not required **NOTE**: MRI should not be the primary radiographic test used to determine the presence or severity of	▪ Protected weight-bearing with cane, walker, or crutches ▪ Brace/orthosis ▪ Physical therapy modalities ▪ Physician-supervised exercise program (including home exercise program) ▪ Application of heat or ice ▪ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, or analgesics[8] ▪ Injections: corticosteroid or viscosupplementation ○ Physical exam findings demonstrate **one or more** of the following: tenderness, swelling/effusion, limited range of motion (decreased from uninvolved side or as compared to a normal joint), flexion contracture, palpable or audible crepitus, instability and/or angular deformity ○ Radiographic findings show evidence of advanced arthritic changes, described as Kellgren-Lawrence grade 3 or grade 4 degeneration or described as X-rays demonstrating advanced changes such as severe narrowing or bone-on-bone compartment collapse, subchondral sclerosis or cysts, osteophyte formation and/or bony deformity.[4,9] X-rays described only as showing "severe", "advanced" or "end-stage" arthritis require more definitive descriptions as stated above. The severity of knee osteoarthritis is commonly determined with weight-bearing radiographs, however, if severe arthritic changes (e.g., bone on bone joint space narrowing) are noted on non-weightbearing images, further weight-bearing radiographs are not required **NOTE**: MRI should not be the primary radiographic test used to determine the presence or severity of

arthritic changes in the joint.[10] Likewise, determinations as to the degree of arthritis should not routinely be determined by findings described from prior arthroscopic surgery of the knee ○ No corticosteroid injection into the joint within 12 weeks of surgery **Additional Information** • All requests for TKA or UKA must have documentation in the medical record pertaining to the potential risks, benefits, and complications specific to these procedures. All requests for simultaneous bilateral total knee replacements should clearly indicate why simultaneous TKA is preferable to staged procedures. Associated risks with simultaneous bilateral total knee replacements should also be discussed with the patient and documented in the medical record • If medical records indicate that possibly either a TKA or a UKA will be performed, based on the findings at the time of surgery, separate requests are to be submitted **Absolute Contraindication** • Active infection (local or remote). If a local or remote infection is documented in the patient's history, records should clearly demonstrate that the previous infection has been treated and symptoms have resolved or that the patient has no clinical signs or symptoms of the previous infection at the time of the operation	arthritic changes in the joint.[10] Likewise, determinations as to the degree of arthritis should not routinely be determined by findings described from prior arthroscopic surgery of the knee ○ No corticosteroid injection into the joint within 12 weeks of surgery ○ No prior arthroscopic knee surgery within 6 months of surgery **Additional Information** • All requests for simultaneous bilateral total knee replacements should clearly indicate why simultaneous TKA is preferable to staged procedures. Associated risks with simultaneous bilateral total knee replacements should also be discussed with the patient and documented in the medical record • If medical records indicate that possibly either a TKA or a UKA will be performed, based on the findings at the time of surgery, separate requests are to be submitted **Absolute Contraindication** • Active infection (local or remote). If a local or remote infection is documented in the patient's history, records should clearly demonstrate that the previous infection has been treated and symptoms have resolved or that the individual has no clinical signs or symptoms of the previous infection at the time of the operation

• Any corticosteroid injection into the joint within 12 weeks of surgery **…** **UNICOMPARTMENTAL KNEE ARTHROPLASTY (UKA) / PARTIAL KNEE REPLACEMENT (PKA)** Medial or lateral UKA/PKA may be medically necessary when **ALL** of the following criteria are met: • At least 3 months of pain localized to the medial or lateral compartment[4] • Failure of at least 3 months of non-operative treatment, including **at least two** of the following[5-8]): ○ Rest or activity modifications/limitations ○ Weight reduction for patient with elevated BMI[8] ○ Protected weight-bearing with cane, walker, or crutches ○ Brace/orthosis ○ Physical therapy modalities ○ Physician-supervised exercise program (including home exercise program) ○ Application of heat or ice ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, or analgesics[8] ○ Injections: corticosteroid or viscosupplementation • Total arc of motion (goniometer) > 90 degrees • Normal ACL or stable reconstructed ACL per physical exam test[23]	• Any corticosteroid injection into the joint within 12 weeks of surgery • Any prior arthroscopic knee surgery within 6 months of surgery … **UNICOMPARTMENTAL KNEE ARTHROPLASTY (UKA) / PARTIAL KNEE REPLACEMENT (PKA)** Medial or lateral UKA/PKA may be medically necessary when **ALL** of the following criteria are met: • At least 12 weeks of pain localized to the medial or lateral compartment[4] • Failure of at least 12 weeks of non-operative treatment, including **at least two** of the following[5-8]): ○ Rest or activity modifications/limitations ○ Weight reduction for individual with elevated BMI[8] ○ Protected weight-bearing with cane, walker, or crutches ○ Brace/orthosis ○ Physical therapy modalities ○ Physician-supervised exercise program (including home exercise program) ○ Application of heat or ice ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, or analgesics[8] ○ Injections: corticosteroid or viscosupplementation • Total arc of motion (goniometer) > 90 degrees • Normal ACL or stable reconstructed ACL per physical exam test[23]

• Standing, weight-bearing radiographs demonstrate *only* unicompartmental disease (with or without patellofemoral involvement), described as Kellgren-Lawrence grade 3 or grade 4 degeneration • **NOTE**: MRI should not be the primary radiographic test used to determine the presence or severity of arthritic changes in the joint[10] • Contracture < or equal to 10 degrees upon physical exam (goniometer)[24] • Angular deformity < or equal to 10 degrees, passively correctable to neutral upon physical exam (goniometer)[25] • No corticosteroid injection into the joint within 12 weeks of surgery[11-15]	• Weight-bearing radiographs demonstrate *only* unicompartmental disease (with or without patellofemoral involvement), described as Kellgren-Lawrence grade 3 or grade 4 degeneration • **NOTE**: MRI should not be the primary radiographic test used to determine the presence or severity of arthritic changes in the joint[10] • Contracture < or equal to 10 degrees upon physical exam (goniometer)[24] • Angular deformity < or equal to 10 degrees, passively correctable to neutral upon physical exam (goniometer)[25] • No corticosteroid injection into the joint within 12 weeks of surgery[11-15] • No prior arthroscopic knee surgery within 6 months of surgery
All requests for UKA in patients with chronic, *painless* effusion and extensive radiographic arthritis will be evaluated on a case-by-case basis. **Contraindications for Medial or Lateral UKA/PKA** • Any corticosteroid injection into the joint within 12 weeks of surgery	All requests for UKA in individuals with chronic, *painless* effusion and extensive radiographic arthritis will be evaluated on a case-by-case basis. **Contraindications for Medial or Lateral UKA/PKA** • Any corticosteroid injection into the joint within 12 weeks of surgery • Any prior arthroscopic knee surgery within 6 months of surgery
… **PATELLOFEMORAL UKA/PKA** may be medically necessary when **ALL** of the criteria are met within one of the following two subsections:	**…** **PATELLOFEMORAL UKA/PKA** may be medically necessary when **ALL** of the criteria are met within one of the following two subsections:

• Failure of prior patellofemoral unloading procedures (i.e., Maquet or Fulkerson)
• Failure of at least 3 months of non-operative treatment, including at least **two** of the following:
  ○ Rest or activity modifications/limitations
  ○ Weight reduction for patient with elevated BMI
  ○ Protected weight-bearing with cane, walker, or crutches
  ○ Brace/orthosis
  ○ Physical therapy modalities
  ○ Physician-supervised exercise program (including home exercise program)
  ○ Application of heat or ice
  ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, or analgesics
  ○ Injections: corticosteroid or viscosupplementation
• Standing, AP or PA weight-bearing x-rays demonstrate only unicompartmental disease of the patellofemoral joint, described as Kellgren-Lawrence grade 3 or grade 4 degeneration (joint space narrowing, osteophyte formation, sclerosis and/or subchondral cystic changes), with no evidence of medial or lateral compartment arthritis.
OR
• At least 6 months of isolated patellar/anterior knee pain
• Patellar/anterior knee pain that is exacerbated by stairs, inclines, transfers or prolonged sitting
• Reproducible patellofemoral pain upon physical exam
• No ligamentous instability upon physical exam
	• Failure of prior patellofemoral unloading procedures (i.e., Maquet or Fulkerson)
	• Failure of at least 12 weeks of non-operative treatment, including at least **two** of the following:
	  ○ Rest or activity modifications/limitations
	  ○ Weight reduction for individual with elevated BMI
	  ○ Protected weight-bearing with cane, walker, or crutches
	  ○ Brace/orthosis
	  ○ Physical therapy modalities
	  ○ Physician-supervised exercise program (including home exercise program)
	  ○ Application of heat or ice
	  ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, or analgesics
	  ○ Injections: corticosteroid or viscosupplementation
	• Standing, AP or PA weight-bearing x-rays demonstrate only unicompartmental disease of the patellofemoral joint, described as Kellgren-Lawrence grade 3 or grade 4 degeneration (joint space narrowing, osteophyte formation, sclerosis and/or subchondral cystic changes), with no evidence of medial or lateral compartment arthritis.
	OR
	• At least 6 months of isolated patellar/anterior knee pain
	• Patellar/anterior knee pain that is exacerbated by stairs, inclines, transfers or prolonged sitting
	• Reproducible patellofemoral pain upon physical exam
	• No ligamentous instability upon physical exam

• Failure of **at least 3 months** of non-operative treatment, including at least **two** of the following:	• Failure of **at** least 12 weeks of non-operative treatment, including at least **two** of the following: NOTE: “patient” was changed to “individual” throughout the guideline – not all instances were copied above.

