

Supplement to the Management of Glenohumeral Joint Osteoarthritis Evidence-Based Clinical Practice Guideline

e-Appendix 2

- Quality Evaluation
- Data Summary
- Detailed Data Tables

This supplementary material has been provided by the authors to give readers additional information about their work

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Strength of Recommendations

Strength Of Recommendation	Overall Strength Of Evidence	Description Of Evidence Quality
Strong	Strong	Evidence from two or more “High” quality studies with consistent findings for recommending for or against the intervention. Also requires no reasons to downgrade from the EtD framework
Moderate	Moderate or Strong	Evidence from two or more “Moderate” quality studies with consistent findings, or evidence from a single “High” quality study for recommending for or against the intervention. Also requires no or only minor concerns addressed in the EtD framework.
Limited	Limited, Moderate or Strong	Evidence from one or more “Low” quality studies with consistent findings or evidence from a single “Moderate” quality study recommending for or against the intervention. Also, higher strength evidence can be downgraded to limited due to major concerns addressed in the EtD Framework.
Consensus	No Reliable Evidence	There is no supporting evidence, or higher quality evidence was downgraded due to major concerns addressed in the EtD framework. In the absence of reliable evidence, the guideline work group is making a recommendation based on their clinical opinion.

Quality of Evidence

Randomized

Study	Random Sequence Generation	Allocation Concealment	Blinding	Incomplete Outcome Data	Selective Reporting	Other Bias	Strength
Blaine, T., 2008							High Quality
Di Giacomo, G., 2015							Moderate Quality
Di Giacomo, G., 2017							High Quality
Ding, D. Y., 2015							High Quality
Edwards, T. B., 2007							High Quality
Edwards, T. B., 2010							High Quality
Gartsman, G. M., 2000							High Quality
Gartsman, G. M., 2005							High Quality
Kwon, Y. W., 2013							High Quality
Lapner, P. L., 2012							High Quality
Lapner, P. L., 2013							High Quality
Lo, I. K., 2005							High Quality
Shanahan, E. M., 2004							High Quality
Levine, W., 2019							High Quality

Prognostic

Study	Prognostic Study Design	Representative Population	Reason for Follow Up Loss	Prognostic Factor Measured	Outcome Measurement	Confounders	Appropriate Statistical Analysis	Strength
Bernstein, D. N., 2017	●	●	●	●	●	●	●	High Quality
BjÃfÂ, rnholdt, K. T., 2015	●	●	◐	●	●	○	●	Moderate Quality
Chalmers, P. N., 2014	●	●	●	●	●	●	◐	High Quality
Cho, C. H., 2017	○	●	●	●	●	◐	●	Low Quality
Hartzler, R. U., 2017	○	●	●	●	●	◐	●	Low Quality
Herschel, R., 2017	●	●	●	●	●	◐	●	High Quality
Iriberry, I., 2015	○	●	●	●	●	◐	●	Low Quality
Jiang, J. J., 2016	●	●	●	●	●	●	●	High Quality
Lapner, P. L., 2015	●	●	●	●	●	●	●	High Quality
Leschinger, T., 2017	○	●	●	●	●	◐	●	Low Quality
Li, X., 2013	○	●	●	●	●	◐	●	Low Quality
Mahony, G. T., 2018	●	●	●	●	●	◐	○	Moderate Quality
Mann, T., 2014	●	●	●	●	●	◐	◐	Moderate Quality
Petri, M., 2016	○	●	●	●	●	◐	●	Low Quality
Rispoli, D. M., 2006	○	●	●	●	●	◐	●	Low Quality
Robinson, W. A., 2018	●	●	◐	●	●	○	●	Moderate Quality
Somerson, J. S., 2017	○	●	●	●	●	◐	●	Low Quality
Wells, D. B., 2018	○	●	●	●	●	●	●	Low Quality
Werner, B. C., 2017	●	●	●	●	●	●	●	High Quality

Observational

Study	Participant Recruitment	Treatment Recording	Confounding Variables	Outcome Measurement Bias	Incomplete Outcome Data	Adequate Reporting	Strength
Odquist, M., 2018	●	●	○	●	◐	●	Low Quality
Aibinder, W. R., 2019	●	●	○	●	●	●	Low Quality
Berth, A., 2013	●	●	●	●	●	●	Low Quality
Buckley, T., 2014	●	●	●	●	●	●	Low Quality
C. Glanzmann M, 2017	●	●	●	●	●	●	Low Quality
Clinton, J., 2007	○	●	●	○	●	●	Low Quality
Edwards, T. B., 2003	●	●	●	○	●	●	Low Quality
Fama, G., 2004	●	●	●	●	●	●	Low Quality
Fourman, M., 2019	●	●	●	●	●	●	Low Quality
Garcia, G. H., 2016	●	●	●	●	●	●	Low Quality
Gowd, A. K., 2019	●	●	●	○	●	●	Low Quality
Gulotta, L. V., 2015	●	●	●	○	●	●	Low Quality
Iannotti, J. P., 2003	●	●	●	●	●	●	Low Quality
Kooistra, B. W., 2017	●	●	●	●	●	●	Low Quality
Krukenberg, A., 2018	●	●	○	●	◐	●	Low Quality
Lazarus, M. D., 2002	●	●	◐	◐	●	●	Low Quality
Lebon, J., 2014	●	●	●	○	●	●	Low Quality
Levy, O., 2004	●	●	○	○	●	●	Low Quality
Mulieri, P. J., 2010	●	●	●	●	●	●	Low Quality
Orfaly, R. M., 2003	●	●	○	●	●	○	Low Quality
Rasmussen, J. V., 2018	●	●	●	●	●	●	Low Quality
Rasmussen, J. V., 2019	●	●	●	●	●	●	Low Quality
Razmjou, H., 2014	◐	●	◐	●	●	●	Low Quality
Routman, H. D., 2017	●	●	◐	●	●	●	Low Quality
Sassoon, A., 2013	●	●	●	○	●	●	Low Quality
Schairer, W. W., 2014	●	●	◐	●	●	●	Low Quality
Steen, B. M., 2015	●	●	●	○	●	●	Low Quality
Throckmorton, T. W., 2010	●	●	●	○	●	●	Low Quality
Virk, M. S., 2018	●	●	●	●	●	●	Low Quality
Werthel, J. D., 2018	●	●	●	○	●	●	Low Quality

PICO 3: Postop Physical Therapy Effect on Postop Outcomes

Shoulder Arthroplasty: Postop Formal vs. Home-Based Physical Therapy

Summary of Findings:

	Low Quality
	Mulieri, P. J., 2010
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	
Composite	
ASES - Total: pvalue only	●
SF-36 - Physical Component Score: auth. rep. pvalue only	↓
Function	
ROM: Forward Flexion (auth. rep. pvalue only)	↓
ROM: Abduction pvalue only	↓
SST - Simple Shoulder Test: pvalue only	●
Quality of life	
SF-36 - Mental Component Score: auth. rep. pvalue only	●

Table 1: Postop Formal vs. Home-Based Physical Therapy - Composite

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Mulieri, P. J., 2010	Low Quality	SF-36 - Physical Component Score: auth. rep. pvalue only	45 months	PICO 3: Formal PT (Formal PT with a Physical Therapist)	43	. %	PICO 3: Home-Based PT (Home-Based PT, physician-directed PT)	38	. %	Author Reported	pval 0.0372	Home-Based PT Significant (P-value<.05)
Mulieri, P. J., 2010	Low Quality	ASES - Total: author reported pvalue only	45 months	PICO 3: Formal PT (Formal PT with a Physical Therapist)	43	. %	PICO 3: Home-Based PT (Home-Based PT, physician-directed PT)	38	. %	Author Reported	pval 0.2394	Not Significant (P-value>.05)

Table 2: Postop Formal vs. Home-Based Physical Therapy - Function

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Mulieri, P. J., 2010	Low Quality	ROM: Forward Flexion (auth. rep. pvalue only)	45 months	PICO 3: Formal PT (Formal PT with a Physical Therapist)	43	. %	PICO 3: Home-Based PT (Home-Based PT, physician-directed PT)	38	. %	Author Reported	pval 0.0237	Home-Based PT Significant (P-value<.05)
Mulieri, P. J., 2010	Low Quality	ROM: Abduction (auth. rep. pvalue only)	45 months	PICO 3: Formal PT (Formal PT with a Physical Therapist)	43	. %	PICO 3: Home-Based PT (Home-Based PT, physician-directed PT)	38	. %	Author Reported	pval 0.0298	Home-Based PT Significant (P-value<.05)
Mulieri, P. J., 2010	Low Quality	SST - Simple Shoulder Test: author reported pvalue only	45 months	PICO 3: Formal PT (Formal PT with a Physical Therapist)	43	. %	PICO 3: Home-Based PT (Home-Based PT, physician-directed PT)	38	. %	Author Reported	pval 0.5636	Not Significant (P-value>.05)

Table 3: Postop Formal vs. Home-Based Physical Therapy - Quality of Life

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Mulieri, P. J., 2010	Low Quality	SF-36 - Mental Component Score: auth. rep. pvalue only	45 months	PICO 3: Formal PT (Formal PT with a Physical Therapist)	43	. %	PICO 3: Home-Based PT (Home-Based PT, physician-directed PT)	38	. %	Author Reported	pval 0.5045	Not Significant (P-value>.05)

