

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 or peri-articular structure. The AUC makes recommendations to optimize diagnostic effectiveness.

Common Clinical Conditions – Shoulder Pain	
0	Not Shoulder Pain
1	Adhesive Capsulitis Suspected
2	Arthroplasty Loosening Suspected - Status Post
3	Avascular Necrosis Suspected
4	Bicipital Tendon Injury Suspected
5	Brachial Plexopathy Suspected
6	Bursitis Suspected
7	Cancer Suspected
8	Cervical Radiculopathy, No Rotator Cuff Injury
9	Glenoid Labral Tear Suspected
10	Heterotopic Bone Suspected
11	Impingement Suspected
12	Infection Suspected
13	Inflammatory Arthritis Suspected
14	Mass Suspected
15	Osteoarthritis Suspected, No Rotator Cuff Injury
16	Post-Trauma Pain, Fracture Suspected
17	Pre-Operative Planning, Known Fracture
18	Rotator Cuff Injury 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
Not shoulder pain	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Condition 1 - Adhesive Capsulitis 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
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 Suspected - Status Post**

Condition	Priors	Metal Reduction Techniques Available?	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
Arthroplasty, Loosening Suspected - S/P	No XR		4	1	1	1	1	1	1	1	1	1	1	1	1	1
Arthroplasty, Loosening Suspected - S/P	XR	Yes	1	1	1	1	4	1	1	4	1	1	1	1	1	1
Arthroplasty, Loosening Suspected - S/P	XR	Yes	1	1	1	1	4	1	1	1	1	1	1	1	1	1

**Condition 3 – Avascular Necrosis 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
Avascular Necrosis Suspected	No XR		4	1	1	1	1	1	1	1	1	1	1	1	1	1
Avascular Necrosis Suspected	XR		1	1	1	1	1	1	1	4	1	1	1	1	1	1
Avascular Necrosis Suspected	XR	MR	1	1	1	1	1	1	1	1	1	1	1	1	4	1

**Condition 4 – Bicipital Tendon Injury 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
Bicipital Tendon Suspected	Yes		1	4	3	1	1	1	1	4	1	1	1	1	1	1
Bicipital Tendon Suspected	Yes	MR	1	4	3	1	1	1	1	1	1	1	1	1	1	1
Bicipital Tendon Suspected	No		1	1	3	1	1	1	1	4	1	1	1	1	1	1
Bicipital Tendon Suspected	No	MR	1	1	4	1	1	1	1	1	1	1	1	1	1	1

**Condition 5 – Brachial Plexopathy 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
Brachial Plexopathy Suspected		1	1	1	1	1	1	1	1	1	1	1	1	1	4
Brachial Plexopathy Suspected	MR	2	2	2	2	2	2	2	2	2	2	2	2	2	2

**Condition 6 – Bursitis 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
Bursitis Suspected	Yes		1	4	3	1	1	1	1	4	1	1	1	1	1	1
Bursitis Suspected	Yes	MR	1	4	3	1	1	1	1	1	1	1	1	1	1	1
Bursitis Suspected	No		1	1	3	1	1	1	1	4	1	1	1	1	1	1
Bursitis Suspected	No	MR	1	1	4	1	1	1	1	1	1	1	1	1	1	1

**Condition 7 – Cancer 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
Cancer Suspected	No XR		4	1	1	1	1	1	1	1	1	1	1	1	1	1
Cancer Suspected	XR		1	1	1	1	3	1	1	3	4	1	1	1	1	1
Cancer Suspected	XR	GAD	1	1	1	3	3	1	1	4	1	1	1	1	1	1
Cancer Suspected	XR	MR	1	1	1	3	4	1	1	1	1	1	1	1	1	1
Cancer Suspected	XR	GAD IOD	1	1	1	1	3	1	1	4	1	1	1	1	1	1
Cancer 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
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 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
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 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
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 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
Impingement Suspected	Yes		1	4	3	1	1	1	1	4	1	1	1	1	1	1
Impingement Suspected	Yes	MR	1	4	3	1	1	1	1	1	1	1	1	1	1	1
Impingement Suspected	No		1	1	3	1	1	1	1	4	1	1	1	1	1	1
Impingement Suspected	No	MR	1	1	4	1	1	1	1	1	1	1	1	1	1	1

**Condition 12 – Infection 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
Infection Suspected	No XR		4	1	1	1	1	1	1	1	1	1	1	1	1	1
Infection Suspected	XR		1	1	1	1	3	1	1	3	4	1	1	1	1	1
Infection Suspected	XR	GAD	1	1	1	3	3	1	1	4	1	1	1	1	1	1
Infection Suspected	XR	MR	1	1	1	3	4	1	1	1	1	1	1	1	1	1
Infection Suspected	XR	GAD IOD	1	1	1	1	3	1	1	4	1	1	1	1	1	1
Infection Suspected	XR	MR IOD	1	1	1	1	3	1	1	1	1	1	1	1	1	1

**Condition 13 – Inflammatory Arthritis 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
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 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
Mass Suspected	No XR		4	1	1	1	1	1	1	1	1	1	1	1	1	1
Mass Suspected	XR		1	1	1	1	3	1	1	3	4	1	1	1	1	1
Mass Suspected	XR	GAD	1	1	1	3	3	1	1	4	1	1	1	1	1	1
Mass Suspected	XR	MR	1	1	1	3	4	1	1	1	1	1	1	1	1	1
Mass Suspected	XR	GAD IOD	1	1	1	1	3	1	1	4	1	1	1	1	1	1
Mass Suspected	XR	MR IOD	1	1	1	1	3	1	1	1	1	1	1	1	1	1

**Condition 15 - Osteoarthritis 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
Osteoarthritis Suspected No Rotator Cuff Injury	No XR	4	1	1	1	1	1	1	1	1	1	1	1	1	1
Osteoarthritis 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 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
Post-Trauma Pain Suspected Fracture	No XR		4	1	1	1	1	1	1	1	1	1	1	1	1	1
Post-Trauma Pain Suspected Fracture	XR		1	1	1	1	3	1	1	4	1	1	1	1	1	1
Post-Trauma Pain 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
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 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
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
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 Hip Pain AUC has been developed by Weill Cornell Medicine utilizing the following published sources and Local Best Practice (LBP).

No.	Source
1	
2	