KNEE ARTHROSCOPY	
Previous (red indicates deleted text)	New (blue indicates new text)
Policy Statement. **General Requirements** Elective arthroscopic surgery of the knee may be considered if the following general criteria are met: • There is clinical correlation of the patient's subjective complaints with objective exam findings and/or imaging (when applicable) • Knee pain with documented loss of function: Deviation from normal knee function which may include painful weight bearing and/or inadequate range of motion (> 10 degrees flexion contracture or < 110 degrees flexion or both) to accomplish age-appropriate activities of daily living (ADLs), occupational or athletic requirements) • Patient is medically stable with no uncontrolled comorbidities • Patient does not have an active local or systemic infection • Patient does not have active, untreated drug dependency (including but not limited to narcotics, opioids, or muscle relaxants) unless engaged in a treatment program …. **DIAGNOSTIC KNEE ARTHROSCOPY** Diagnostic knee arthroscopy may be medically necessary when **ALL** of the following criteria are met:	**Policy Statement** **General Requirements** Elective arthroscopic surgery of the knee may be considered if the following general criteria are met: • There is clinical correlation of the individual's subjective complaints with objective exam findings and/or imaging (when applicable) • Knee pain with documented loss of function: Deviation from normal knee function which may include painful weight bearing and/or inadequate range of motion (> 10 degrees flexion contracture or < 110 degrees flexion or both) to accomplish age-appropriate activities of daily living (ADLs), occupational or athletic requirements) • Individual is medically stable with no uncontrolled comorbidities • Individual does not have an active local or systemic infection • Individual does not have active, untreated drug dependency (including but not limited to narcotics, opioids, or muscle relaxants) unless engaged in a treatment program • No intra-articular cortisone injections within 4 weeks of surgery[1-3] … **DIAGNOSTIC KNEE ARTHROSCOPY** Diagnostic knee arthroscopy may be medically necessary when **ALL** of the following criteria are met:

• At least 3 months of knee pain with documented loss of function
• Failure of at least 12 weeks of non-operative treatment, including **at least two** of the following:
  ○ Rest or activity modifications/limitations
  ○ Ice/heat
  ○ Protected weight bearing
  ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
  ○ Brace/orthosis
  ○ Physical therapy modalities
  ○ Supervised home exercise
  ○ Weight optimization
  ○ Corticosteroid injection
• Clinical documentation of painful weight bearing, joint line tenderness, effusion and/or limited motion compared to pre-symptomatic joint range
• Indeterminate radiographs **AND** MRI findings. Radiographs and/or MRI should not demonstrate any of the following: Kellgren-Lawrence Grade 3-4 changes (based on weight-bearing radiographs), meniscus tears, loose bodies, stress fractures (including insufficiency fractures) or patellofemoral instability (lateral patellar tilt or patellar subluxation)
…
Debridement for **non-patellofemoral (femoral condyle and tibial plateau) articular cartilage** may be medically necessary when **ALL** of the following criteria are met[13-15]:
• Knee pain with documented loss of function
	• At least 12 weeks of knee pain with documented loss of function
	• Failure of at least 12 weeks of non-operative treatment, including **at least two** of the following:
	  ○ Rest or activity modifications/limitations
	  ○ Ice/heat
	  ○ Protected weight bearing
	  ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
	  ○ Brace/orthosis
	  ○ Physical therapy modalities
	  ○ Supervised home exercise
	  ○ Weight optimization
	  ○ Corticosteroid injection
	• Clinical documentation of painful weight bearing, joint line tenderness, effusion and/or limited motion compared to pre-symptomatic joint range
	• Indeterminate radiographs **AND** MRI findings. Radiographs and/or MRI should not demonstrate any of the following: Kellgren-Lawrence Grade 3-4 changes (based on weight-bearing radiographs), meniscus tears, loose bodies, stress fractures (including insufficiency fractures) or patellofemoral instability (lateral patellar tilt or patellar subluxation)
	• No intra-articular cortisone injections within 4 weeks of surgery
	…
	Debridement for **non-patellofemoral (femoral condyle and tibial plateau) articular cartilage** may be medically necessary when **ALL** of the following criteria are met[13-15]:
	• Knee pain with documented loss of function

• Failure of **at least 12 weeks** of non-operative treatment, including **<u>at least two</u>** of the following:
  ○ Rest or activity modifications/limitations
  ○ Ice/heat
  ○ Protected weight bearing
  ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
  ○ Brace/orthosis
  ○ Physical therapy modalities
  ○ Supervised home exercise
  ○ Weight optimization
  ○ Corticosteroid injection
• MRI results demonstrate evidence of an area of localized articular cartilage damage or an unstable chondral flap
• Two or more or persistent effusion(s)
	• Failure of **at least 12 weeks** of non-operative treatment, including **<u>at least two</u>** of the following:
	  ○ Rest or activity modifications/limitations
	  ○ Ice/heat
	  ○ Protected weight bearing
	  ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol
	  ○ Brace/orthosis
	  ○ Physical therapy modalities
	  ○ Supervised home exercise
	  ○ Weight optimization
	  ○ Corticosteroid injection
	• MRI results demonstrate evidence of an area of localized articular cartilage damage or an unstable chondral flap
	• Two or more or persistent effusion(s)
	• No intra-articular cortisone injections within 4 weeks of surgery1-3

Debridement chondroplasty may be medically necessary for **patellofemoral chondrosis** when **<u>ALL</u>** of the following criteria are met: • Anterior knee pain with documented loss of function, exacerbated by activities that load the joint such as ascending > descending stairs or being in seated position for extended periods of time with knee flexed • Other extra-articular or intra-articular sources of pain or dysfunction have been excluded (referred pain, radicular pain, tendinitis, bursitis, neuroma) • Physical exam localizes tenderness to the patellofemoral joint	Debridement chondroplasty may be medically necessary for **patellofemoral chondrosis** when **<u>ALL</u>** of the following criteria are met: • Anterior knee pain with documented loss of function, exacerbated by activities that load the joint such as ascending > descending stairs or being in seated position for extended periods of time with knee flexed • Other extra-articular or intra-articular sources of pain or dysfunction have been excluded (referred pain, radicular pain, tendinitis, bursitis, neuroma) • Physical exam localizes tenderness to the patellofemoral joint

• Failure of **at least 12 weeks** of non-operative treatment, including **<u>at least two</u>** of the following: ○ Rest or activity modifications/limitations ○ Ice/heat ○ Protected weight bearing ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol ○ Brace/orthosis ○ Physical therapy modalities ○ Supervised home exercise ○ Weight optimization ○ Corticosteroid injection • No evidence of moderate to severe osteoarthritis (Kellgren-Lawrence Grade 3-4 based on weight-bearing radiographs and patellofemoral views [see grading appendix])	• Failure of **at least 12 weeks** of non-operative treatment, including **<u>at least two</u>** of the following: ○ Rest or activity modifications/limitations ○ Ice/heat ○ Protected weight bearing ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol ○ Brace/orthosis ○ Physical therapy modalities ○ Supervised home exercise ○ Weight optimization ○ Corticosteroid injection • No evidence of moderate to severe osteoarthritis (Kellgren-Lawrence Grade 3-4 based on weight-bearing radiographs and patellofemoral views [see grading appendix]) • No intra-articular cortisone injections within 4 weeks of surgery
….. **MENISCECTOMY / MENISCAL REPAIR** **NOTE**: There is a high incidence of incidental meniscal findings on knee MRI in middle-aged and elderly patients and several studies have indicated that there is no difference in outcome between operative and non-operative treatment of patients with degenerative meniscus tears, especially when associated with an arthritic knee.	….. **MENISCECTOMY / MENISCAL REPAIR** **NOTE**: There is a high incidence of incidental meniscal findings on knee MRI in middle-aged and elderly individuals[16,17] and several studies have indicated that there is no difference in outcome between operative and non-operative treatment of individuals with degenerative meniscus tears, especially when associated with an arthritic knee.[17-28] Arthroscopic debridement of degenerative meniscus tears in those with visible arthritis is generally not recommended and in some case, may worsen the symptoms and progression of the arthritis. Studies have also demonstrated an increased incidence of revision arthroplasty,

Meniscectomy and/or meniscal repair may be medically necessary when **ALL** of the following criteria in any of the following subsections are met: • Symptomatic meniscal tear confirmed by MRI results that demonstrate a peripheral tear in the vascular zone, root tear or other tear that the requesting physician considers repairable and is associated with pain localized to the corresponding compartment upon physical exam **OR** • MRI results demonstrate a meniscus tear in a pediatric or adolescent patient who complains of either pain or mechanical symptoms and has ANY positive meniscal findings on physical examination **OR** • History of acute injury/onset of symptoms with a locked knee and/or mechanical symptoms of locking • Physical examination demonstrates ANY positive meniscal findings on examination or demonstrates evidence of a locked knee (loss of terminal extension) • MRI demonstrates a bucket-handle tear of the meniscus. (Does not include an extruded meniscus or flap tears) **OR** • When **at least two** of the following 5 criteria are met: ○ History of "catching" or "locking" as reported by the patient ○ Knee joint line pain with forced hyperextension upon physical exam	infection, loosening and stiffness in individuals who underwent a knee arthroscopy prior to an arthroplasty. Meniscectomy and/or meniscal repair may be medically necessary when **ALL** of the following criteria in any of the following subsections are met: • Symptomatic meniscal tear confirmed by MRI results that demonstrate a peripheral tear in the vascular zone, root tear or other tear that the requesting physician considers repairable and is associated with pain localized to the corresponding compartment upon physical examination **OR** • MRI results demonstrate a meniscus tear in a pediatric or adolescent individual who complains of either pain or mechanical symptoms and has ANY positive meniscal findings on physical examination **OR** • History of acute injury/onset of symptoms with a locked knee and/or mechanical symptoms of locking • Physical examination demonstrates ANY positive meniscal findings on examination or demonstrates evidence of a locked knee (loss of terminal extension) • MRI demonstrates a bucket-handle tear of the meniscus. (Does not include an extruded meniscus or flap tears) **OR** • When **at least two** of the following 5 criteria are met: ○ History of "catching" or "locking" as reported by the individual ○ Knee joint line pain with forced hyperextension upon physical exam

○ Knee joint line pain with maximum flexion upon physical exam ○ Knee pain, crepitus, or an audible or palpable click with the McMurray's test or Apley grind test ○ Joint line tenderness to palpation upon physical exam **AND** • Failure of at least 6 weeks of non-operative treatment, including **<u>at least two</u>** of the following: ○ Rest or activity modifications/limitations ○ Ice/heat ○ Protected weight bearing ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol ○ Brace/orthosis ○ Physical therapy modalities ○ Supervised home exercise ○ Weight optimization ○ Corticosteroid injection …. Absolute Contraindications: Meniscectomy/Meniscal Repair • Arthroscopic meniscectomy or meniscal repair is never medically necessary in the presence of Kellgren-Lawrence Grade 4 osteoarthritis [see grading appendix]. …..	○ Knee joint line pain with maximum flexion upon physical exam ○ Knee pain, crepitus, or an audible or palpable click with the McMurray's test or Apley grind test ○ Joint line tenderness to palpation upon physical exam **AND** • Failure of at least 6 weeks of non-operative treatment, including **<u>at least two</u>** of the following: ○ Rest or activity modifications/limitations ○ Ice/heat ○ Protected weight bearing ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol ○ Brace/orthosis ○ Physical therapy modalities ○ Supervised home exercise ○ Weight optimization ○ Corticosteroid injection **AND** No intra-articular cortisone injections within 4 weeks of surgery …. Absolute Contraindications: Meniscectomy/Meniscal Repair • Arthroscopic meniscectomy or meniscal repair is never medically necessary in the presence of Kellgren-Lawrence Grade 4 osteoarthritis [see grading appendix]. ○ No intra-articular cortisone injections within 4 weeks of surgery …..