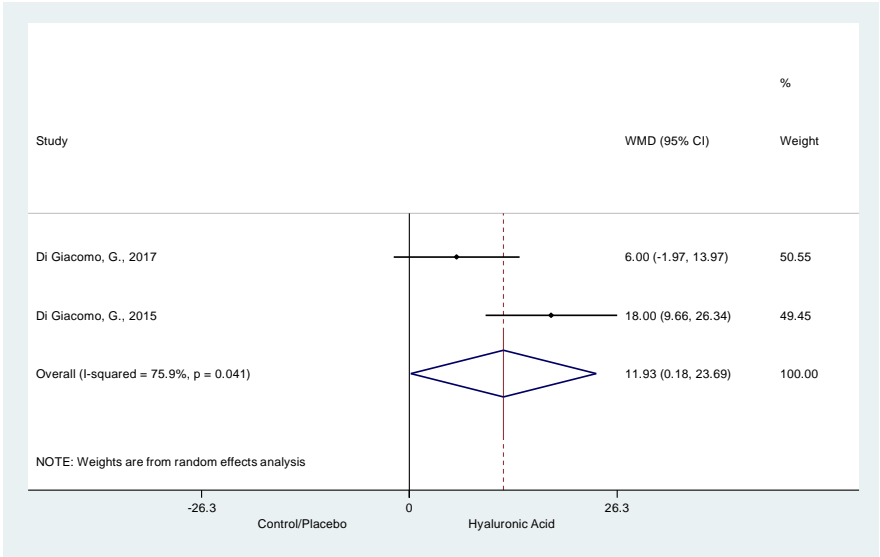
PICO 4: Injectables

Injectables: Hyaluronic Acid vs. Control/Placebo

Summary of Findings:

	High Quality			Moderate Quality
<div>↑ Better Outcomes</div> <div>↓ Worse Outcomes</div> <div>● Not Significant</div>	Di Giacomo, G., 2017	Blaine, T., 2008	Kwon, Y. W., 2013	Di Giacomo, G., 2015
Composite				
Constant - Total				↑
High Response via OMERACT-OARSI Prop D: Outcome Measures in Rheumatoid Clinical Trials - OA Research Society International			●	
Function				
ROM: External Rotation	●			●
ROM: Forward Elevation	●			
ROM: Active Elevation				↑
Pain				
Reduction in Night Pain from Baseline		↑		
Difference in Mean Pain Reduction		↑		
Improvement in VAS: pvalue only			↑	

Meta-Analysis: ROM – Forward Elevation



Meta-Analysis: ROM – External Rotation

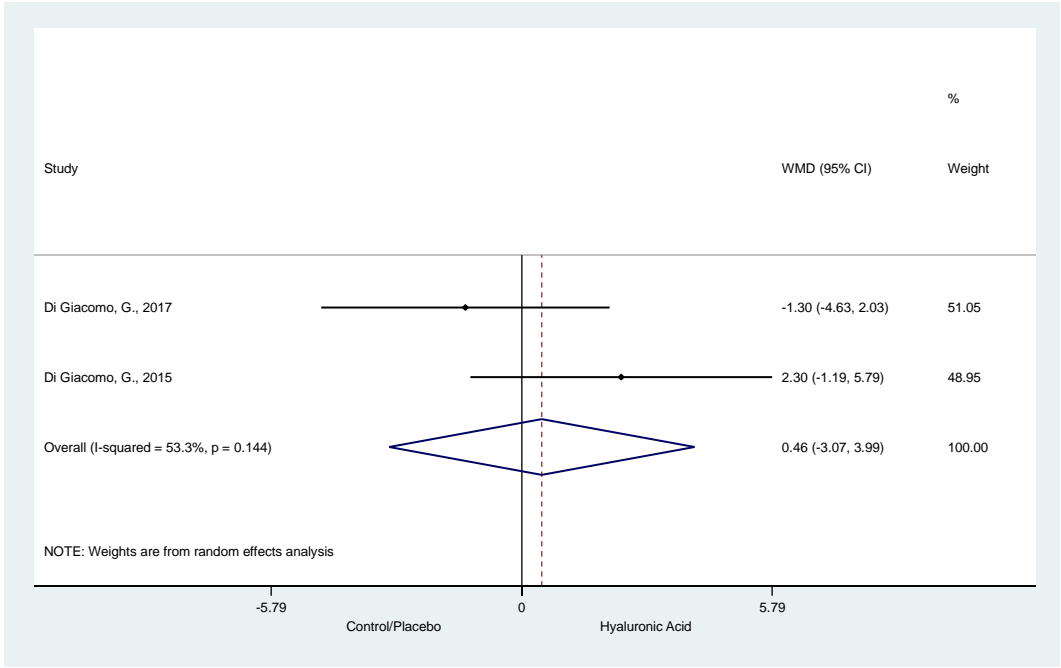


Table 4: Hyaluronic Acid vs. Control/Placebo - Composite

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Kwon, Y. W., 2013	High Quality	High Response via OMERACT-OARSI Prop D: Outcome Measures in Rheumatoid Clinical Trials - OA Research Society International	26 weeks	PICO 4: Hyaluronic Acid (SUPARTZ 1 injection per week for 3 weeks)	133	. %	PICO 4: Placebo / Control (Phosphate Buffered Saline (PBS) 1 per week for 3 weeks)	130	. %	Odds Ratio(Author Reported)	1.62(-1.06,2.50)	Not Significant (P-value>.05)
Di Giacomo, G., 2015	Moderate Quality	Constant - Total	5 months	PICO 4: Hyaluronic Acid (Hyalgan 1 injection 20mg/2ml 15 days for 5 injections + physical therapy program)	31	91.6(6.50)	PICO 4: Placebo / Control (physical therapy program)	30	79(14.50)	MeanDif	12.6(6.93,18.27)	Treatment 1 Significant (P-value<.05)

Table 5: Hyaluronic Acid vs. Control/Placebo - Function

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Di Giacomo, G., 2017	High Quality	ROM: External Rotation	6 months	PICO 4: Hyaluronic Acid (3 IA HA injections + 1 per 15 days ; physiotherapy program) (Hyalubrix, 30 mg/2 mL, molecular weight > 1,500 kDa)	39	25.1(7.10)	PICO 4: Placebo / Control (physiotherapy program)	39	26.4(7.90)	MeanDif	-1.3 (-4.63,2.03)	Not Significant (P-value>.05)
Di Giacomo, G., 2017	High Quality	ROM: Forward Elevation	6 months	PICO 4: Hyaluronic Acid (3 IA HA injections + 1 per 15 days ; physiotherapy program) (Hyalubrix, 30 mg/2 mL, molecular weight > 1,500 kDa)	39	152.8(15.90)	PICO 4: Placebo / Control (physiotherapy program)	39	146.8(19.80)	MeanDif	6 (-1.97,13.97)	Not Significant (P-value>.05)
Di Giacomo, G., 2015	Moderate Quality	ROM: Active Forward Elevation	5 months	PICO 4: Hyaluronic Acid (Hyalgan 1 injection 20mg/2ml 15 days for 5 injections + physical therapy program)	31	168(10.50)	PICO 4: Placebo / Control (physical therapy program)	30	150(20.90)	MeanDif	18 (9.66,26.34)	Treatment 1 Significant (P-value<.05)
Di Giacomo, G., 2015	Moderate Quality	ROM: External Rotation	5 months	PICO 4: Hyaluronic Acid (Hyalgan 1 injection 20mg/2ml 15 days for 5 injections + physical therapy program)	31	30.8(5.80)	PICO 4: Placebo / Control (physical therapy program)	30	28.5(7.90)	MeanDif	2.3 (-1.19,5.79)	Not Significant (P-value>.05)

Table 6: Hyaluronic Acid vs. Control/Placebo - Pain

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Blaine, T., 2008	High Quality	Reduction in Night Pain from Baseline	7 weeks	PICO 4: Hyaluronic Acid (Sodium Hyaluronate: 1 injection per week for 5 weeks) 2-mL injections of sodium hyaluronate at adosage of 10 mg/mL	129	28.55(2.32)	PICO 4: Placebo / Control (Sodium Hyalur5 weeks phosphate buffered saline placebo)	133	17.13(2.25)	MeanDif	11.42(10.87,11.97)	Treatment 1 Significant (P-value<.05)
Blaine, T., 2008	High Quality	Reduction in Night Pain from Baseline	9 weeks	PICO 4: Hyaluronic Acid (Sodium Hyaluronate: 1 injection per week for 5 weeks) 2-mL injections of sodium hyaluronate at adosage of 10 mg/mL	129	28.64(2.41)	PICO 4: Placebo / Control (Sodium Hyalur5 weeks phosphate buffered saline placebo)	133	18.92(2.36)	MeanDif	9.72(9.14,10.30)	Treatment 1 Significant (P-value<.05)
Blaine, T., 2008	High Quality	Reduction in Night Pain from Baseline	17 weeks	PICO 4: Hyaluronic Acid (Sodium Hyaluronate: 1 injection per week for 5 weeks) 2-mL injections of sodium hyaluronate at adosage of 10 mg/mL	129	27.76(2.51)	PICO 4: Placebo / Control (Sodium Hyalur5 weeks phosphate buffered saline placebo)	133	17.8(2.51)	MeanDif	9.96(9.35,10.57)	Treatment 1 Significant (P-value<.05)
Blaine, T., 2008	High Quality	Difference in Mean Pain Reduction	6 months	PICO 4: Hyaluronic Acid (Sodium Hyaluronate: 1 injection per week for 5 weeks) 2-mL injections of sodium hyaluronate at adosage of 10 mg/mL	129	. %	PICO 4: Placebo / Control (Sodium Hyalur5 weeks phosphate buffered saline placebo)	133	. %	MeanDiff(Author Reported)	7.8(...)	HA Significant (P-value<.05)

