

The Weill Cornell Shoulder Pain Appropriate Use Criteria (AUC) addresses nineteen clinical conditions common to Shoulder Pain, associated with; injuries, acute-chronic inflammation of the shoulder joint, tendons, surrounding ligaments, peri-articular structure or injury to the rotator cuff and subacromial bursa.

The AUC makes recommendations to optimize diagnostic effectiveness.

Common Clinical Conditions – Shoulder Pain	
0	Not Shoulder Pain
1	Adhesive Capsulitis Known or Suspected
2	Arthroplasty Loosening Known or Suspected - Status Post
3	Avascular Necrosis Known or Suspected
4	Bicipital Tendon Injury Known or Suspected
5	Brachial Plexopathy Known or Suspected
6	Bursitis Known or Suspected
7	Cancer Known or Suspected
8	Cervical Radiculopathy, No Rotator Cuff Injury
9	Glenoid Labral Tear Known or Suspected
10	Heterotopic Bone Known or Suspected
11	Impingement Known or Suspected
12	Infection Known or Suspected
13	Inflammatory Arthritis Known or Suspected
14	Mass Known or Suspected
15	Osteoarthritis Known or Suspected, No Rotator Cuff Injury
16	Post-Trauma Pain, Fracture Known or Suspected
17	Pre-Operative Planning, Known Fracture
18	Rotator Cuff Injury Known or Suspected
19	Shoulder Pain without Trauma

The Shoulder Pain AUC is activated when a user orders one of the following fourteen Imaging Procedures.

Imaging Procedures	
1	XR Shoulder
2	US Shoulder
3	CT Arthrogram Shoulder
3	CT Shoulder with Contrast
4	CT Shoulder without Contrast
5	CT Shoulder with and without Contrast
6	MR Shoulder with Contrast
7	MR Shoulder with Contrast
8	MR Shoulder without Contrast
9	MR Shoulder with and without Contrast
10	MR Arthrogram Shoulder
11	MR Cervical Spine without Contrast
12	CT Cervical Spine without Contrast
13	NM Bone Scan
14	MR Brachial Plexus without Contrast

The Shoulder Pain AUC recommends one of the following fourteen Imaging Procedures based on clinical conditions.

Recommended Imaging Procedures	
1	XR Shoulder
2	US Shoulder
3	CT Arthrogram Shoulder
3	CT Shoulder with Contrast
4	CT Shoulder without Contrast
5	CT Shoulder with and without Contrast
6	MR Shoulder with Contrast
7	MR Shoulder with Contrast
8	MR Shoulder without Contrast
9	MR Shoulder with and without Contrast
10	MR Arthrogram Shoulder
11	MR Cervical Spine without Contrast
12	CT Cervical Spine without Contrast
13	NM Bone Scan
14	MR Brachial Plexus without Contrast

## Logic Tables

The following Clinical Condition Logic Tables provide the Shoulder Pain AUC logic for each clinical condition.

The logic includes priors, contraindications, metal reduction and advanced US techniques where applicable.

## Key

Value	Score
Blank	No Score Assigned
0	AUC Not Applicable – Allows User to Proceed with Original Order
1	Inappropriate
2	Contact Radiology
3	Appropriate
4	Appropriate Preferred

**Condition 0 – Not Shoulder Pain AUC Logic Activated, AUC Not Applicable**

Condition	XR	US	CT Arthrogram	CT w	CT wo	CT wwo	MR w	MR wo	MR wwo	MR Arthrogram	MR C-Spine wo	CT C-Spine wo	NM bone	MR Br Plexus wo	Reference
Not shoulder pain	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

**Condition 1 - Adhesive Capsulitis Known or Suspected**

Condition	Contraindications	XR	US	CT Arthrogram	CT w	CT wo	CT wwo	MR w	MR wo	MR wwo	MR Arthrogram	MR C-Spine wo	CT C-Spine wo	NM bone	MR Br Plexus wo	Reference
Adhesive Capsulitis		1	1	1	1	1	1	1	4	1	1	1	1	1	1	
Adhesive Capsulitis	MR	2	2	2	2	2	2	2	2	2	2	2	2	2	2	