Absolute Contraindications: Meniscal Transplant • Uncorrected (staged or simultaneous) ligamentous insufficiency (ACL, PCL, MCL, LCL, PMC, PLC) • Uncorrected (staged or simultaneous) malalignment greater than 5 degrees varus or 5 degrees valgus • Uncorrected (staged or simultaneous) full-thickness articular cartilage isolated defects (International Cartilage Research Society Grade 3 or 4; Outerbridge Grade IV [see grading appendix]) • Kellgren-Lawrence Grade 3 or 4 osteoarthritis [see grading appendix]	**Absolute Contraindications: Meniscal Transplant** • Uncorrected (staged or simultaneous) ligamentous insufficiency (ACL, PCL, MCL, LCL, PMC, PLC) • Uncorrected (staged or simultaneous) malalignment greater than 5 degrees varus or 5 degrees valgus • Uncorrected (staged or simultaneous) full-thickness articular cartilage isolated defects (International Cartilage Research Society Grade 3 or 4; Outerbridge Grade IV [see grading appendix]) • Kellgren-Lawrence Grade 3 or 4 osteoarthritis [see grading appendix] • No intra-articular cortisone injections within 4 weeks of surgery
…. **SKELETALLY MATURE INDICATIONS** **Reparative Marrow Stimulation** Reparative marrow stimulation techniques such as microfracture & drilling may be medically necessary when **ALL** of the following criteria are met[53-61]: • Skeletally mature adult • MRI confirms a full-thickness weight-bearing lesion that is < 2.5 cm^2 • Patient is symptomatic (pain, swelling, mechanical symptoms of popping, locking, catching, or limited range of motion) • Patient is < 50 years of age • BMI < 35 (optimal outcomes if patient BMI < 30) • Physical exam findings and/or (imaging) results confirm knee has stable ligaments	…. **SKELETALLY MATURE INDICATIONS** **Reparative Marrow Stimulation** Reparative marrow stimulation techniques such as microfracture & drilling may be medically necessary when **ALL** of the following criteria are met[53-61]: • Skeletally mature adult • MRI confirms a full-thickness weight-bearing lesion that is < 2.5 cm^2 • Individual is symptomatic (pain, swelling, mechanical symptoms of popping, locking, catching, or limited range of motion) • Individual is < 50 years of age • BMI < 35 (optimal outcomes if patient BMI < 30) • Physical exam findings and/or (imaging) results confirm knee has stable ligaments

• No evidence of prior meniscectomy in same compartment (medial femoral condyle full thickness lesion and prior medial meniscectomy) unless concurrent meniscal transplant performed. **….** **Restorative Marrow Techniques** Restorative techniques such as, osteoarticular transfer system or osteochondral autograft transfer system (OATS), mosaicplasty, matrix autologous chondrocyte implantation (MACI), osteochondral allograft implantation, minced articular cartilage allograft transplantation (DeNovo natural tissue NT) may be medically necessary when **ALL** of the following criteria are met[58,62-73]: • Skeletally mature adult • MRI results confirm a full thickness chondral or osteochondral lesion of the femoral condyles or trochlea > 2.5 cm^2 • Patient is < 50 years of age • BMI < 35 (optimal outcomes if patient BMI < 30) • Patient has been symptomatic (pain, swelling, mechanical symptoms of popping, locking, catching, or limited range of motion) for at least 6 months • Failure of **at least 6 months** of non-operative treatment, including **at least two** of the following: ○ Rest or activity modifications/limitations ○ Ice/heat	• No evidence of prior meniscectomy in same compartment (medial femoral condyle full thickness lesion and prior medial meniscectomy) unless concurrent meniscal transplant performed. • No intra-articular cortisone injections within 4 weeks of surgery[1-3] …. **Restorative Marrow Techniques** Restorative techniques such as, osteoarticular transfer system or osteochondral autograft transfer system (OATS), mosaicplasty, matrix autologous chondrocyte implantation (MACI), osteochondral allograft implantation, minced articular cartilage allograft transplantation (DeNovo natural tissue NT) may be medically necessary when **ALL** of the following criteria are met[58,62-73]: • Skeletally mature adult • MRI results confirm a full thickness chondral or osteochondral lesion of the femoral condyles or trochlea > 2.5 cm^2 • Individual is < 50 years of age • BMI < 35 (optimal outcomes if patient BMI < 30) • Individual has been symptomatic (pain, swelling, mechanical symptoms of popping, locking, catching, or limited range of motion) for at least 6 months • Failure of **at least 6 months** of non-operative treatment, including **at least two** of the following: ○ Rest or activity modifications/limitations ○ Ice/heat

○ Protected weight bearing ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol ○ Brace/orthosis ○ Physical therapy modalities ○ Supervised home exercise ○ Weight optimization ○ Corticosteroid injection • MRI and/or physical findings confirm knee has normal alignment as defined as +/- 3 degrees from neutral on full-length mechanical axis long-leg x-ray (unless concurrent or staged tibial or femoral osteotomy performed) and stability (unless concurrent ligamentous repair or reconstruction performed) • MRI and/or X-rays shows no evidence of osteoarthritis (No greater than Kellgren-Lawrence Grade 2 changes on weight-bearing X-rays [see grading appendix]) • No prior meniscectomy in same compartment (unless concurrent or staged meniscal transplant performed)	○ Protected weight bearing ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol ○ Brace/orthosis ○ Physical therapy modalities ○ Supervised home exercise ○ Weight optimization ○ Corticosteroid injection • MRI and/or physical findings confirm knee has normal alignment as defined as +/- 3 degrees from neutral on full-length mechanical axis long-leg x-ray (unless concurrent or staged tibial or femoral osteotomy performed) and stability (unless concurrent ligamentous repair or reconstruction performed) • MRI and/or X-rays shows no evidence of osteoarthritis (No greater than Kellgren-Lawrence Grade 2 changes on weight-bearing X-rays [see grading appendix]) • No prior meniscectomy in same compartment (unless concurrent or staged meniscal transplant performed) • No intra-articular cortisone injections within 4 weeks of surgery
Patellofemoral Chondrosis Surgical intervention for the treatment of patellofemoral chondrosis (osteochondral autograft transfer or transplantation (OATS), microfracture, matrix autologous chondrocyte implantation (MACI), osteochondral allograft implantation, minced articular cartilage allograft transplantation (DeNovo NT), tibial tubercle osteotomy) may be medically necessary when **ALL** of the following criteria are met[74-79]: • Anterior knee pain and loss of function	**Patellofemoral Chondrosis** Surgical intervention for the treatment of patellofemoral chondrosis (osteochondral autograft transfer or transplantation (OATS), microfracture, matrix autologous chondrocyte implantation (MACI), osteochondral allograft implantation, minced articular cartilage allograft transplantation (DeNovo NT), tibial tubercle osteotomy) may be medically necessary when **ALL** of the following criteria are met[74-79]: • Anterior knee pain and loss of function

• Other extra-articular or intra-articular sources of pain or dysfunction have been excluded (referred pain, radicular pain, tendinitis, bursitis, neuroma) • Physical exam localizes tenderness to the patellofemoral joint with pain aggravated by activities that load the joint (single leg squat, descending > ascending stairs or stair climbing, and being in seated position for extended periods of time with knee flexed) • Radiologic imaging shows grade 3 or 4 patellofemoral chondrosis (International Cartilage Research Society classification*) or grade III or IV articular cartilage changes, documented by prior arthroscopic evaluation (Outerbridge Classification*) (*see grading appendix) • Failure of **at least 6 months** of non-operative treatment, including **at least two** of the following: ○ Rest or activity modifications/limitations ○ Ice/heat ○ Protected weight bearing ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol ○ Brace/orthosis ○ Physical therapy modalities ○ Supervised home exercise ○ Weight optimization ○ Corticosteroid injection • No evidence of osteoarthritis (No greater than Kellgren-Lawrence Grade 2 changes on weight-bearing X-rays in the medial/lateral compartments) [see grading appendix]	• Other extra-articular or intra-articular sources of pain or dysfunction have been excluded (referred pain, radicular pain, tendinitis, bursitis, neuroma) • Physical exam localizes tenderness to the patellofemoral joint with pain aggravated by activities that load the joint (single leg squat, descending > ascending stairs or stair climbing, and being in seated position for extended periods of time with knee flexed) • Radiologic imaging shows grade 3 or 4 patellofemoral chondrosis (International Cartilage Research Society classification*) or grade III or IV articular cartilage changes, documented by prior arthroscopic evaluation (Outerbridge Classification*) (*see grading appendix) • Failure of **at least 6 months** of non-operative treatment, including **at least two** of the following: ○ Rest or activity modifications/limitations ○ Ice/heat ○ Protected weight bearing ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol ○ Brace/orthosis ○ Physical therapy modalities ○ Supervised home exercise ○ Weight optimization ○ Corticosteroid injection • No evidence of osteoarthritis (No greater than Kellgren-Lawrence Grade 2 changes on weight-bearing X-rays in the medial/lateral compartments) [see grading appendix] No intra-articular cortisone injections within 4 weeks of surgery