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Blaine, T., 2008	High Quality	Reduction in Night Pain from Baseline	17 weeks	PICO 4: Hyaluronic Acid 2 (Sodium Hyaluronate: 1 injection per week for 3 weeks + 2 weeks phosphate buffered saline placebo)	136	26.4(2.37)	PICO 4: Placebo / Control (Sodium Hyaluronate: 5 weeks phosphate buffered saline placebo)	133	17.13(2.25)	MeanDif	9.27(8.72,9.82)	Treatment 1 Significant (P-value<.05)
Blaine, T., 2008	High Quality	Difference in Mean Pain Reduction	6 months	PICO 4: Hyaluronic Acid 2 (Sodium Hyaluronate: 1 injection per week for 3 weeks + 2 weeks phosphate buffered saline placebo)	136	. %	PICO 4: Placebo / Control (Sodium Hyaluronate: 5 weeks phosphate buffered saline placebo)	133	. %	MeanDiff(Author Reported)	7.5(...)	HA Significant (P-value<.05)
Blaine, T., 2008	High Quality	Reduction in Night Pain from Baseline	26 weeks	PICO 4: Hyaluronic Acid 2 (Sodium Hyaluronate: 1 injection per week for 3 weeks + 2 weeks phosphate buffered saline placebo)	136	29.05(2.46)	PICO 4: Placebo / Control (Sodium Hyaluronate: 5 weeks phosphate buffered saline placebo)	133	18.92(2.36)	MeanDif	10.13(9.55,10.71)	Treatment 1 Significant (P-value<.05)
Kwon, Y. W., 2013	High Quality	Improvement in VAS: pvalue only	26 weeks	PICO 4: Hyaluronic Acid (SUPARTZ 1 injection per week for 3 weeks)	133	. %	PICO 4: Placebo / Control (Phosphate Buffered Saline (PBS) 1 per week for 3 weeks)	130	. %	Author Reported	pval 0.038	HA Significant (P-value<.05)

PICO 5:

Shoulder Arthroplasty: Nerve Block – CT vs. Landmark Guided Approach

Summary of Findings:

	High Quality
	Shanahan, E. M., 2004
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	
Composite	
SPADI Total: Shoulder Pain and Disability Index	●
Function	
SPADI Disability Subscale: Shoulder Pain and Disability Index	●
Pain	
Pain With Activity / Movement	●
Pain at Rest: VAS	●
Pain at Night: VAS	●
SPADI Pain Subscale: Shoulder Pain and Disability Index	●

Table 7: Non-Surgical Alternative Treatment: Nerve Block - CT vs. Landmark Guided Approach - Composite

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Shanahan, E. M., 2004	High Quality	SPADI Total: Shoulder Pain and Disability Index	1 weeks	PICO 5: CT Guided Nerve Block (CT Guided Nerve Block)	37	55(22.70)	PICO 5: Landmark Approach Nerve Block (Landmark Approach Nerve Block)	40	49.9(19.90)	MeanDif	5.1(-4.47,14.67)	Not Significant (P-value>.05)
Shanahan, E. M., 2004	High Quality	SPADI Total: Shoulder Pain and Disability Index	4 weeks	PICO 5: CT Guided Nerve Block (CT Guided Nerve Block)	37	55.5(21.00)	PICO 5: Landmark Approach Nerve Block (Landmark Approach Nerve Block)	40	46.8(21.60)	MeanDif	8.7(-0.82,18.22)	Not Significant (P-value>.05)
Shanahan, E. M., 2004	High Quality	SPADI Total: Shoulder Pain and Disability Index	12 weeks	PICO 5: CT Guided Nerve Block (CT Guided Nerve Block)	37	60.6(20.90)	PICO 5: Landmark Approach Nerve Block (Landmark Approach Nerve Block)	40	54.5(19.80)	MeanDif	6.1(-3.01,15.21)	Not Significant (P-value>.05)

Table 8: Non-Surgical Alternative Treatment: Nerve Block - CT vs. Landmark Guided Approach - Function

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Shanahan, E. M., 2004	High Quality	SPADI Disability Subscale: Shoulder Pain and Disability Index	1 weeks	PICO 5: CT Guided Nerve Block (CT Guided Nerve Block)	37	58.1(23.90)	PICO 5: Landmark Approach Nerve Block (Landmark Approach Nerve Block)	40	52.9(21.20)	MeanDif	5.2(-4.92,15.32)	Not Significant (P-value>.05)
Shanahan, E. M., 2004	High Quality	SPADI Disability Subscale: Shoulder Pain and Disability Index	4 weeks	PICO 5: CT Guided Nerve Block (CT Guided Nerve Block)	37	58.7(21.30)	PICO 5: Landmark Approach Nerve Block (Landmark Approach Nerve Block)	40	50(22.90)	MeanDif	8.7(-1.17,18.57)	Not Significant (P-value>.05)
Shanahan, E. M., 2004	High Quality	SPADI Disability Subscale: Shoulder Pain and Disability Index	12 weeks	PICO 5: CT Guided Nerve Block (CT Guided Nerve Block)	37	62.6(21.20)	PICO 5: Landmark Approach Nerve Block (Landmark Approach Nerve Block)	40	56.9(21.20)	MeanDif	5.7(-3.78,15.18)	Not Significant (P-value>.05)

Table 9: Non-Surgical Alternative Treatment: Nerve Block - CT vs. Landmark Guided Approach - Pain

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Shanahan, E. M., 2004	High Quality	SPADI Pain Subscale: Shoulder Pain and Disability Index	1 weeks	PICO 5: CT Guided Nerve Block (CT Guided Nerve Block)	37	51.9(23.80)	PICO 5: Landmark Approach Nerve Block (Landmark Approach Nerve Block)	40	46.6(20.40)	MeanDif	5.3(-4.64,15.24)	Not Significant (P-value>.05)
Shanahan, E. M., 2004	High Quality	Pain at Rest: VAS	1 weeks	PICO 5: CT Guided Nerve Block (CT Guided Nerve Block)	37	22.1(22.70)	PICO 5: Landmark Approach Nerve Block (Landmark Approach Nerve Block)	40	20.8(19.00)	MeanDif	1.3(-8.09,10.69)	Not Significant (P-value>.05)
Shanahan, E. M., 2004	High Quality	Pain on Movement: VAS	1 weeks	PICO 5: CT Guided Nerve Block (CT Guided Nerve Block)	37	47.8(23.40)	PICO 5: Landmark Approach Nerve Block (Landmark Approach Nerve Block)	40	49.2(23.70)	MeanDif	-1.4(-11.93,9.13)	Not Significant (P-value>.05)
Shanahan, E. M., 2004	High Quality	Pain at Night: VAS	1 weeks	PICO 5: CT Guided Nerve Block (CT Guided Nerve Block)	37	33.3(26.00)	PICO 5: Landmark Approach Nerve Block (Landmark Approach Nerve Block)	40	29(20.50)	MeanDif	4.3(-6.21,14.81)	Not Significant (P-value>.05)
Shanahan, E. M., 2004	High Quality	Pain at Rest: VAS	4 weeks	PICO 5: CT Guided Nerve Block (CT Guided Nerve Block)	37	23.3(17.00)	PICO 5: Landmark Approach Nerve Block (Landmark Approach Nerve Block)	40	18(17.10)	MeanDif	5.3(-2.32,12.92)	Not Significant (P-value>.05)
Shanahan, E. M., 2004	High Quality	Pain on Movement: VAS	4 weeks	PICO 5: CT Guided Nerve Block (CT Guided Nerve Block)	37	48.4(24.50)	PICO 5: Landmark Approach Nerve Block (Landmark Approach Nerve Block)	40	42.6(24.10)	MeanDif	5.8(-5.07,16.67)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Shanahan, E. M., 2004	High Quality	Pain at Night: VAS	4 weeks	PICO 5: CT Guided Nerve Block (CT Guided Nerve Block)	37	29.5(21.70)	PICO 5: Landmark Approach Nerve Block (Landmark Approach Nerve Block)	40	26.2(18.30)	MeanDif	3.3(-5.70,12.30)	Not Significant (P-value>.05)
Shanahan, E. M., 2004	High Quality	SPADI Pain Subscale: Shoulder Pain and Disability Index	4 weeks	PICO 5: CT Guided Nerve Block (CT Guided Nerve Block)	37	52(24.60)	PICO 5: Landmark Approach Nerve Block (Landmark Approach Nerve Block)	40	43.4(22.80)	MeanDif	8.6(-2.02,19.22)	Not Significant (P-value>.05)
Shanahan, E. M., 2004	High Quality	Pain at Night: VAS	12 weeks	PICO 5: CT Guided Nerve Block (CT Guided Nerve Block)	37	44.5(27.90)	PICO 5: Landmark Approach Nerve Block (Landmark Approach Nerve Block)	40	35.8(24.00)	MeanDif	8.7(-2.97,20.37)	Not Significant (P-value>.05)
Shanahan, E. M., 2004	High Quality	Pain at Rest: VAS	12 weeks	PICO 5: CT Guided Nerve Block (CT Guided Nerve Block)	37	29.3(18.80)	PICO 5: Landmark Approach Nerve Block (Landmark Approach Nerve Block)	40	25.4(18.00)	MeanDif	3.9(-4.33,12.13)	Not Significant (P-value>.05)
Shanahan, E. M., 2004	High Quality	Pain on Movement: VAS	12 weeks	PICO 5: CT Guided Nerve Block (CT Guided Nerve Block)	37	57.1(23.00)	PICO 5: Landmark Approach Nerve Block (Landmark Approach Nerve Block)	40	54.7(27.10)	MeanDif	2.4(-8.80,13.60)	Not Significant (P-value>.05)
Shanahan, E. M., 2004	High Quality	SPADI Pain Subscale: Shoulder Pain and Disability Index	12 weeks	PICO 5: CT Guided Nerve Block (CT Guided Nerve Block)	37	58.2(22.50)	PICO 5: Landmark Approach Nerve Block (Landmark Approach Nerve Block)	40	52(23.00)	MeanDif	6.2(-3.97,16.37)	Not Significant (P-value>.05)