**Condition 2 - Arthroplasty Loosening Known or Suspected - Status Post**

Condition	Priors	Contraindications	Metal Reduction Techniques?	XR	US	CT Arthrogram	CT w	CT wo	CT wwo	MR w	MR wo	MR wwo	MR Arthrogram	MR C-Spine wo	CT C-Spine wo	NM bone	MR Br Plexus wo	Reference
Arthroplasty, Loosening Known or Suspected - S/P	No XR			4	1	1	1	1	1	1	1	1	1	1	1	1	1	
Arthroplasty, Loosening Known or Suspected - S/P	XR		Yes	1	1	1	1	4	1	1	4	1	1	1	1	1	1	
Arthroplasty, Loosening Known or Suspected - S/P	XR	MR	Yes	1	1	1	1	4	1	1	1	1	1	1	1	1	1	

**Condition 3 – Avascular Necrosis Known or Suspected**

Condition	Priors	Contraindications	XR	US	CT Arthrogram	CT w	CT wo	CT wwo	MR w	MR wo	MR wwo	MR Arthrogram	MR C-Spine wo	CT C-Spine wo	NM bone	MR Br Plexus wo	Reference
Avascular Necrosis Known or Suspected	No XR		4	1	1	1	1	1	1	1	1	1	1	1	1	1	
Avascular Necrosis Known or Suspected	XR		1	1	1	1	1	1	1	4	1	1	1	1	1	1	
Avascular Necrosis Known or Suspected	XR	MR	1	1	1	1	1	1	1	1	1	1	1	1	4	1	

**Condition 4 – Bicipital Tendon Injury Known or Suspected**

Condition	US Expertise Available?	Contraindications	XR	US	CT Arthrogram	CT w	CT wo	CT wwo	MR w	MR wo	MR wwo	MR Arthrogram	MR C-Spine wo	CT C-Spine wo	NM bone	MR Br Plexus wo	Reference
Bicipital Tendon Known or Suspected	Yes		1	4	3	1	1	1	1	4	1	1	1	1	1	1	
Bicipital Tendon Known or Suspected	Yes	MR	1	4	3	1	1	1	1	1	1	1	1	1	1	1	
Bicipital Tendon Known or Suspected	No		1	1	3	1	1	1	1	4	1	1	1	1	1	1	
Bicipital Tendon Known or Suspected	No	MR	1	1	4	1	1	1	1	1	1	1	1	1	1	1	

**Condition 5 – Brachial Plexopathy Known or Suspected**

Condition	Contraindications	XR	US	CT Arthrogram	CT w	CT wo	CT wwo	MR w	MR wo	MR wwo	MR Arthrogram	MR C-Spine wo	CT C-Spine wo	NM bone	MR Br Plexus wo	Reference
Brachial Plexopathy Known or Suspected		1	1	1	1	1	1	1	1	1	1	1	1	1	4	
Brachial Plexopathy Known or Suspected	MR	2	2	2	2	2	2	2	2	2	2	2	2	2	2	

**Condition 6 – Bursitis Known or Suspected**

Condition	US Expertise Available?	Contraindications	XR	US	CT Arthrogram	CT w	CT wo	CT wwo	MR w	MR wo	MR wwo	MR Arthrogram	MR C-Spine wo	CT C-Spine wo	NM bone	MR Br Plexus wo	Reference
Bursitis Known or Suspected	Yes		1	4	3	1	1	1	1	4	1	1	1	1	1	1	
Bursitis Known or Suspected	Yes	MR	1	4	3	1	1	1	1	1	1	1	1	1	1	1	
Bursitis Known or Suspected	No		1	1	3	1	1	1	1	4	1	1	1	1	1	1	
Bursitis Known or Suspected	No	MR	1	1	4	1	1	1	1	1	1	1	1	1	1	1	

**Condition 7 – Cancer Known or Suspected**

Condition	Priors	Contraindications	XR	US	CT Arthrogram	CT w	CT wo	CT wwo	MR w	MR wo	MR wwo	MR Arthrogram	MR C-Spine wo	CT C-Spine wo	NM bone	MR Br Plexus wo	Reference
Cancer Known or Suspected	No XR		4	1	1	1	1	1	1	1	1	1	1	1	1	1	
Cancer Known or Suspected	XR		1	1	1	1	3	1	1	3	4	1	1	1	1	1	
Cancer Known or Suspected	XR	GAD	1	1	1	3	3	1	1	4	1	1	1	1	1	1	
Cancer Known or Suspected	XR	MR	1	1	1	3	4	1	1	1	1	1	1	1	1	1	
Cancer Known or Suspected	XR	GAD IOD	1	1	1	1	3	1	1	4	1	1	1	1	1	1	
Cancer Known or Suspected	XR	MR IOD	1	1	1	1	3	1	1	1	1	1	1	1	1	1	