Synovectomy (major [2+ compartments], minor [1 compartment]) Synovectomy may be medically necessary when **ALL** of the following criteria in any of the following subsections are met[80-82]: • Proliferative rheumatoid synovium (in patients with established rheumatoid arthritis according to the American College of Rheumatology Guidelines [see grading appendix]) • Not responsive to disease modifying drug (DMARD) therapy for at least 6 months and failure of at least 6 weeks of non-operative treatment • At least one instance of aspiration of joint effusion and corticosteroid injection (if no evidence of infection) **OR** • Hemarthrosis from injury, coagulopathy or bleeding disorder confirmed by physical exam, joint aspiration, and/or MRI **OR** • Proliferative pigmented villonodular synovitis, synovial chondromatosis, sarcoid synovitis, or similar proliferative synovial disease, traumatic hypertrophic synovitis confirmed by history, MRI or biopsy • Failure of **at least 6 weeks** of non-operative treatment, including **at least two** of the following: ○ Rest or activity modifications/limitations ○ Ice/heat ○ Protected weight bearing ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol	**Synovectomy (major [2+ compartments], minor [1 compartment])** Synovectomy may be medically necessary when **ALL** of the following criteria in any of the following subsections are met[80-82]: • Proliferative rheumatoid synovium (in individuals with established rheumatoid arthritis according to the American College of Rheumatology Guidelines [see grading appendix]) • Not responsive to disease modifying drug (DMARD) therapy for at least 6 months and failure of at least 6 weeks of non-operative treatment • At least one instance of aspiration of joint effusion and corticosteroid injection (if no evidence of infection) **OR** • Hemarthrosis from injury, coagulopathy or bleeding disorder confirmed by physical exam, joint aspiration, and/or MRI **OR** • Proliferative pigmented villonodular synovitis, synovial chondromatosis, sarcoid synovitis, or similar proliferative synovial disease, traumatic hypertrophic synovitis confirmed by history, MRI or biopsy • Failure of **at least 6 weeks** of non-operative treatment, including **at least two** of the following: ○ Rest or activity modifications/limitations ○ Ice/heat ○ Protected weight bearing ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol

○ Brace/orthosis ○ Physical therapy modalities ○ Supervised home exercise ○ Weight optimization ○ Corticosteroid injection • At least one instance of aspiration of joint effusion and injection of corticosteroid (if no evidence of infection) **OR** • Detection of painful plica confirmed by physical exam and MRI findings • Failure of at least 12 weeks of non-operative treatment (see above for criteria) • At least one instance of aspiration of joint effusion OR single injection of corticosteroid (effusion may not be present with symptomatic plica) **Loose Body Removal** Loose body removal may be medically necessary when the following criteria are met: • Documentation of mechanical symptoms the cause limitation or loss of function • X-ray or MRI documentation of a loose body	○ Brace/orthosis ○ Physical therapy modalities ○ Supervised home exercise ○ Weight optimization ○ Corticosteroid injection • At least one instance of aspiration of joint effusion and injection of corticosteroid (if no evidence of infection) **OR** • Detection of painful plica confirmed by physical exam and MRI findings • Failure of at least 12 weeks of non-operative treatment (see above for criteria) • At least one instance of aspiration of joint effusion OR single injection of corticosteroid (effusion may not be present with symptomatic plica) • No intra-articular cortisone injections within 4 weeks of surgery1-3 **Loose Body Removal** Loose body removal may be medically necessary when the following criteria are met: • Documentation of mechanical symptoms the cause limitation or loss of function • X-ray or MRI documentation of a loose body • No intra-articular cortisone injections within 4 weeks of surgery1-3 **Lateral Patellar Compression Syndrome**

Lateral Patellar Compression Syndrome Surgical intervention for the treatment of lateral patellar compression syndrome is indicated when **ALL** the following criteria are met[83-87]: • Evidence of lateral patellar tilt from radiologic images (patellofemoral view: Merchant (45 degrees flexion; and/or skyline (60-90 degrees flexion); and/or sunrise (60-90 degrees flexion) • Associated lateral patella facet Kellgren-Lawrence changes grade 1, 2, or 3 [see grading appendix] • Reproducible isolated lateral patellofemoral pain with patellar tilt test • Failure of **at least 6 months** of non-operative treatment, including quadriceps strengthening and appropriate hamstring/IT band stretching and patellar mobilization techniques, and **at least one** of the following: ○ Rest or activity modifications/limitations ○ Ice/heat ○ Protected weight bearing ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol ○ Brace/orthosis ○ Physical therapy modalities ○ Supervised home exercise ○ Weight optimization ○ Corticosteroid injection • No evidence of patellar dislocation. • No evidence of medial patellofemoral changes (Kellgren-Lawrence Grade 2 osteoarthritis or higher [see grading appendix])	Surgical intervention for the treatment of lateral patellar compression syndrome is indicated when **ALL** the following criteria are met[83-87]: • Evidence of lateral patellar tilt from radiologic images (patellofemoral view: Merchant (45 degrees flexion; and/or skyline (60-90 degrees flexion); and/or sunrise (60-90 degrees flexion) • Associated lateral patella facet Kellgren-Lawrence changes grade 1, 2, or 3 [see grading appendix] • Reproducible isolated lateral patellofemoral pain with patellar tilt test • Failure of **at least 6 months** of non-operative treatment, including quadriceps strengthening and appropriate hamstring/IT band stretching and patellar mobilization techniques, and **at least one** of the following: ○ Rest or activity modifications/limitations ○ Ice/heat ○ Protected weight bearing ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol ○ Brace/orthosis ○ Physical therapy modalities ○ Supervised home exercise ○ Weight optimization ○ Corticosteroid injection • No evidence of patellar dislocation. • No evidence of medial patellofemoral changes (Kellgren-Lawrence Grade 2 osteoarthritis or higher [see grading appendix])

	• No intra-articular cortisone injections within 4 weeks of surgery
Patellar Malalignment and/or Patellar Instability Surgical intervention for the treatment of patellar malalignment and/or patellar instability is indicated when **ALL** of the following criteria in any of the following subsections are met[88-95]: • Acute traumatic patellar dislocation is associated with an osteochondral fracture, loose body, vastus medialus obliquus/medial patellofemoral ligament muscle avulsion, or other intra-articular injury that requires urgent operative management • **OR** • Repeat (2 or more) patellar dislocations or subluxations have occurred despite 6 months of non-operative treatment with radiologic confirmation of MPFL (medial patellofemoral ligament) deficiency (including evidence of acute or remote injury, scarring, incomplete healing, etc.) **OR** physical examination demonstrates evidence of patellar instability (positive apprehension test). **OR** • When all the following criteria have been met: ○ Physical exam has patellofemoral tenderness and abnormal articulation of the patella in the femoral trochlear groove (patellar apprehension or positive J sign) ○ Radiologic and/or advanced images (CT or MRI) rule out fracture or loose body, and show abnormal articulation, trochlear dysplasia, abnormal TT-TG distance (tibial tubercle-trochlear	**Patellar Malalignment and/or Patellar Instability** Surgical intervention for the treatment of patellar malalignment and/or patellar instability is indicated when **ALL** of the following criteria in any of the following subsections are met[88-95]: • Acute traumatic patellar dislocation is associated with an osteochondral fracture, loose body, vastus medialus obliquus/medial patellofemoral ligament muscle avulsion, or other intra-articular injury that requires urgent operative management • **OR** • Repeat (2 or more) patellar dislocations or subluxations have occurred despite 6 months of non-operative treatment with radiologic confirmation of MPFL (medial patellofemoral ligament) deficiency (including evidence of acute or remote injury, scarring, incomplete healing, etc.) **OR** physical examination demonstrates evidence of patellar instability (positive apprehension test). **OR** • When all the following criteria have been met: ○ Physical exam has patellofemoral tenderness and abnormal articulation of the patella in the femoral trochlear groove (patellar apprehension or positive J sign) ○ Radiologic and/or advanced images (CT or MRI) rule out fracture or loose body, and show abnormal articulation, trochlear dysplasia, abnormal TT-TG distance (tibial tubercle-trochlear

groove)* or other abnormality related to malalignment[92,96-99]; ○ Failure of at least 6 months of non-operative treatment, including at least 3 months of physical therapy, and **ONE** of the following: ▪ Rest or activity modifications/limitations ▪ Ice/heat ▪ Protected weight bearing ▪ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol ▪ Brace/orthosis ▪ Supervised home exercise ▪ Weight optimization ▪ Corticosteroid injection **….** **Lysis of Adhesions for Arthrofibrosis of the knee** Surgical indications are based on relevant clinical symptoms, physical exam, radiologic findings, time from primary surgery, and response to conservative management when medically appropriate. Improved range of motion may be accomplished through arthroscopically assisted or open lysis of adhesions with general anesthesia, regional anesthesia, or sedation.[109-111] Lysis of adhesions for arthrofibrosis of the knee may be indicated when **ALL** of the following criteria in any of the following subsections are met: • Physical exam findings demonstrate inadequate range of motion of the knee, defined as less than 110 degrees of flexion or lack of full extension	groove)* or other abnormality related to malalignment[92,96-99]; ○ Failure of at least 6 months of non-operative treatment, including at least 3 months of physical therapy, and **ONE** of the following: ▪ Rest or activity modifications/limitations ▪ Ice/heat ▪ Protected weight bearing ▪ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol ▪ Brace/orthosis ▪ Supervised home exercise ▪ Weight optimization ▪ Corticosteroid injection • No intra-articular cortisone injections within 4 weeks of surgery …. **Lysis of Adhesions for Arthrofibrosis of the knee** Surgical indications are based on relevant clinical symptoms, physical exam, radiologic findings, time from primary surgery, and response to conservative management when medically appropriate. Improved range of motion may be accomplished through arthroscopically assisted or open lysis of adhesions with general anesthesia, regional anesthesia, or sedation.[109-111] Lysis of adhesions for arthrofibrosis of the knee may be indicated when **ALL** of the following criteria in any of the following subsections are met: • Physical exam findings demonstrate inadequate range of motion of the knee, defined as less than 110 degrees of flexion or lack of full extension

• Failure to improve range of motion of the knee despite 6 weeks (12 visits) of documented physical therapy • Patient is more than 12 weeks after ligamentous or joint reconstruction, or resolved infection **OR** • Patient is more than 12 weeks after trauma, or resolved infection • Patient has native knee • Manipulation under anesthesia is also performed	• Failure to improve range of motion of the knee despite 6 weeks (12 visits) of documented physical therapy • Individual is more than 12 weeks after ligamentous or joint reconstruction, or resolved infection • No intra-articular cortisone injections within 4 weeks of surgery1-3 **OR** • Individual is more than 12 weeks after trauma, or resolved infection • Individual has native knee • Manipulation under anesthesia is also performed • No intra-articular cortisone injections within 4 weeks of surgery[1-3] NOTE: “patient” was changed to “individual” throughout the guideline – not all instances were copied above.