PICO 9: Prognostic Factors

Prognostic Factors: Age

Summary of Findings:

	High Quality	Moderate Quality	Low Quality
Bernstein, D. N., 2017 Chalmers, P. N., 2014 Gartsman, G. M., 2005 Herschel, R., 2017 Lapner, P. L., 2015 BjA, rnholdt, K. T., 2015 Mahony, G. T., 2018 Robinson, W. A., 2018 Odquist, M., 2018 Cho, C. H., 2017 Iriberri, I., 2015 Rispoli, D. M., 2006 Schairer, W. W., 2014 Steen, B. M., 2015			
↑ Better Outcomes ↓ Worse Outcomes • Not Significant			
Composite			
Constant - Adjusted: mean, pvalue only			
Constant - Total (significance only)			
failure to achieve MCID of 16.1 points on ASES questionnaire			
Increases in Constant and SST Scorespvalue only			
ASES - Totalpvalue only			
Function			
correlation with ASES- American Shoulder and Elbow Score			
correlation with subjective shoulder valueSSV- how normal does your shoulder feel on a scale 1-100?			
Mobility Score: mean pvalue only			
Strength - Subscapularispvalue only			
ROM (abduction, external rotation, and internal rotation)auth rep significance only			
moderate-severe glenoid bone erosion			
SSTpvalue only			

	High Quality	Moderate Quality	Low Quality
Bernstein, D. N., 2017 Chalmers, P. N., 2014 Gartsman, G. M., 2005 Herschel, R., 2017 Lapner, P. L., 2015 BjA, rnholdt, K. T., 2015 Mahony, G. T., 2018 Robinson, W. A., 2018 A?dquist, M., 2018 Cho, C. H., 2017 Iriberri, I., 2015 Rispoli, D. M., 2006 Schairer, W. W., 2014 Steen, B. M., 2015			
↑ Better Outcomes ↓ Worse Outcomes • Not Significant			
Pain			
Persistent Pain 1-2 Years After Arthroplasty correlation with VAS Pain			
Pain Scale: significance only			
Pain Scoreauth rep significance only			
Quality of life			
correlation with WHOQOL-BREFWHOQOL-BREF is 26 questions, 4-20 points			
Adverse events			
Revision Hazard Ratio			
unplanned readmission a priori model			
Any Complicationpvalue only			
Major Complicationspvalue only			
Surgical Complicationspvalue only			
Medical Complicationspvalue only			
Glenoid Loosening			
Glenoid Component Lucencypvalue only			
revision surgery			
Glenoid Erosion (Moderate/Severe)sig. only			
Any Humeral Head Subluxation			
90 Day Readmission Hazard Ratio			
Patient Satisfaction			
Patient Satisfaction			

Table 10: Prognostic Factor: Age - Adverse Events

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Iriberry, I., 2015	Low Quality	Any Humeral Head Subluxation	7 years	PICO 9: Prognostic Factor A (80+ Age)	32	9.38%	PICO 9: Prognostic Factor B (<70 Age)	32	18.75%	RR	0.50(0.14,1.83)	Not Significant (P-value>.05)
Iriberry, I., 2015	Low Quality	Glenoid Loosening	7 years	PICO 9: Prognostic Factor A (80+ Age)	32	18.75%	PICO 9: Prognostic Factor B (<70 Age)	32	18.75%	RR	1.00(0.36,2.77)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Odquist, M., 2018	Low Quality	Complications / Adverse Events (Revision Hazard Ratio)	. minutes	1140	PICO 9: Prognostic Factor A (HemiA (stemless or stemmed))	Continuous Age	Cox	Hazard Ratio	0.94 (95% CI: 0.93, 0.96)	+1 year age has 6% LESS hazard of revision
Bernstein, D. N., 2017	High Quality	Complications / Adverse Events (unplanned readmission)	30 days	3160	PICO 9: Prognostic Factor A (TSA; prog factors age, ASA, BMI, smoke, DM)	continuous	logistic regression (age, ASA, BMI, smoke, DM)	OR (95% CI); p-value	1.03 (1.00, 1.06); 0.068	NS
Chalmers, P. N., 2014	High Quality	Complications / Adverse Events (Any Complication)	90 days	127	PICO 9: Prognostic Factor A (prognostic factors)	Age (unclear if categorized or cont.)	Mult. Logistic Reg Adjusted for: BMI, CCI	pvalue only	0.77	NS
Chalmers, P. N., 2014	High Quality	Complications / Adverse Events (Major Complications)	90 days	127	PICO 9: Prognostic Factor A (prognostic factors)	Age (unclear if categorized or cont.)	Mult. Logistic Reg Adjusted for: BMI, CCI	pvalue only	0.406	NS
Chalmers, P. N., 2014	High Quality	Complications / Adverse Events (Surgical Complications)	90 days	127	PICO 9: Prognostic Factor A (prognostic factors)	Age (unclear if categorized or cont.)	Mult. Logistic Reg Adjusted for: BMI, CCI	pvalue only	0.548	NS
Chalmers, P. N., 2014	High Quality	Complications / Adverse Events (Medical Complications)	90 days	127	PICO 9: Prognostic Factor A (prognostic factors)	Age (unclear if categorized or cont.)	Mult. Logistic Reg Adjusted for: BMI, CCI	pvalue only	0.909	NS
Gartsman, G. M., 2005	High Quality	Complications / Adverse Events (Glenoid Component Lucency)	6 weeks	43	PICO 9: Prognostic Factor A (prognostic factors)	Continuous Age	ANOVA		pval > 0.05	NS
Herschel, R., 2017	High Quality	Complications / Adverse Events (Glenoid Erosion (Moderate/Severe))	31 months	118	PICO 9: Prognostic Factor A (prognostic factors)	Continuous Age	Spearman Rank Correlation	significance only	not significant	NS
Rispoli, D. M., 2006	Low Quality	Complications / Adverse Events (Revision Hazard Ratio)	. minutes	49	PICO 9: Prognostic Factor A (prognostic factors)	Continuous Age	Cox proportional hazards	HR (95% CI)	0.935 (95% CI: 0.893, 0.979)	Older by 1 yr favored over younger by 1 yr
Robinson, W. A., 2018	Moderate Quality	Complications / Adverse Events (revision surgery)	. minutes	44	PICO 9: Prognostic Factor A (humeral head replacement)	continuous	proportional hazards regression (age)	hazard ratio (95% CI); p-value	0.93 (0.87, 0.99); 0.049	higher age associated w/ lower revision surgery
Schairer, W. W., 2014	Low Quality	Complications / Adverse Events (90 Day Readmission Hazard Ratio)	90 days	26218	PICO 9: Prognostic Factor A (prognostic factors)	55-74 vs. <55 (ref)	adjusted for sex, hospital procedure volume, and medical comorbidities	Hazard Ratio	0.97 (95% CI: 0.80-1.17)	NS
Schairer, W. W., 2014	Low Quality	Complications / Adverse Events (90 Day Readmission Hazard Ratio)	90 days	26218	PICO 9: Prognostic Factor A (prognostic factors)	At Least 75 vs. <55 (ref.)	adjusted for sex, hospital procedure volume, and medical comorbidities	Hazard Ratio	1.11 (95% CI: 0.90-1.37)	NS

Table 11: Prognostic Factor: Age - Composite

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Iriberri, I., 2015	Low Quality	Constant - Total: mean, pvalue only	7 years	PICO 9: Prognostic Factor A (80+ Age)	32	65(.)	PICO 9: Prognostic Factor B (<70 Age)	32	67(.)	MeanDif	-2(...)	Not Significant (P-value>.05)
Iriberri, I., 2015	Low Quality	Constant - Adjusted: mean, pvalue only	7 years	PICO 9: Prognostic Factor A (80+ Age)	32	110(.)	PICO 9: Prognostic Factor B (<70 Age)	32	97(.)	MeanDif	13(...)	older group Significant (P-value<.05)