**Condition 8 – Cervical Radiculopathy, No Rotator Cuff Injury**

Condition	Contraindications	XR	US	CT Arthrogram	CT w	CT wo	CT wwo	MR w	MR wo	MR wwo	MR Arthrogram	MR C-Spine wo	CT C-Spine wo	NM bone	MR Br Plexus wo	Reference
Cervical Radiculopathy No Rotator Cuff Injury		1	1	1	1	1	1	1	1	1	1	4	1	1	1	
Cervical Radiculopathy No Rotator Cuff Injury	MR	1	1	1	1	1	1	1	1	1	1	1	4	1	1	

**Condition 9 – Glenoid Labral Tear Known or Suspected**

Condition	Contraindications	XR	US	CT Arthrogram	CT w	CT wo	CT wwo	MR w	MR wo	MR wwo	MR Arthrogram	MR C-Spine wo	CT C-Spine wo	NM bone	MR Br Plexus wo	Reference
Glenoid Labral Tear		1	1	3	1	1	1	1	4	1	4	1	1	1	1	
Glenoid Labral Tear	GAD	1	1	3	1	1	1	1	4	1	1	1	1	1	1	
Glenoid Labral Tear	MR	1	1	4	1	1	1	1	1	1	1	1	1	1	1	

**Condition 10 – Heterotopic Bone Known or Suspected**

Condition	Contraindications	XR	US	CT Arthrogram	CT w	CT wo	CT wwo	MR w	MR wo	MR wwo	MR Arthrogram	MR C-Spine wo	CT C-Spine wo	NM bone	MR Br Plexus wo	Reference
Heterotopic Bone		1	1	1	1	4	1	1	4	1	1	1	1	1	1	
Heterotopic Bone	MR	1	1	1	1	4	1	1	1	1	1	1	1	1	1	

**Condition 11 – Impingement Known or Suspected**

Condition	US Expertise Available?	Contraindications	XR	US	CT Arthrogram	CT w	CT wo	CT wwo	MR w	MR wo	MR wwo	MR Arthrogram	MR C-Spine wo	CT C-Spine wo	NM bone	MR Br Plexus wo	Reference
Impingement Known or Suspected	Yes		1	4	3	1	1	1	1	4	1	1	1	1	1	1	
Impingement Known or Suspected	Yes	MR	1	4	3	1	1	1	1	1	1	1	1	1	1	1	
Impingement Known or Suspected	No		1	1	3	1	1	1	1	4	1	1	1	1	1	1	
Impingement Known or Suspected	No	MR	1	1	4	1	1	1	1	1	1	1	1	1	1	1	

**Condition 12 – Infection Known or Suspected**

Condition	Priors	Contraindications	XR	US	CT Arthrogram	CT w	CT wo	CT wwo	MR w	MR wo	MR wwo	MR Arthrogram	MR C-Spine wo	CT C-Spine wo	NM bone	MR Br Plexus wo	Reference
Infection Known or Suspected	No XR		4	1	1	1	1	1	1	1	1	1	1	1	1	1	
Infection Known or Suspected	XR		1	1	1	1	3	1	1	3	4	1	1	1	1	1	
Infection Known or Suspected	XR	GAD	1	1	1	3	3	1	1	4	1	1	1	1	1	1	
Infection Known or Suspected	XR	MR	1	1	1	3	4	1	1	1	1	1	1	1	1	1	
Infection Known or Suspected	XR	GAD IOD	1	1	1	1	3	1	1	4	1	1	1	1	1	1	
Infection Known or Suspected	XR	MR IOD	1	1	1	1	3	1	1	1	1	1	1	1	1	1	

**Condition 13 – Inflammatory Arthritis Known or Suspected**

Condition	Contraindications	XR	US	CT Arthrogram	CT w	CT wo	CT wwo	MR w	MR wo	MR wwo	MR Arthrogram	MR C-Spine wo	CT C-Spine wo	NM bone	MR Br Plexus wo	Reference
Inflammatory Arthritis		1	1	1	1	1	1	1	4	3	1	1	1	1	1	
Inflammatory Arthritis	GAD	1	1	1	1	1	1	1	4	1	1	1	1	1	1	
Inflammatory Arthritis	MR	2	2	2	2	2	2	2	2	2	2	2	2	2	2	