SHOULDER ARTHROSCOPY	
Previous (red indicates deleted text)	New (blue indicates new text)
General Requirements for Elective Surgery of the Shoulder Elective surgery of the shoulder may be considered if the following general criteria are met: a. There is clinical correlation of patients ubjective complaints with objective exam findings and/or imaging (when applicable) b. Patient has limited function (age-appropriate activities of daily living (ADLs), occupational, athletic) c. Patient is medically stable with no uncontrolled comorbidities (such as diabetes) d. Patient does not have an active local or systemic infection e. Patient does not have active, untreated drug dependency (including but not limited to narcotics, opioids, muscle relaxants) unless engaged in a treatment program A smoking cessation program is highly recommended and should be instituted pre-operatively for all actively smoking patients[1,2] **….** **DIAGNOSTIC SHOULDER ARTHROSCOPY** Diagnostic arthroscopy is considered medically necessary:	**General Requirements for Elective Surgery of the Shoulder** Elective surgery of the shoulder may be considered if the following general criteria are met: • There is clinical correlation of individual's subjective complaints with objective exam findings and/or imaging (when applicable) • Individual has limited function (age-appropriate activities of daily living (ADLs), occupational, athletic) • Individual is medically stable and optimized for surgery with no uncontrolled comorbidities (such as diabetes) • Individual does not have an active local or systemic infection • Individual does not have active, untreated drug dependency (including but not limited to narcotics, opioids, muscle relaxants) unless engaged in a treatment program A smoking cessation program is highly recommended and should be instituted pre-operatively for all actively smoking patients[1,2] …. **DIAGNOSTIC SHOULDER ARTHROSCOPY** Diagnostic arthroscopy is considered medically necessary: For the evaluation of pain prior to total shoulder arthroplasty OR

When **All** of the following criteria have been met: • Severe, disabling pain and/or a documented loss of shoulder function which interferes with the ability to carry out age-appropriate activities of daily living and/or demands of employment • Individual demonstrates **any** of the following abnormal, shoulder physical examination findings, as compared to the non-involved side: ○ Functionally limited range of motion (active or passive) ○ Measurable loss in strength ○ Positive impingement signs • Failure of non-surgical management for at least three 3 months duration to include **TWO** of the following: ○ Rest or activity modifications/limitations ○ Ice/heat ○ Use of a sling/immobilizer/brace ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol ○ Physical therapy modalities ○ Supervised home exercise ○ Corticosteroid injection • Individual has undergone an appropriate radiographic work-up that includes routine x-rays and an MRI evaluation which are determined to be inconclusive for internal derangement/pathology • Other potential diagnostic conditions have been excluded, including, but not limited to, fracture,	When **All** of the following criteria have been met: • Severe, disabling pain and/or a documented loss of shoulder function which interferes with the ability to carry out age-appropriate activities of daily living and/or demands of employment • Individual demonstrates **any** of the following abnormal, shoulder physical examination findings, as compared to the non-involved side: ○ Functionally limited range of motion (active or passive) ○ Measurable loss in strength ○ Positive impingement signs • Failure of non-surgical management for at least three 12 weeks duration to include **TWO** of the following: ○ Rest or activity modifications/limitations ○ Ice/heat ○ Use of a sling/immobilizer/brace ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics, tramadol ○ Physical therapy modalities ○ Supervised home exercise • Individual has undergone an appropriate radiographic work-up that includes routine x-rays and an MRI evaluation which are determined to be inconclusive for internal derangement/pathology • Other potential diagnostic conditions have been excluded, including, but not limited to, fracture, thoracic outlet syndrome, brachial plexus disorders, referred neck pain and arthritis

thoracic outlet syndrome, brachial plexus disorders, referred neck pain and arthritis	
ROTATOR CUFF REPAIR (RCR) Surgical treatment of a rotator cuff tear (RCT) should only be performed when there is a clinical correlation of patient symptoms, clinical exam findings, imaging, and failed non-operative management (where required).[8-10]	**ROTATOR CUFF REPAIR (RCR)** Surgical treatment of a rotator cuff tear (RCT) should only be performed when there is a clinical correlation of symptoms, clinical exam findings, imaging, and failed non-operative management (where required).[8-10] NOTE: See section on subscapularis tears
Partial-Thickness Rotator Cuff Tear or Calcific Tendinitis Surgical repair of **a partially torn rotator cuff** may be necessary when **ALL** of the following criteria are met: ○ Reproducible rotator cuff pain patterns (lateral arm, deltoid pain rarely radiating past the elbow, night pain, or pain with overhead motions) ○ Positive impingement signs and/or tests on exam (Hawkins, Neer, Jobe test or reproducible pain when arm is positioned overhead (above plane of shoulder) with relief of pain when arm is repositioned below the plane of the shoulder)[11] ○ Functional loss (age-appropriate activities of daily living (ADL), occupational, athletic) ○ MRI or ultrasound[12,13] that demonstrates a partial thickness tear (articular-sided, concealed, or bursal-sided) or evidence of calcific tendinitis ○ Failure of at least 12 weeks of non-operative treatment, including **at least three** of the following criteria[14-17]:	**Partial-Thickness Rotator Cuff Tear or Calcific Tendinitis** Surgical repair of **a partially torn rotator cuff** may be necessary when **ALL** of the following criteria are met: • Reproducible rotator cuff pain patterns (lateral arm, deltoid pain rarely radiating past the elbow, night pain, or pain with overhead motions) • Positive impingement signs and/or tests on exam (Hawkins, Neer, Jobe test or reproducible pain when arm is positioned overhead (above plane of shoulder) with relief of pain when arm is repositioned below the plane of the shoulder)[11] • Functional loss (age-appropriate activities of daily living (ADL), occupational, athletic) • MRI or ultrasound[12,13] that demonstrates a partial thickness tear (articular-sided, concealed, or bursal-sided) or evidence of calcific tendinitis • Failure of at least 12 weeks of non-operative treatment, including **at** least two of the following criteria[14-17]:

○ Physical therapy or properly instructed home exercise program ○ Rest or activity modification ○ Minimum of 4 weeks of oral NSAIDs (if not medically contraindicated) ○ Single injection of corticosteroid and local anesthetic into subacromial or intra-articular space *For surgical excision of calcific tendinopathy, at least one prior cortisone injection is required **…..** **Small (< 1 cm), Full-Thickness Rotator Cuff Tear** Surgical repair of a **small full-thickness rotator cuff tear** may be necessary when **ALL** of the following criteria are met: ○ Reproducible rotator cuff pain patterns (lateral arm, deltoid pain not radiating past the elbow, night pain, or pain with overhead motions) ○ Positive impingement signs and/or tests on exam (Hawkins, Neer, Jobe test or reproducible pain when arm is positioned overhead (above plane of shoulder) with relief of pain when arm is repositioned below the plane of the shoulder) ○ Functional loss (age-appropriate activities of daily living (ADLs), occupational, athletic) ○ Rotator cuff weakness or severe pain with rotator cuff testing on physical exam ○ MRI or Ultrasound[12,13] that demonstrates a small, full thickness tear (< 1 cm) ○ Failure of at least 6 weeks of non-operative treatment*, including physical therapy or a properly instructed home	○ Physical therapy or properly instructed home exercise program ○ Rest or activity modification ○ Minimum of 4 weeks of oral NSAIDs (if not medically contraindicated) • No cortisone injection within 12 weeks prior to surgery. ….. **Small (< 1 cm), Full-Thickness Rotator Cuff Tear** Surgical repair of a **small full-thickness rotator cuff tear** may be necessary when **ALL** of the following criteria are met: • Reproducible rotator cuff pain patterns (lateral arm, deltoid pain not radiating past the elbow, night pain, or pain with overhead motions) • Positive impingement signs and/or tests on exam (Hawkins, Neer, Jobe test or reproducible pain when arm is positioned overhead (above plane of shoulder) with relief of pain when arm is repositioned below the plane of the shoulder) • Functional loss (age-appropriate activities of daily living (ADLs), occupational, athletic) • Rotator cuff weakness or severe pain with rotator cuff testing on physical exam • MRI or Ultrasound[12,13] that demonstrates a small, full thickness tear (< 1 cm) • Failure of at least 6 weeks of non-operative treatment*, including physical therapy or a properly instructed home

exercise program (that includes exercises for scapular dyskinesis when present) **AND** at least one of the following: ○ Rest or activity modification ○ Minimum of 4 weeks of oral NSAIDs (if not medically contraindicated) ○ Single injection of corticosteroid and local anesthetic into subacromial or intra-articular space	exercise program (that includes exercises for scapular dyskinesis when present) **AND** one of the following: ○ Rest or activity modification ○ Minimum of 4 weeks of oral NSAIDs (if not medically contraindicated) • No cortisone injection within 12 weeks prior to surgery.
*__NOTE__: The requirement for conservative, non-operative treatment is waived in patients less than age 55 with an acute traumatic tear (onset of shoulder pain attributed to a specific traumatic event with no prior history of significant shoulder pain). For ages > 55, non-operative treatment may be waived on a case-by-case basis.	*__NOTE__: The requirement for conservative, non-operative treatment is waived in individuals less than age 55 with an acute traumatic tear (onset of shoulder pain attributed to a specific traumatic event with no prior history of significant shoulder pain). For ages > 55, non-operative treatment may be waived on a case-by-case basis.
Surgical Management Moderate evidence supports that healed rotator cuff repairs show improved patient-reported and functional outcomes compared with physical therapy and unhealed rotator cuff repairs	
Medium (1-3 cm) or Large (3-5 cm), Full-Thickness Rotator Cuff Tear	**Medium (1-3 cm) or Large (3-5 cm), Full-Thickness Rotator Cuff Tear**
Surgical repair of a **medium or large full-thickness rotator cuff tear** may be necessary when the following criteria are met: • Significant progression of a full-thickness tear on serial imaging performed at least 3 months (at least 50% increase in tear size) **OR** • When **ALL** of the following criteria are met:	Surgical repair of a **medium or large full-thickness rotator cuff tear** may be necessary when the following criteria are met: • Significant progression of a full-thickness tear on serial imaging performed at least 12 weeks apart (at least 50% increase in tear size) **OR** • When **ALL** of the following criteria are met:

○ Reproducible rotator cuff pain patterns (lateral arm, deltoid pain rarely not radiating past the elbow, night pain, or pain with overhead motions) ○ Positive impingement signs and/or tests on exam (Hawkins, Neer, Jobe, empty can or drop-arm test or reproducible pain when arm is positioned overhead (above plane of shoulder) with relief of pain when arm is repositioned below the plane of the shoulder ○ Rotator cuff weakness or severe pain with rotator cuff testing on physical exam ○ Functional loss (age-appropriate activities of daily living (ADLs), occupational or athletic) ○ MRI or ultrasound[12,13] results support a medium (1-3 cm) or large (3-5 cm), full-thickness tear (tear must be a complete single tendon or greater)	○ Reproducible rotator cuff pain patterns (lateral arm, deltoid pain rarely not radiating past the elbow, night pain, or pain with overhead motions) ○ Positive impingement signs and/or tests on exam (Hawkins, Neer, Jobe, empty can or drop-arm test or reproducible pain when arm is positioned overhead (above plane of shoulder) with relief of pain when arm is repositioned below the plane of the shoulder ○ Rotator cuff weakness or severe pain with rotator cuff testing on physical exam ○ Functional loss (age-appropriate activities of daily living (ADLs), occupational or athletic) ○ MRI or ultrasound[12,13] results support a medium (1-3 cm) or large (3-5 cm), full-thickness tear (tear must be a complete single tendon or greater) ○ No cortisone injection within 12 weeks prior to surgery.18-26
<u>Massive (> 5 cm and ≥ 2 tendons involved), Full-Thickness Rotator Cuff Tear</u> Surgical repair of **a massive torn rotator cuff *WITH OR WITHOUT*** a superior capsular reconstruction may be necessary when **ALL** of the following criteria are met[27-30]: • MRI or ultrasound[12,13] demonstrates massive (> 5 cm), full-thickness tears (with intact or reparable subscapularis tendon for superior capsular reconstruction) • MRI demonstrates no advanced fatty changes (Goutallier stage 0 (normal muscle), 1 (some fatty streaks), or 2 (less than 50% fatty degeneration or infiltration)[31-33] • Warner classification of atrophy "none" or "mild"[34,35]	**<u>Massive (> 5 cm and ≥ 2 tendons involved), Full-Thickness Rotator Cuff Tear</u>** Surgical repair of **a massive torn rotator cuff *WITH OR WITHOUT*** a superior capsular reconstruction may be necessary when **ALL** of the following criteria are met[27-30]: • MRI or ultrasound[12,13] demonstrates massive (> 5 cm), full-thickness tears (with intact or reparable subscapularis tendon for superior capsular reconstruction) • MRI demonstrates no advanced fatty changes (Goutallier stage 0 (normal muscle), 1 (some fatty streaks), or 2 (less than 50% fatty degeneration or infiltration)[31-33] • Warner classification of atrophy "none" or "mild"[34,35]

• No x-ray evidence of chronic subacromial articulation of the humeral head, defined as an acromiohumeral space less than 5 mm (Hamada grade 2)[29,36,37] • No advanced or severe arthritis (severe narrowing of glenohumeral space or bone-on- bone articulation, large osteophytes, subchondral sclerosis, or cysts, etc.)	• No x-ray evidence of chronic subacromial articulation of the humeral head, defined as an acromiohumeral space less than 5 mm (Hamada grade 2)[29,36,37] • No advanced or severe arthritis (severe narrowing of glenohumeral space or bone-on- bone articulation, large osteophytes, subchondral sclerosis, or cysts, etc.) • No cortisone injection within 12 weeks prior to surgery.18-26
NOTE: AAOS consensus guidelines state that partial repair and superior capsular reconstruction, can improve patient reported outcomes	**NOTE**: AAOS consensus guidelines state that partial repair and superior capsular reconstruction, can improve patient reported outcomes
	Subscapularis Tears Surgical repair of a subscapularis rotator cuff tear may be necessary when the following criteria are met: • History of an acute injury or chronic complaints of anterior shoulder pain, weakness, or functional impairment • Positive physical examination findings of subscapularis deficiency – lift-off, bear-hug, belly press test, etc. • MRI demonstrates a significant partial thickness tear (at least 50% of tendon), full-thickness tear, or any tear associated with subluxation of the biceps tendon • No cortisone injection within 12 weeks prior to surgery.
….. **Rotator Cuff Repair (RCR) Revision** • Surgical revision within 1 year of a previously repaired small, medium, large or massive torn rotator cuff will be reviewed	….. **Rotator Cuff Repair (RCR) Revision** • Surgical revision within 1 year of a previously repaired small, medium, large or massive torn rotator cuff will be reviewed

on a case-by-case basis and must include an MRI (with or without arthrogram) or CT arthrogram that demonstrate failure of healing (Sugaya type 4-5, see background section) or recurrent tear > 3 months after index surgery.[54] All RCR revision cases greater than 1 year following an initial repair must again meet indications as specified by tear size listed in Background section. **Contraindications** (applies to all rotator cuff repair): • Active infection (local or remote) • Treatment of asymptomatic, full thickness rotator cuff tear • Active systemic bacteremia • Deltoid or rotator cuff paralysis • Advanced or severe arthritis (severe narrowing of glenohumeral space or bone-on-bone articulation, large osteophytes, subchondral sclerosis, or cysts, etc.) **LABRAL REPAIRS** **Superior Labral Anterior-Posterior (SLAP) Tear** Surgical indications should be focused on clinical symptoms and failure to respond to non-operative treatments, rather than imaging (due to a higher percentage of tears being missed on images AND significant over-diagnosing of tears based on imaging-alone). Repair *(not debridement of a SLAP lesion)* may be necessary when **ALL** of the following criteria are met:	on a case-by-case basis and must include an MRI (with or without arthrogram) or CT arthrogram that demonstrate failure of healing (Sugaya type 4-5, see background section) or recurrent tear > 12 weeks after index surgery.[54] All RCR revision cases greater than 1 year following an initial repair must again meet indications as specified by tear size listed in Background section. **Contraindications** (applies to all rotator cuff repair): • Active infection (local or remote) • Treatment of asymptomatic, full thickness rotator cuff tear • Active systemic bacteremia • Deltoid or rotator cuff paralysis • Advanced or severe arthritis (severe narrowing of glenohumeral space or bone-on-bone articulation, large osteophytes, subchondral sclerosis, or cysts, etc.) • No cortisone injection within 12 weeks prior to surgery. **LABRAL REPAIRS** Repair of **Superior Labral Anterior-Posterior (SLAP) Tear** Surgical indications should be focused on clinical symptoms and failure to respond to non-operative treatments, rather than imaging (due to a higher percentage of tears being missed on images AND significant over-diagnosing of tears based on imaging-alone). Repair *(not debridement of a SLAP lesion)* may be necessary when **ALL** of the following criteria are met:

• History compatible with tear (acute onset in thrower or overhead athlete, fall, traction injury, shear injury (MVA), lifting injury
• Pain localized to the glenohumeral joint (often only associated with certain reaching or lifting activities and at night) or painful catching/popping/locking sensations
• Inability to perform desired tasks without pain (age-appropriate ADLs, sports, occupation)
• Age < 40; requests for SLAP repair in an patient age > 40 will be reviewed on a case-by-case basis[55]
• MRI demonstrating superior labral tear
• Type 2 or 4 SLAP tear (not type 1 or 3)
  ○ I - Labral and biceps fraying, anchor intact
  ○ II - Labral fraying with detached biceps tendon anchor
  ○ III - Bucket handle tear, intact biceps tendon anchor (biceps separates from bucket handle tear)
  ○ IV - Bucket handle tear with detached biceps tendon anchor (remains attached to bucket handle tear)
• Failure of at least 12 weeks of non-operative treatment, including activity modification/avoidance of painful activities **AND** at least **ONE** of the following:
  ○ Minimum of 4 weeks of oral NSAIDs (if not medically contraindicated)
  ○ Physical therapy or a properly instructed home exercise program
  ○ Intra articular injection
Contraindications:
	• History compatible with tear (acute onset in thrower or overhead athlete, fall, traction injury, shear injury (MVA), lifting injury
	• Pain localized to the glenohumeral joint (often only associated with certain reaching or lifting activities and at night) or painful catching/popping/locking sensations
	• Inability to perform desired tasks without pain (age-appropriate ADLs, sports, occupation)
	• Physical examination demonstrates findings of a SLAP tear (active compression test (O'Brien test), compression rotation test, clunk or crank test, etc.)
	• Age < 40; requests for SLAP repair in an individual age > 40 will be reviewed on a case-by-case basis[55]
	• MRI demonstrating superior labral tear
	• Type 2 or 4 SLAP tear (not type 1 or 3)
	  ○ I - Labral and biceps fraying, anchor intact
	  ○ II - Labral fraying with detached biceps tendon anchor
	  ○ III - Bucket handle tear, intact biceps tendon anchor (biceps separates from bucket handle tear)
	  ○ IV - Bucket handle tear with detached biceps tendon anchor (remains attached to bucket handle tear)
	• Failure of at least 12 weeks of non-operative treatment, including activity modification/avoidance of painful activities **AND** at least **ONE** of the following:
	  ○ Minimum of 4 weeks of oral NSAIDs (if not medically contraindicated)
	  ○ Physical therapy or a properly instructed home exercise program
	Contraindications:

• ANY evidence of degenerative disease upon imaging • Smoker and age > 40 • Diabetics with poor control HgBA1c > 7 • MRI findings not attributable to normal common variants (for example, labral overhang) **NOTE**: In cases where a true SLAP tear exists, but the patient has one or more contraindications or findings at the time of surgery indicates that a repair is not feasible, a SLAP debridement (limited, extensive debridement), biceps tenotomy or tenodesis may be an alternative. See Tenotomy and Tenodesis Indications. **…..** Latarjet or Remplissage procedures for **recurrent (two or more episodes of subluxation or dislocations)** may be necessary when ALL of the following criteria are met[63-75]: • Recurrent instability (subluxation or dislocation) • Evidence of a large engaging ("off-track")* Hill-Sachs lesion of the humerus, or greater than 20% glenoid bone loss by x-ray, CT, or MRI • Range of motion is not limited by stiffness upon physical exam - (not required if there has been a recent episode of instability) • Clinical exam findings demonstrate positive apprehension test, positive relocation test, positive labral tests grind test, or objective laxity with pain	• ANY evidence of degenerative disease upon imaging • Smoker and age > 40 • Diabetics with poor control HgBA1c > 7 • MRI findings not attributable to normal common variants (for example, labral overhang) **NOTE**: In cases where a true SLAP tear exists, but the individual has one or more contraindications or findings at the time of surgery that indicates a repair is not feasible, a SLAP debridement (limited, extensive debridement), biceps tenotomy or tenodesis may be an alternative.[55-57] Even with repairable type II SLAP tears, biceps tenodesis is a viable alternative to repair.[58-60] See Tenotomy and Tenodesis Indications. ….. Latarjet or Remplissage procedures for **recurrent (two or more dislocations)** may be necessary when ALL of the following criteria are met[63-75]: • Recurrent anterior dislocations • Evidence of an engaging ("off-track")* Hill-Sachs lesion of the humerus, or greater than 20% glenoid bone loss by x-ray, CT, or MRI • Range of motion is not limited by stiffness upon physical exam - (not required if there has been a recent episode of instability) * The glenoid track, a zone of dynamic contact during arm elevation, is a unique biomechanical model that uses both glenoid and humeral head bone loss to predict subsequent risk of humeral head engagement and possible dislocation. An engaging Hill-Sachs bony defect, or "off-track" lesion, is one in which the

	width of the bony defect is greater than the width of the glenoid track. Off-track engagement occurs when the medial margin of the Hill-Sachs defect engages the glenoid track. If there is bony loss of the glenoid as well, the glenoid track will proportionately be less, causing greater risk of engagement. A nonengaging, or "on-track" Hill-Sachs lesion is one in which the width of the bony defect is less than the width of the glenoid track. Using preoperative CT or MR imaging, the glenoid track can identify individuals who are more likely to fail only a primary capsuloligamentous Bankart repair. Glenoid track evaluation shows that restoring the track (glenoid) to its normal width should be the first priority in restoring shoulder stability.
Long Head Biceps (LHB) Tenotomy/Tenodesis The indications for tenodesis and tenotomy are the same with the exception that tenodesis is typically better for more active, muscular individuals that are performing higher-demand activities for work or sport. Tenotomy is often preferred in patients that smoke (this is a relative indication of tenotomy over tenodesis) due to healing problems in tenodesis. Tenotomy or tenodesis may be necessary when the following criteria are met[38,55,90,91] • **Any of the following:** ○ When performed in conjunction with a total shoulder arthroplasty ○ Age > 50 with SLAP tear ○ Smoker with SLAP labral tear (regardless of age, more significant with increasing age) ○ Failed SLAP repair	**Long Head Biceps (LHB) Tenotomy/Tenodesis** The indications and outcomes for tenodesis and tenotomy are the same with the exception that tenodesis is typically better for more active, muscular individuals that are performing higher-demand activities for work or sport. Tenotomy is often preferred in individuals that smoke (this is a relative indication of tenotomy over tenodesis) due to healing problems in tenodesis. Tenotomy or tenodesis may be necessary when the following criteria are met[38,55,90,91]: • **Any of the following:** ○ When performed in conjunction with a total shoulder arthroplasty ○ When performed in conjunction with a subscapularis tendon repair ○ Age > 50 with SLAP tear ○ Smoker with SLAP labral tear (regardless of age, more significant with increasing age)

○ SLAP tear in diabetic or patient with loss of motion or predisposition to stiff shoulder ○ LHB hypertrophy/tearing/subluxation in association with RCR **OR** ○ Diagnosis of chronic LHB groove pain from tenosynovitis* **AND** • Failure of at least 12 weeks of non-operative treatment to include **TWO** of the following: ▪ Minimum of 4 weeks of oral or topical NSAIDs (if not medically contraindicated) ▪ Rest or activity modification ▪ Bicipital groove or IA joint corticosteroid injection ▪ Physical therapy or a properly instructed home exercise program **NOTE**: The following is not managed by Magellan: • US-guided percutaneous debridement or tenotomy (e.g., Tenex, TenJet)	○ Failed SLAP repair ○ SLAP tear in diabetic or individual with loss of motion or predisposition to stiff shoulder ○ LHB hypertrophy/tearing/subluxation in association with RCR **OR** ○ Diagnosis of chronic LHB groove pain from tenosynovitis* **AND** • Failure of at least 12 weeks of non-operative treatment to include **TWO** of the following: ▪ Minimum of 4 weeks of oral or topical NSAIDs (if not medically contraindicated) ▪ Rest or activity modification ▪ Bicipital groove corticosteroid injection ▪ Physical therapy or a properly instructed home exercise program **NOTE**: The following is not managed by Magellan: • US-guided percutaneous debridement or tenotomy (e.g., Tenex, TenJet) Loose Body Removal Loose body removal may be medically necessary when the following criteria are met: • Documentation of pain, mechanical symptoms (catching or locking), stiffness, loss of motion, feelings of instability or loss of function

	• X-ray, CT, or MRI documentation of a loose body NOTE: “patient” was changed to “individual” throughout the guideline – not all instances were copied above.

SHOULDER ARTHROPLASTY	
Previous (red indicates deleted text)	New (blue indicates new text)
Policy Statement. **General Requirements** Elective surgery of the shoulder may be considered if the following general criteria are met: • There is clinical correlation of patient's subjective complaints with objective exam findings and/or imaging (when applicable) • Patient has limited function (age-appropriate activities of daily living (ADLs), occupational, athletic) • Patient is medically stable with no uncontrolled comorbidities (such as diabetes) • Patient does not have an active local or systemic infection • Patient does not have active, untreated drug dependency (including but not limited to narcotics, opioids, muscle relaxants) unless engaged in treatment • Patient has good oral hygiene and does not have major dental work scheduled or anticipated (ideally within one year of joint replacement), due to increased post-surgical infection risk **…..** **INDICATIONS** **TOTAL SHOULDER ARTHROPLASTY (TSA)** Total Shoulder Arthroplasty may be necessary when **ALL** of the following criteria are met[6-8]:	**Policy Statement** **General Requirements** Elective surgery of the shoulder may be considered if the following general criteria are met: • There is clinical correlation of individual's subjective complaints with objective exam findings and/or imaging (when applicable) • Individual has limited function (age-appropriate activities of daily living (ADLs), occupational, athletic) • Individual does not have an active local or systemic infection • Individual does not have active, untreated drug dependency (including but not limited to narcotics, opioids, muscle relaxants) unless engaged in treatment • Individual has good oral hygiene and does not have major dental work scheduled or anticipated (ideally within one year of joint replacement), due to increased post-surgical infection risk Recommendations for elective total shoulder or reverse shoulder arthroplasty should only be considered after the individual has been optimized for surgery and the individual's overall medical condition demonstrates no uncontrolled co-morbidities.[1-5] ….. **INDICATIONS** **TOTAL SHOULDER ARTHROPLASTY (TSA)** Total Shoulder Arthroplasty may be necessary when **ALL** of the following criteria are met[6-8]:

• Evidence of painful osteoarthritis or inflammatory, non-infectious arthritis (e.g., rheumatoid) with functional limitations (such as activities of daily living or employment or simple recreation)
• Complete or near-complete loss of joint space on axillary or AP x-rays (internal rotation and/or external rotation)
• **NOTE**: MRI should not be the primary imaging study to determine the extent of disease
• Failure of **at least 12** weeks of non-operative treatment that includes **at least ONE** of the following:
  ○ Physical therapy or properly instructed home exercise program
  ○ Rest or activity modification
  ○ Application of heat or ice
  ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics
  ○ Corticosteroid injections
• Functional and intact rotator cuff and deltoid (adequate abduction strength); confirmed by physical examination, and/or MRI or CT
• No injection into the joint within 12 weeks of surgery[9]
 	
Contraindications
• Neurological disease resulting in chronic pain syndrome (CRPS or its variants), Charcot arthropathy, or loss of deltoid or rotator cuff function
	• Evidence of painful osteoarthritis or inflammatory, non-infectious arthritis (e.g., rheumatoid) with functional limitations (such as activities of daily living or employment or simple recreation)
	• Complete or near-complete loss of joint space on axillary or AP x-rays (internal rotation and/or external rotation)
	• **NOTE**: MRI should not be the primary imaging study to determine the extent of disease
	• Failure of **at least 12** weeks of non-operative treatment that includes **at least ONE** of the following:
	  ○ Physical therapy or properly instructed home exercise program
	  ○ Rest or activity modification
	  ○ Application of heat or ice
	  ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics
	  ○ Corticosteroid injections
	• Functional and intact rotator cuff and deltoid (adequate abduction strength); confirmed by physical examination, MRI, or CT scan
	• No cortisone injection into the joint within 12 weeks of surgery[9]
	• No prior arthroscopic surgery of the shoulder within 12 weeks of surgery
	
	Contraindications
	• Neurological disease resulting in chronic regional pain syndrome (CRPS or its variants), Charcot arthropathy, or loss of deltoid or rotator cuff function