Reference Title	Quality	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Mahony, G. T., 2018	Moderate Quality	Composite Score (failure to achieve MCID of 16.1 points on ASES questionnaire)	2 years	459	PICO 9: Prognostic Factor A (TSA)	low vs high	logistic regression (age, sex, BMI, race)	OR (95% CI); p-value	1.00 (0.95, 1.04); 0.890	NS
Steen, B. M., 2015	Low Quality	Composite Score (ASES - Total)	45 months	96	PICO 9: Prognostic Factor A (Prognostic Factors)	Under 80 vs. Over 80	Kruskal-Wallis test			NS

Table 12: Prognostic Factor: Age - Function

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Iriberri, I., 2015	Low Quality	Mobility Score: mean pvalue only	7 years	PICO 9: Prognostic Factor A (80+ Age)	32	30(.)	PICO 9: Prognostic Factor B (<70 Age)	32	32(.)	MeanDif	-2(...)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Cho, C. H., 2017	Low Quality	Function (correlation with ASES- American Shoulder and Elbow Score)	12 months	46	PICO 9: Prognostic Factor A (TSA; primary prog factors age, sex, side, preop HADS-D, preop HADS-A)	continuous	linear regression (age, unclear additional adjustment)	coefficient (95% CI); p-value	0.186 (-0.384, 0.756); 0.513	NS
Cho, C. H., 2017	Low Quality	Function (correlation with subjective shoulder value)	12 months	46	PICO 9: Prognostic Factor A (TSA; primary prog factors age, sex, side, preop HADS-D, preop HADS-A)	continuous	linear regression (age, unclear additional adjustment)	coefficient (95% CI); p-value	0.127 (-0.222, 0.477); 0.465	NS
Lapner, P. L., 2015	High Quality	Function (Strength - Subscapularis)	2 months	64	PICO 9: Prognostic Factor A (prognostic factors)	Age	Mult Reg: controlled for sex, dominant arm, baseline strength, baseline external rotation, subscapularis management technique, baseline subscap fatty infiltration	pvalue only	0.589	NS
Rispoli, D. M., 2006	Low Quality	Function (ROM (abduction, external rotation, and internal rotation))	. minutes	49	PICO 9: Prognostic Factor A (prognostic factors)	unclear ref	log rank test			NS
Robinson, W. A., 2018	Moderate Quality	Function (moderate-severe glenoid bone erosion)	. minutes	44	PICO 9: Prognostic Factor A (humeral head replacement)	continuous	proportional hazards regression (age)	hazard ratio (95% CI); p-value	1.06 (1.01, 1.12); 0.03	higher age associated w/ lower revision surgery
Steen, B. M., 2015	Low Quality	Function (SST)	45 months	96	PICO 9: Prognostic Factor A (Prognostic Factors)	Under 80 vs. Over 80	Kruskal-Wallis test			NS

Table 13: Prognostic Factor: Age - Pain

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Iriberry, I., 2015	Low Quality	Pain Score: Mean, pvalue only	7 years	PICO 9: Prognostic Factor A (80+ Age)	32	12.7(.)	PICO 9: Prognostic Factor B (<70 Age)	32	12.3(.)	MeanDif	0.4(...)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
BjÃ, rnholdt, K. T., 2015	Moderate Quality	Pain (Persistent Pain 1-2 Years After Arthroplasty)	1 years	222	PICO 9: Prognostic Factor A (prognostic factors- age, sex, bmi, procedure type)	Continuous Age	multivariate logistic regression (adjusted for sex, bmi, pain in first week, pain elsewhere, suppl cuff reconstruction, prosthesis type)	OR (95% CI)	0.94 (95% CI: 0.9, 0.99)	NS
Cho, C. H., 2017	Low Quality	Pain (correlation with VAS Pain)	12 months	46	PICO 9: Prognostic Factor A (TSA; primary prog factors age, sex, side, preop HADS-D, preop HADS-A)	continuous	linear regression (age, unclear additional adjustment)	coefficient (95% CI); p-value	-0.029 (-0.097, 0.039); 0.398	NS
Rispoli, D. M., 2006	Low Quality	Pain (Pain Score)	. minutes	49	PICO 9: Prognostic Factor A (prognostic factors)	unclear ref	log rank test			NS

Table 14: Prognostic Factor: Age - Patient Satisfaction

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Iriberry, I., 2015	Low Quality	Pt Satisfaction (VerySat/Sat)	7 years	PICO 9: Prognostic Factor A (80+ Age)	32	87.50%	PICO 9: Prognostic Factor B (<70 Age)	32	96.88%	RR	0.90(0.78,1.04)	Not Significant (P-value>.05)

Table 15: Quality of Life

Reference Title	Quality	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Cho, C. H., 2017	Low Quality	Quality of Life (correlation with WHOQOL-BREF)	12 months	46	PICO 9: Prognostic Factor A (TSA; primary prog factors age, sex, side, preop HADS-D, preop HADS-A)	continuous	linear regression (age, unclear additional adjustment)	coefficient (95% CI); p-value	0.161 (-0.129, 0.452); 0.268	NS

Prognostic Factor: BMI

Summary of Findings:

	High Quality		Moderate Quality	
	Bernstein, D. N., 2017	Chalmers, P. N., 2014	Jiang, J. J., 2016	BJA_rnholdt, K. T., 2015 Mahony, G. T., 2018
↑ Better Outcomes ↓ Worse Outcomes • Not Significant				
Composite				
failure to achieve MCID of 16.1 points on ASES questionnaire				●
Other				
Discharge to Home			●	
Pain				
Persistent Pain 1-2 Years After Arthroplasty				●
Adverse events				
unplanned readmission a priori model	●			
Any Complicationpvalue only		●		
Major Complicationspvalue only		●		
Surgical Complicationspvalue only		●		
Medical Complicationspvalue only		●		
Any Complication			●	
Return to Operating Room			●	
Blood Transfusions		●		

BMI compared on Continuous Scale

	Low Quality
	Li, X., 2013
↑ Better Outcomes ↓ Worse Outcomes • Not Significant	
Composite	
ASES - Total	●
Function	
SF-36 - Physical Component	●
Quality of life	
SF-36 - Mental Component	●

Obese Vs. Overweight

	Low Quality
	Li, X., 2013
↑ Better Outcomes ↓ Worse Outcomes • Not Significant	
Composite	
ASES - Total	●
Function	
SF-36 - Physical Component	↓
Quality of life	
SF-36 - Mental Component	●

Obese Vs. Normal

	Low Quality
	Li, X., 2013
↑ Better Outcomes ↓ Worse Outcomes • Not Significant	
Composite	
ASES - Total	●
Function	
SF-36 - Physical Component	↓
Quality of life	
SF-36 - Mental Component	●