**Condition 14 – Mass Known or Suspected**

Condition	Priors	Contraindications	XR	US	CT Arthrogram	CT w	CT wo	CT wwo	MR w	MR wo	MR wwo	MR Arthrogram	MR C-Spine wo	CT C-Spine wo	NM bone	MR Br Plexus wo	Reference
Mass Known or Suspected	No XR		4	1	1	1	1	1	1	1	1	1	1	1	1	1	
Mass Known or Suspected	XR		1	1	1	1	3	1	1	3	4	1	1	1	1	1	
Mass Known or Suspected	XR	GAD	1	1	1	3	3	1	1	4	1	1	1	1	1	1	
Mass Known or Suspected	XR	MR	1	1	1	3	4	1	1	1	1	1	1	1	1	1	
Mass Known or Suspected	XR	GAD IOD	1	1	1	1	3	1	1	4	1	1	1	1	1	1	
Mass Known or Suspected	XR	MR IOD	1	1	1	1	3	1	1	1	1	1	1	1	1	1	

**Condition 15 - Osteoarthritis Known or Suspected, No Rotator Cuff Injury**

Condition	Priors	XR	US	CT Arthrogram	CT w	CT wo	CT wwo	MR w	MR wo	MR wwo	MR Arthrogram	MR C-Spine wo	CT C-Spine wo	NM bone	MR Br Plexus wo	Reference
Osteoarthritis Known or Suspected No Rotator Cuff Injury	No XR	4	1	1	1	1	1	1	1	1	1	1	1	1	1	
Osteoarthritis Known or Suspected No Rotator Cuff Injury	XR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	

**Condition 16 - Post-Trauma Pain, Fracture Known or Suspected**

Condition	Priors	Contraindications	XR	US	CT Arthrogram	CT w	CT wo	CT wwo	MR w	MR wo	MR wwo	MR Arthrogram	MR C-Spine wo	CT C-Spine wo	NM bone	MR Br Plexus wo	Reference
Post-Trauma Pain Known or Suspected Fracture	No XR		4	1	1	1	1	1	1	1	1	1	1	1	1	1	
Post-Trauma Pain Known or Suspected Fracture	XR		1	1	1	1	3	1	1	4	1	1	1	1	1	1	
Post-Trauma Pain Known or Suspected Fracture	XR	MR	1	1	1	1	4	1	1	1	1	1	1	1	1	1	

**Condition 17 – Pre-Operative Planning, Known Fracture**

Condition	Contraindications	XR	US	CT Arthrogram	CT w	CT wo	CT wwo	MR w	MR wo	MR wwo	MR Arthrogram	MR C-Spine wo	CT C-Spine wo	NM bone	MR Br Plexus wo	Reference
Pre-Op Planning Known Fracture		1	1	1	1	4	1	1	4	1	1	1	1	1	1	
Pre-Op Planning Known Fracture	MR	1	1	1	1	4	1	1	1	1	1	1	1	1	1	

**Condition 18 – Rotator Cuff Injury Known or Suspected**

Condition	US Expertise Available?	Contraindications	XR	US	CT Arthrogram	CT w	CT wo	CT wwo	MR w	MR wo	MR wwo	MR Arthrogram	MR C-Spine wo	CT C-Spine wo	NM bone	MR Br Plexus wo	Reference
Rotator Cuff Injury	Yes		1	4	3	1	1	1	1	4	1	1	1	1	1	1	
Rotator Cuff Injury	Yes	MR	1	4	3	1	1	1	1	1	1	1	1	1	1	1	
Rotator Cuff Injury	No		1	1	3	1	1	1	1	4	1	1	1	1	1	1	
Rotator Cuff Injury	No	MR	1	1	4	1	1	1	1	1	1	1	1	1	1	1	

**Condition 19 – Shoulder Pain without Trauma**

Condition	Priors	Contraindications	XR	US	CT Arthrogram	CT w	CT wo	CT wwo	MR w	MR wo	MR wwo	MR Arthrogram	MR C-Spine wo	CT C-Spine wo	NM bone	MR Br Plexus wo	Reference
Shoulder Pain without Trauma	No XR		4	1	1	1	1	1	1	1	1	1	1	1	1	1	
Shoulder Pain without Trauma	XR		1	1	1	1	1	1	1	4	1	1	1	1	1	1	
Shoulder Pain without Trauma	XR	MR	2	2	2	2	2	2	2	2	2	2	2	2	2	2	

**Sources**

The Shoulder Pain AUC has been developed by Weill Cornell Medicine utilizing the following published sources and Local Best Practice (LBP).

No.	Source
1	
2	
LBP	Weill Cornell Medicine Local Best Practice