• Active infection or any infection within 3 months of surgery:
  ○ History of prior shoulder joint infection without proof that indolent infection has been eliminated (patient has been off antibiotics for a minimum of 6 weeks). Evidence of resolved infection should include laboratory work (serologies, including CBC with differential, ESR (erythrocyte sedimentation rate), CRP (C-reactive protein), with or without blood cultures, soft tissue biopsy cultures, or synovial fluid aspiration (cultures, gram stain, cell count, differential, crystals). Cultures should be for aerobic and anaerobic bacteria (AFB, fungal), with special attention to the possibility of *Cutibacterium acnes* (*C. acnes*) formerly *Proprionobacterium acnes* (*P. acnes*).[12,13]
• Poor dental hygiene (e.g., tooth extraction should be performed prior to arthroplasty). Major dental work within 2 years after a joint replacement MAY lead to seeding of the implant and possible revision surgery. If possible, all dental work must be completed prior to shoulder arthroplasty as these procedures increase risk for infection.
• Any injection into the joint within 12 weeks of surgery[9]
 	
HEMIARTHROPLASTY
Hemiarthroplasty may be necessary when **ALL of the** following criteria are met:
	• Active infection or any infection within 12 weeks of surgery:
	  ○ History of prior shoulder joint infection without proof that indolent infection has been eliminated (individual has been off antibiotics for a minimum of 6 weeks). Evidence of resolved infection should include laboratory work (serologies, including CBC with differential, ESR (erythrocyte sedimentation rate), CRP (C-reactive protein), with or without blood cultures, soft tissue biopsy cultures, or synovial fluid aspiration (cultures, gram stain, cell count, differential, crystals). Cultures should be for aerobic and anaerobic bacteria (AFB, fungal), with special attention to the possibility of *Cutibacterium acnes* (*C. acnes*) formerly *Proprionobacterium acnes* (*P. acnes*).[12,13]
	• Poor dental hygiene (e.g., tooth extraction should be performed prior to arthroplasty). Major dental work within 2 years after a joint replacement MAY lead to seeding of the implant and possible revision surgery. If possible, all dental work must be completed prior to shoulder arthroplasty as these procedures increase risk for infection.
	• Any cortisone injection into the joint within 12 weeks of surgery[9]
	• Arthroscopic surgery of the shoulder within 12 weeks of surgery
	
	HEMIARTHROPLASTY
	Hemiarthroplasty may be necessary when **the** following criteria are met:

• Patient meets all of the criteria for a Total Shoulder Arthroplasty, as detailed above OR patient with vascular necrosis or osteonecrosis of the humeral head without advanced glenoid disease • Acute 3 or 4-part fracture of the proximal humerus • No injection into the joint within 12 weeks of surgery[9,15]	• Acute 3 or 4-part fracture of the proximal humerus14 OR • Individual meets all of the criteria for a Total Shoulder Arthroplasty, as detailed above, or has a vascular necrosis or osteonecrosis of the humeral head without advanced glenoid disease • No cortisone injection into the joint within 12 weeks of surgery[9,15] • No prior arthroscopic surgery of the shoulder within 12 weeks of surgery10,11
Contraindications • Any injection into the joint within 12 weeks of surgery[9] • Neurologic disease resulting in CRPS or Charcot shoulder • Active infection within 3 months of surgery	**Contraindications** • Any cortisone injection into the joint within 12 weeks of surgery[9] • Arthroscopic surgery of the shoulder within 12 weeks of surgery • Neurologic disease resulting in CRPS or Charcot shoulder • Active infection within 12 weeks of surgery
….. **Arthritis** • **RTSA** may be indicated for the **treatment of arthritis** when **ALL** of the following criteria are met[15]: • Evidence of painful osteoarthritis or inflammatory, non-infectious arthritis (e.g., rheumatoid) with functional limitations (such as activities of daily living or employment or simple recreation) • Complete or near-complete loss of joint space on axillary or AP x-rays (internal rotation and/or external rotation)	….. **Arthritis** • **RTSA** may be indicated for the **treatment of arthritis** when **ALL** of the following criteria are met[15]: • Evidence of painful osteoarthritis or inflammatory, non-infectious arthritis (e.g., rheumatoid) with functional limitations (such as activities of daily living or employment or simple recreation) • Complete or near-complete loss of joint space on axillary or AP x-rays (internal rotation and/or external rotation)

OR radiographic evidence of advanced glenoid bone loss or excessive retroversion[16] • **NOTE**: MRI should not be the primary imaging study to determine the extent of disease • Non-repairable massive (>2 tendons) rotator cuff tear, substantial partial, OR focal full thickness rotator cuff tear with significant rotator cuff dysfunction (weakness, impingement signs on exam) AND intact deltoid • Failure of **at least 12** weeks of non-operative treatment that includes **at least ONE** of the following: ○ Physical therapy or properly instructed home exercise program ○ Rest or activity modification ○ Application of heat or ice ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics ○ Corticosteroid injections • Age > 60; requests for RTSA in patients < 60 will be reviewed on a case-by-case basis* • No injection into the joint within 12 weeks of surgery[9]	OR radiographic evidence of advanced glenoid bone loss or excessive retroversion[16] • **NOTE**: MRI should not be the primary imaging study to determine the extent of disease • Non-repairable massive tears involving at least two tendons, substantial partial, OR focal full thickness rotator cuff tear with significant rotator cuff dysfunction (weakness, impingement signs on exam) AND intact deltoid • Requests for reverse TSA for advanced glenohumeral arthritis with an intact rotator cuff will be reviewed on a case-by-case basis • Failure of **at least 12** weeks of non-operative treatment that includes **at least ONE** of the following: ○ Physical therapy or properly instructed home exercise program ○ Rest or activity modification ○ Application of heat or ice ○ Pharmacologic treatment: oral/topical NSAIDS, acetaminophen, analgesics ○ Corticosteroid injections • Age > 60; requests for RTSA in individuals < 60 will be reviewed on a case-by-case basis* • No cortisone injection into the joint within 12 weeks of surgery[9] • No prior arthroscopic surgery of the shoulder within 12 weeks of surgery10,11

***NOTE**: RTSA has been found to be a reliable operation in younger patients with improvement in pain, range of motion and strength, without a large number of early failures.[21-24] **Contraindications** • Any injection into the joint within 12 weeks of surgery[9] • Active infection within 3 months of surgery • Neurologic disease resulting in CRPS or Charcot shoulder **…..** **Rotator Cuff Tears** **RTSA** may be indicated for the **treatment of irreparable rotator cuff tears in the absence of arthritis** when **ALL** of the following criteria are met: • Non-repairable massive rotator cuff tear AND intact deltoid AND inability to actively elevate the arm above the level of the shoulder (90 degrees) (i.e., pseudoparalysis); **OR** • history of previous failed rotator cuff repair with severe pain and functional disability[25,26] • Failure of **at least 12** weeks of attempted physical therapy or properly instructed home exercise program unless there is worsening of symptoms • Age > 60; requests for RTSA in patients < 60 will be reviewed on a case-by-case basis	***NOTE**: RTSA has been found to be a reliable operation in younger individuals with improvement in pain, range of motion and strength, without a large number of early failures.[21-24] **Contraindications** • Any cortisone injection into the joint within 12 weeks of surgery[9] • Active infection within 12 weeks of surgery • Neurologic disease resulting in CRPS or Charcot shoulder • Arthroscopic surgery of the shoulder within 12 weeks of surgery ….. **Rotator Cuff Tears** **RTSA** may be indicated for the **treatment of irreparable rotator cuff tears in the absence of arthritis** when **ALL** of the following criteria are met: • Non-repairable massive rotator cuff tear AND intact deltoid AND inability to actively elevate the arm above the level of the shoulder (90 degrees) (i.e., pseudoparalysis); **OR** • history of previous failed rotator cuff repair with severe pain and functional disability[25,26] • Failure of **at least 12** weeks of attempted physical therapy or properly instructed home exercise program unless there is worsening of symptoms • Age > 60; requests for RTSA in individuals < 60 will be reviewed on a case-by-case basis • No arthroscopic surgery of the shoulder within 12 weeks of surgery

	• No cortisone injection into the joint within 12 weeks of surgery Contraindications • Any cortisone injection into the joint within 12 weeks of surgery • Active infection within 12-weeks of surgery • Neurologic disease resulting in CRPS or Charcot shoulder • Arthroscopic surgery of the shoulder within 12 weeks of surgery
….. Conversion of a **Hemiarthroplasty to a Reverse Shoulder Arthroplasty** may be necessary when **ALL** of the following criteria are met: • Evidence of a prior hemiarthroplasty • Persistent pain and functional loss • Negative infection evaluation (including CRP, ESR, CBC, with or without negative aspiration)[27-30] **OR** documentation of mechanical failure, or component failure/malposition • Intact deltoid and intact axillary nerve • Age > 65; requests for patients < 60 will be reviewed on a case-by-case basis • Evidence of pseudoparalysis (inability to elevate arm) OR severe pain with elevation	….. Conversion of a **Hemiarthroplasty to a Reverse Shoulder Arthroplasty** may be necessary when **ALL** of the following criteria are met: • Evidence of a prior hemiarthroplasty • Persistent pain and functional loss • Negative infection evaluation (including CRP, ESR, CBC, with or without negative aspiration)[27-30] **OR** documentation of mechanical failure, or component failure/malposition • Intact deltoid and intact axillary nerve • Age > 60; requests for individuals < 60 will be reviewed on a case-by-case basis • Evidence of pseudoparalysis (inability to elevate arm) OR severe pain with elevation

Revision of a **Total Shoulder Arthroplasty to a Reverse Shoulder Arthroplasty** may be necessary when **ALL** of the following criteria are met: • Evidence of prior total shoulder arthroplasty • Persistent pain and functional loss • Negative infection evaluation (including CRP, ESR, CBC, with or without negative aspiration)[27-30] **OR** documentation of mechanical failure, or component failure/malposition • Intact deltoid function • Age > 65; requests in patients < 65 will be reviewed on a case-by-case basis • Evidence of pseudoparalysis (inability to elevate arm) OR severe pain with elevation	Revision of a **Total Shoulder Arthroplasty to a Reverse Shoulder Arthroplasty** may be necessary when **ALL** of the following criteria are met: • Evidence of prior total shoulder arthroplasty • Persistent pain and functional loss • Negative infection evaluation (including CRP, ESR, CBC, with or without negative aspiration)[27-30] **OR** documentation of mechanical failure, or component failure/malposition • Intact deltoid function • Age > 60; requests in individuals < 60 will be reviewed on a case-by-case basis • Evidence of pseudoparalysis (inability to elevate arm) OR severe pain with elevation