Overweight Vs. Normal

Table 16: BMI -Adverse events

Reference Title	Quality	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Bernstein, D. N., 2017	High Quality	Complications / Adverse Events (unplanned readmission)	30 days	3160	PICO 9: Prognostic Factor A (TSA; prog factors age, ASA, BMI, smoke, DM)	continuous	logistic regression (age, ASA, BMI, smoke, DM)	OR (95% CI); p-value	0.99 (0.95, 1.03); 0.61	NS
Chalmers, P. N., 2014	High Quality	Complications / Adverse Events (Any Complication)	90 days	127	PICO 9: Prognostic Factor A (prognostic factors)	BMI (3 categories)	Mult. Logistic Reg Adjusted for: age, CCI	pvalue only	0.904	NS
Chalmers, P. N., 2014	High Quality	Complications / Adverse Events (Major Complications)	90 days	127	PICO 9: Prognostic Factor A (prognostic factors)	BMI (3 categories)	Mult. Logistic Reg Adjusted for: age, CCI	pvalue only	0.819	NS
Chalmers, P. N., 2014	High Quality	Complications / Adverse Events (Surgical Complications)	90 days	127	PICO 9: Prognostic Factor A (prognostic factors)	BMI (3 categories)	Mult. Logistic Reg Adjusted for: age, CCI	pvalue only	0.714	NS
Chalmers, P. N., 2014	High Quality	Complications / Adverse Events (Medical Complications)	90 days	127	PICO 9: Prognostic Factor A (prognostic factors)	BMI (3 categories)	Mult. Logistic Reg Adjusted for: age, CCI	pvalue only	0.243	NS
Jiang, J. J., 2016	High Quality	Complications / Adverse Events (Any Complication)	1 months	2201	PICO 9: Prognostic Factor A (prognostic factors)	Overweight vs. Normal (ref.)	multivariate analysis controlled for: age, sex, race, preop function, preop labs/comorb (WBC,creatin,ematocrit,albumin, ASA class preop, comorbidities	adjusted RR (95% CI)	0.57 (0.30, 1.06)	NS
Jiang, J. J., 2016	High Quality	Complications / Adverse Events (Any Complication)	1 months	1864	PICO 9: Prognostic Factor A (prognostic factors)	Obese Class 1 vs. Normal (ref.)	multivariate analysis controlled for: age, sex, race, preop function, preop labs/comorb (WBC,creatin,ematocrit,albumin, ASA class preop, comorbidities	adjusted RR (95% CI)	0.52 (0.26, 1.03)	NS
Jiang, J. J., 2016	High Quality	Complications / Adverse Events (Any Complication)	1 months	1678	PICO 9: Prognostic Factor A (prognostic factors)	Obese Class 2+ vs. Normal (ref.)	multivariate analysis controlled for: age, sex, race, preop function, preop labs/comorb (WBC,creatin,ematocrit,albumin, ASA class preop, comorbidities	adjusted RR (95% CI)	0.54 (0.25, 1.17)	NS
Jiang, J. J., 2016	High Quality	Complications / Adverse Events (Return to Operating Room)	1 months	2201	PICO 9: Prognostic Factor A (prognostic factors)	Overweight vs. Normal (ref.)	multivariate analysis controlled for: age, sex, race, preop function, preop labs/comorb (WBC,creatin,ematocrit,albumin, ASA class preop, comorbidities	adjusted RR (95% CI)	0.29 (0.07, 1.29)	NS
Jiang, J. J., 2016	High Quality	Complications / Adverse Events (Return to Operating Room)	1 months	1864	PICO 9: Prognostic Factor A (prognostic factors)	Obese Class 1 vs. Normal (ref.)	multivariate analysis controlled for: age, sex, race, preop function, preop labs/comorb (WBC,creatin,ematocrit,albumin, ASA class preop, comorbidities	adjusted RR (95% CI)	0.56 (0.14, 2.23)	NS
Jiang, J. J., 2016	High Quality	Complications / Adverse Events (Return to Operating Room)	1 months	1678	PICO 9: Prognostic Factor A (prognostic factors)	Obese Class 2+ vs. Normal (ref.)	multivariate analysis controlled for: age, sex, race, preop function, preop labs/comorb (WBC,creatin,ematocrit,albumin, ASA class preop, comorbidities	adjusted RR (95% CI)	0.58 (0.12, 2.89)	NS
Jiang, J. J., 2016	High Quality	Complications / Adverse Events (Blood Transfusions)	1 months	2201	PICO 9: Prognostic Factor A (prognostic factors)	Overweight vs. Normal (ref.)	multivariate analysis controlled for: age, sex, race, preop function, preop labs/comorb (WBC,creatin,ematocrit,albumin, ASA class preop, comorbidities	adjusted RR (95% CI)	0.68 (0.33, 1.41)	NS
Jiang, J. J., 2016	High Quality	Complications / Adverse Events (Blood Transfusions)	1 months	1864	PICO 9: Prognostic Factor A (prognostic factors)	Obese Class 1 vs. Normal (ref.)	multivariate analysis controlled for: age, sex, race, preop function, preop labs/comorb (WBC,creatin,ematocrit,albumin, ASA class preop, comorbidities	adjusted RR (95% CI)	0.82 (0.39, 1.71)	NS

Reference Title	Quality	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Jiang, J. J., 2016	High Quality	Complications / Adverse Events (Blood Transfusions)	1 months	1678	PICO 9: Prognostic Factor A (prognostic factors)	Obese Class 2+ vs. Normal (ref.)	multivariate analysis controlled for: age, sex, race, preop function, preop labs/comorb (WBC,creatine,hematocrit,albumin, ASA class preop, comorbidities	adjusted RR (95% CI)	0.41 (0.16, 1.05)	NS

Table 17: BMI -Composite

Reference Title	Quality	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Mahony, G. T., 2018	Moderate Quality	Composite Score (failure to achieve MCID of 16.1 points on ASES questionnaire)	2 years	459	PICO 9: Prognostic Factor A (TSA)	continuous	logistic regression (age, sex, BMI, race)	OR (95% CI); p-value	1.01 (0.93, 1.08); 0.887	NS

Table 18: BMI -Other

Reference Title	Quality	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Jiang, J. J., 2016	High Quality	Other (Discharge to Home)	1 months	738	PICO 9: Prognostic Factor A (prognostic factors)	Overweight vs. Normal (ref.)	multivariate analysis controlled for: age, sex, race, preop function, preop labs/comorb (WBC,creatine,hematocrit,albumin, ASA class preop, comorbidities	adjusted RR (95% CI)	1.07 (0.82, 1.40)	NS
Jiang, J. J., 2016	High Quality	Other (Discharge to Home)	1 months	1864	PICO 9: Prognostic Factor A (prognostic factors)	Obese Class 1 vs. Normal (ref.)	multivariate analysis controlled for: age, sex, race, preop function, preop labs/comorb (WBC,creatine,hematocrit,albumin, ASA class preop, comorbidities	adjusted RR (95% CI)	1.34 (0.95, 1.84)	NS
Jiang, J. J., 2016	High Quality	Other (Discharge to Home)	1 months	1678	PICO 9: Prognostic Factor A (prognostic factors)	Obese Class 2+ vs. Normal (ref.)	multivariate analysis controlled for: age, sex, race, preop function, preop labs/comorb (WBC,creatine,hematocrit,albumin, ASA class preop, comorbidities	adjusted RR (95% CI)	1.06 (0.78, 1.46)	NS

Table 19: BMI -Pain

Reference Title	Quality	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
BjÄ_rnholdt, K. T., 2015	Moderate Quality	Pain (Persistent Pain 1-2 Years After Arthroplasty)	1 years	222	PICO 9: Prognostic Factor A (prognostic factors- age, sex, bmi, procedure type)	Continuous BMI	multivariate logistic regression (adjusted for age, sex, pain in first week, pain elsewhere, suppl cuff reconstruction, prosthesis type)	OR (95% CI)	0.94 (95% CI: 0.87, 1.01)	NS

Table 20: PICO 9- Prognostic Factor: BMI (Obese vs. Normal)- Composite

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Li, X., 2013	Low Quality	ASES - Total	2 years	PICO 9: Prognostic Factor A (Obese - BMI 30+)	25	80(20.60)	PICO 9: Prognostic Factor C (Normal - BMI <25)	26	80.2(19.40)	MeanDif	-0.2(- 11.19,10.79)	Not Significant (P-value>.05)

Table 21: PICO 9- Prognostic Factor: BMI (Obese vs. Normal)- Function

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Li, X., 2013	Low Quality	SF-36 - Physical Component	2 years	PICO 9: Prognostic Factor A (Obese - BMI 30+)	25	40.7(12.40)	PICO 9: Prognostic Factor C (Normal - BMI <25)	26	53.7(11.30)	MeanDif	-13(-19.52,-6.48)	Treatment 2 Significant (P-value<.05)

Table 22: PICO 9- Prognostic Factor: BMI (Obese vs. Normal)- Quality of life

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Li, X., 2013	Low Quality	SF-36 - Mental Component	2 years	PICO 9: Prognostic Factor A (Obese - BMI 30+)	25	52.9(11.60)	PICO 9: Prognostic Factor C (Normal - BMI <25)	26	52.8(10.00)	MeanDif	0.1(-5.85,6.05)	Not Significant (P-value>.05)

Table 23: PICO 9- Prognostic Factor: BMI (Obese vs. Overweight)- Composite

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Li, X., 2013	Low Quality	ASES - Total	2 years	PICO 9: Prognostic Factor A (Obese - BMI 30+)	25	80(20.60)	PICO 9: Prognostic Factor B (Overweight - BMI 25 to <30)	25	75.2(24.90)	MeanDif	4.8(-7.87,17.47)	Not Significant (P-value>.05)

Table 24: PICO 9- Prognostic Factor: BMI (Obese vs. Overweight)- Function

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Li, X., 2013	Low Quality	SF-36 - Physical Component	2 years	PICO 9: Prognostic Factor A (Obese - BMI 30+)	25	40.7(12.40)	PICO 9: Prognostic Factor B (Overweight - BMI 25 to <30)	25	39.8(12.20)	MeanDif	0.9(-5.92,7.72)	Not Significant (P-value>.05)

Table 25: PICO 9- Prognostic Factor: BMI (Obese vs. Overweight)- Quality of life

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Li, X., 2013	Low Quality	SF-36 - Mental Component	2 years	PICO 9: Prognostic Factor A (Obese - BMI 30+)	25	52.9(11.60)	PICO 9: Prognostic Factor B (Overweight - BMI 25 to <30)	25	51.7(11.50)	MeanDif	1.2(-5.20,7.60)	Not Significant (P-value>.05)

Table 26: PICO 9- Prognostic Factor: BMI (Overweight vs. Normal)- Composite

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Li, X., 2013	Low Quality	ASES - Total	2 years	PICO 9: Prognostic Factor B (Overweight - BMI 25 to <30)	25	75.2(24.90)	PICO 9: Prognostic Factor C (Normal - BMI <25)	26	80.2(19.40)	MeanDif	-5(-17.28,7.28)	Not Significant (P-value>.05)

Table 27: PICO 9- Prognostic Factor: BMI (Overweight vs. Normal)- Function

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Li, X., 2013	Low Quality	SF-36 - Physical Component	2 years	PICO 9: Prognostic Factor B (Overweight - BMI 25 to <30)	25	39.8(12.20)	PICO 9: Prognostic Factor C (Normal - BMI <25)	26	53.7(11.30)	MeanDif	-13.9(-20.36,-7.44)	Treatment 2 Significant (P-value<.05)

Table 28: PICO 9- Prognostic Factor: BMI (Overweight vs. Normal)- Quality of life

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Li, X., 2013	Low Quality	SF-36 - Mental Component	2 years	PICO 9: Prognostic Factor B (Overweight - BMI 25 to <30)	25	51.7(11.50)	PICO 9: Prognostic Factor C (Normal - BMI <25)	26	52.8(10.00)	MeanDif	-1.1(-7.02,4.82)	Not Significant (P-value>.05)

Prognostic Factor: Female vs. Male

Summary of Findings:

	High Quality	Moderate Quality	Low Quality
↑ Better Outcomes ↓ Worse Outcomes • Not Significant	Gartsman, G. M., 2005 Herschel, R., 2017 Lapner, P. L., 2015 Bjornholdt, K. T., 2015 Mahony, G. T., 2018 Robinson, W. A., 2018 Odquist, M., 2018 Cho, C. H., 2017 Leschinger, T., 2017 Petri, M., 2016 Rispoli, D. M., 2006 Schairer, W. W., 2014		
Composite			
ASES - Total			
failure to achieve MCID of 16.1 points on ASES questionnaire			
SANE: Single Assessment Numeric Evaluation			
SF-12 - Physical Component			
Function			
correlation with ASES- American Shoulder and Elbow Score			
correlation with subjective shoulder valueSSV- how normal does your shoulder feel on a scale 1-100?			
Strength - Subscapularisvalue only			
qDASH			
ROM (abduction, external rotation, and internal rotation)auth rep significance only			
moderate-severe glenoid bone erosion			

	High Quality	Moderate Quality	Low Quality
↑ Better Outcomes ↓ Worse Outcomes • Not Significant	Gartsman, G. M., 2005 Herschel, R., 2017 Lapner, P. L., 2015 Bjornholdt, K. T., 2015 Mahony, G. T., 2018 Robinson, W. A., 2018 Odquist, M., 2018 Cho, C. H., 2017 Leschinger, T., 2017 Petri, M., 2016 Rispoli, D. M., 2006 Schairer, W. W., 2014		
Pain			
Persistent Pain 1-2 Years After Arthroplasty			
correlation with VAS Pain			
Pain Scoreauth rep significance only			
Quality of life			
correlation with WHOQOL-BREFWHOQOL-BREF is 26 questions, 4-20 points			
Adverse events			
Revision Hazard Ratio			
Glenoid Component Lucencyvalue only			
revision surgery			
Glenoid Erosion (Moderate/Severe)sig. only			
Any Complication			
90 Day Readmission Hazard Ratio			
Patient Satisfaction			
Satisfaction: significance only			

Table 29: Prognostic Factor: Female vs. Male- Adverse Events

Reference Title	Quality	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Oquist, M., 2018	Low Quality	Complications / Adverse Events (Revision Hazard Ratio)	. minutes	1140	PICO 9: Prognostic Factor A (HemiA (stemless or stemmed))	Male vs. Female	Cox	auth rep. significance only		NS
Gartsman, G. M., 2005	High Quality	Complications / Adverse Events (Glenoid Component Lucency)	6 weeks	43	PICO 9: Prognostic Factor A (prognostic factors)	Male vs. Female (unclear ref)	ANOVA		pval > 0.05	NS
Herschel, R., 2017	High Quality	Complications / Adverse Events (Glenoid Erosion (Moderate/Severe))	31 months	118	PICO 9: Prognostic Factor A (prognostic factors)	Female vs. Male (ref.)	logistic regression controlled for preop glenoid cysts	adjusted OR (95% CI)	3.6 (1.3, 10.0)	Male favored over Female
Leschinger, T., 2017	Low Quality	Complications / Adverse Events (Any Complication)	43 months	275	PICO 9: Prognostic Factor A (prognostic factors)	Female vs Male (ref)	Odds Ratio Unadjusted	OR (95% CI)	1.16 (0.47, 2.66)	NS
Robinson, W. A., 2018	Moderate Quality	Complications / Adverse Events (revision surgery)	. minutes	44	PICO 9: Prognostic Factor A (humeral head replacement)	female vs male	proportional hazards regression (sex)	hazard ratio (95% CI); p-value	1.17 (0.30, 4.11); 0.81	NS
Schairer, W. W., 2014	Low Quality	Complications / Adverse Events (90 Day Readmission Hazard Ratio)	90 days	26218	PICO 9: Prognostic Factor A (prognostic factors)	Male vs. Female (ref)	adjusted for age, hospital procedure volume, and medical comorbidities	Hazard Ratio	1.14 (95% CI: 1.03-1.26)	Female favored over male

Table 30: Prognostic Factor: Female vs. Male - Composite

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Petri, M., 2016	Low Quality	SF-12 - Physical Component	2 years	PICO 9: Prognostic Factor A (Female pts)	25	46.9(11.00)	PICO 9: Prognostic Factor B (Male pts)	51	50.1(9.70)	MeanDif	-3.2(-8.27,1.87)	Not Significant (P-value>.05)
Petri, M., 2016	Low Quality	ASES - Total	2 years	PICO 9: Prognostic Factor A (Female pts)	24	89(13.40)	PICO 9: Prognostic Factor B (Male pts)	50	88.2(18.20)	MeanDif	0.8(-6.56,8.16)	Not Significant (P-value>.05)
Petri, M., 2016	Low Quality	SANE: single assessment numeric evaluation	2 years	PICO 9: Prognostic Factor A (Female pts)	21	82(20.00)	PICO 9: Prognostic Factor B (Male pts)	46	89.1(15.20)	MeanDif	-7.1(-16.72,2.52)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Mahony, G. T., 2018	Moderate Quality	Composite Score (failure to achieve MCID of 16.1 points on ASES questionnaire)	2 years	459	PICO 9: Prognostic Factor A (TSA)	female vs male	logistic regression (age, sex, BMI, race)	OR (95% CI); p-value	1.42 (0.61, 3.32); 0.418	NS

Table 31: Prognostic Factor: Female vs. Male - Function

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Petri, M., 2016	Low Quality	qDASH	2 years	PICO 9: Prognostic Factor A (Female pts)	20	18(17.30)	PICO 9: Prognostic Factor B (Male pts)	52	12.3(17.00)	MeanDif	5.7(-3.18,14.58)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Cho, C. H., 2017	Low Quality	Function (correlation with ASES- American Shoulder and Elbow Score)	12 months	46	PICO 9: Prognostic Factor A (TSA; primary prog factors age, sex, side, preop HADS-D, preop HADS-A)	male vs female	linear regression (sex, unclear additional adjustment)	coefficient (95% CI); p-value	-8.410 (-21.951, 5.131); 0.217	NS
Cho, C. H., 2017	Low Quality	Function (correlation with subjective shoulder value)	12 months	46	PICO 9: Prognostic Factor A (TSA; primary prog factors age, sex, side, preop HADS-D, preop HADS-A)	male vs female	linear regression (sex, unclear additional adjustment)	coefficient (95% CI); p-value	-2.038 (-10.328, 6.252); 0.622	NS
Lapner, P. L., 2015	High Quality	Function (Strength - Subscapularis)	2 months	64	PICO 9: Prognostic Factor A (prognostic factors)	Male vs. Female; ref unk	Mult Reg: controlled for age, dominant arm, baseline strength, baseline external rotation, subscapularis management technique, baseline subscap fatty infiltration	pvalue only	0.134	NS
Rispoli, D. M., 2006	Low Quality	Function (ROM (abduction, external rotation, and internal rotation))	. minutes	49	PICO 9: Prognostic Factor A (prognostic factors)	unclear ref	log rank test			NS
Robinson, W. A., 2018	Moderate Quality	Function (moderate-severe glenoid bone erosion)	. minutes	44	PICO 9: Prognostic Factor A (humeral head replacement)	female vs male	proportional hazards regression (sex)	hazard ratio (95% CI); p-value	1.79 (0.76, 4.38); 0.18	NS

Table 32: Prognostic Factor: Female vs. Male- Pain

Reference Title	Quality	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
BjÃ_rnholdt, K. T., 2015	Moderate Quality	Pain (Persistent Pain 1-2 Years After Arthroplasty)	1 years	222	PICO 9: Prognostic Factor A (prognostic factors- age, sex, bmi, procedure type)	Female vs. Male (ref)	multivariate logistic regression (adjusted for age, bmi, pain in first week, pain elsewhere, suppl cuff reconstruction, prosthesis type)	OR (95% CI)	2.2 (95% CI: 0.9, 5.5)	NS
Cho, C. H., 2017	Low Quality	Pain (correlation with VAS Pain)	12 months	46	PICO 9: Prognostic Factor A (TSA; primary prog factors age, sex, side, preop HADS-D, preop HADS-A)	male vs female	linear regression (sex, unclear additional adjustment)	coefficient (95% CI); p-value	0.612 (-1.010, 2.234); 0.450	NS
Rispoli, D. M., 2006	Low Quality	Pain (Pain Score)	. minutes	49	PICO 9: Prognostic Factor A (prognostic factors)	unclear ref	log rank test			NS

Table 33: Prognostic Factor: Female vs. Male - Patient Satisfaction

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Petri, M., 2016	Low Quality	Satisfaction: pvalue only	2 years	PICO 9: Prognostic Factor A (Female pts)	25	. %	PICO 9: Prognostic Factor B (Male pts)	51	. %	Author Reported	NA	Not Significant (P-value>.05)

Table 34: Prognostic Factor: Female vs. Male- Quality of Life

Reference Title	Quality	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Cho, C. H., 2017	Low Quality	Quality of Life (correlation with WHOQOL-BREF)	12 months	46	PICO 9: Prognostic Factor A (TSA; primary prog factors age, sex, side, preop HADS-D, preop HADS-A)	male vs female	linear regression (sex, unclear additional adjustment)	coefficient (95% CI); p-value	0.590 (-6.308, 7.487); 0.864	NS

Prognostic Factor: Comorbidities

Summary of Findings:

	High Quality	Moderate Quality	Low Quality			
	Bernstein, D. N., 2017	Chalmers, P. N., 2014	Mahony, G. T., 2018	Cho, C. H., 2017	Leschinger, T., 2017	Schairer, W. W., 2014
↑ Better Outcomes						
↓ Worse Outcomes						
● Not Significant						
Composite						
failure to achieve MCID of 16.1 points on ASES questionnaire			↓			
Function						
ASES- American Shoulder and Elbow Score				●		
SSV				●		
Pain						
correlation with VAS Pain				●		
Quality of life						
correlation with WHOQOL-BREFWHOQOL-BREF is 26 questions, 4-20 points				●		
Adverse events						
unplanned readmission a priori model	●					
unplanned readmission *low quality data* statistically determined variables	↓					
Any Complicationpvalue only		↓				
Major Complicationspvalue only		↓				
Surgical Complicationspvalue only		↓				
Medical Complicationspvalue only		●				
Any Complication					↓	
90 Day Readmission Hazard Ratio						↓

Table 35: Comorbidities -Adverse events

Reference Title	Quality	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Bernstein, D. N., 2017	High Quality	Complications / Adverse Events (unplanned readmission)	30 days	3160	PICO 9: Prognostic Factor A (TSA; prog factors age, ASA, BMI, smoke, DM)	ASA \geq 3 vs ASA<3	logistic regression (age, ASA, BMI, smoke, DM)	OR (95% CI); p-value	1.48 (0.87, 2.51); 0.14	NS
Bernstein, D. N., 2017	High Quality	Complications / Adverse Events (unplanned readmission)	30 days	3160	PICO 9: Prognostic Factor A (TSA; prog factors age, ASA, BMI, smoke, DM)	DM vs none	logistic regression (age, ASA, BMI, smoke, DM)	OR (95% CI); p-value	1.18 (0.60, 2.34); 0.63	NS
Bernstein, D. N., 2017	High Quality	Complications / Adverse Events (unplanned readmission)	30 days	3160	PICO 9: Prognostic Factor A (TSA; prog factors age, ASA, BMI, smoke, DM)	hypertension requiring meds vs none	logistic regression (operating time, hypertension requiring meds, age, men, ASA, high blood urea nitrogen, high creatine, low platelets)	OR (95% CI); p-value	1.95 (1.01, 3.76); 0.046	hypertension requiring meds significantly associated with higher unplanned readmission
Bernstein, D. N., 2017	High Quality	Complications / Adverse Events (unplanned readmission)	30 days	3160	PICO 9: Prognostic Factor A (TSA; prog factors age, ASA, BMI, smoke, DM)	high blood urea nitrogen (>30mg/dL) vs lower blood urea nitrogen (\leq <30mg/dL)	logistic regression (operating time, hypertension requiring meds, age, men, ASA, high blood urea nitrogen, high creatine, low platelets)	OR (95% CI); p-value	2.13 (0.78, 5.77); 0.14	NS
Bernstein, D. N., 2017	High Quality	Complications / Adverse Events (unplanned readmission)	30 days	3160	PICO 9: Prognostic Factor A (TSA; prog factors age, ASA, BMI, smoke, DM)	high creatinine (>1.3mg/dL) vs low (\leq <1.3mg/dL)	logistic regression (operating time, hypertension requiring meds, age, men, ASA, high blood urea nitrogen, high creatine, low platelets)	OR (95% CI); p-value	1.30 (0.54, 3.16); 0.56	NS
Bernstein, D. N., 2017	High Quality	Complications / Adverse Events (unplanned readmission)	30 days	3160	PICO 9: Prognostic Factor A (TSA; prog factors age, ASA, BMI, smoke, DM)	low platelets (<150,000/uL) vs high (\geq >150,000/uL)	logistic regression (operating time, hypertension requiring meds, age, men, ASA, high blood urea nitrogen, high creatine, low platelets)	OR (95% CI); p-value	2.14 (0.98, 4.65); 0.056	NS
Chalmers, P. N., 2014	High Quality	Complications / Adverse Events (Any Complication)	90 days	127	PICO 9: Prognostic Factor A (prognostic factors)	CCI Cont.	Mult. Logistic Reg Adjusted for: age, BMI	pvalue only	0.005	Lower CCI is better
Chalmers, P. N., 2014	High Quality	Complications / Adverse Events (Major Complications)	90 days	127	PICO 9: Prognostic Factor A (prognostic factors)	CCI Cont.	Mult. Logistic Reg Adjusted for: age, BMI	pvalue only	0.62	NS
Chalmers, P. N., 2014	High Quality	Complications / Adverse Events (Surgical Complications)	90 days	127	PICO 9: Prognostic Factor A (prognostic factors)	CCI Cont.	Mult. Logistic Reg Adjusted for: age, BMI	pvalue only	0.015	Lower CCI is better
Chalmers, P. N., 2014	High Quality	Complications / Adverse Events (Medical Complications)	90 days	127	PICO 9: Prognostic Factor A (prognostic factors)	CCI Cont.	Mult. Logistic Reg Adjusted for: age, BMI	pvalue only	0.098	NS
Leschinger, T., 2017	Low Quality	Complications / Adverse Events (Any Complication)	43 months	235	PICO 9: Prognostic Factor A (prognostic factors)	ASA Class 2 vs. 1 (ref)	Odds Ratio Unadjusted	OR (95% CI)	0.83 (0.30, 2.26)	NS
Leschinger, T., 2017	Low Quality	Complications / Adverse Events (Any Complication)	43 months	127	PICO 9: Prognostic Factor A (prognostic factors)	ASA Class 3 vs. 1 (ref)	Odds Ratio Unadjusted	OR (95% CI)	3.81 (1.33-10.92)	ASA Class 1 favored over 3

Reference Title	Quality	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Leschinger, T., 2017	Low Quality	Complications / Adverse Events (Any Complication)	43 months	188	PICO 9: Prognostic Factor A (prognostic factors)	ASA Class 3 vs. 2 (ref)	Odds Ratio Unadjusted	OR (95% CI)	4.6 (1.76, 12.03)	ASA Class 2 favored over 3
Leschinger, T., 2017	Low Quality	Complications / Adverse Events (Any Complication)	43 months	275	PICO 9: Prognostic Factor A (prognostic factors)	ASA Class 3 vs 1/2 (ref)	Odds Ratio Unadjusted	OR (95% CI)	4.28 (1.79, 10.20)	ASA Class 1/2 favored over 3
Schairer, W. W., 2014	Low Quality	Complications / Adverse Events (90 Day Readmission Hazard Ratio)	90 days	26218	PICO 9: Prognostic Factor A (prognostic factors)	Each additional comorbidity	adjusted for age, sex, hospital procedure volume, and medical comorbidities	Hazard Ratio	1.19 (95% CI: 1.15-1.22)	Fewer Comorbidities favored over more

Table 36: Comorbidities -Composite

Reference Title	Quality	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Mahony, G. T., 2018	Moderate Quality	Composite Score (failure to achieve MCID of 16.1 points on ASES questionnaire)	2 years	459	PICO 9: Prognostic Factor A (TSA)	diabetes vs none	logistic regression (age, sex, BMI, race, diabetes vs none)	OR (95% CI); p-value	4.15 (1.00, 15.06); 0.036	diabetes associated w/ worse outcome
Mahony, G. T., 2018	Moderate Quality	Composite Score (failure to achieve MCID of 16.1 points on ASES questionnaire)	2 years	459	PICO 9: Prognostic Factor A (TSA)	back pain vs none	logistic regression (age, sex, BMI, race, back pain vs none)	OR (95% CI); p-value	1.97 (0.90, 4.34); 0.089	NS

Table 37: Comorbidities -Function

Reference Title	Quality	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Cho, C. H., 2017	Low Quality	Function (correlation with ASES-American Shoulder and Elbow Score)	12 months	46	PICO 9: Prognostic Factor A (TSA; primary prog factors age, sex, side, preop HADS-D, preop HADS-A)	continuous	linear regression (preop HADS-D)	coefficient (95% CI); p-value	0.140 (-2.030, 2.309); 0.897	NS
Cho, C. H., 2017	Low Quality	Function (correlation with ASES-American Shoulder and Elbow Score)	12 months	46	PICO 9: Prognostic Factor A (TSA; primary prog factors age, sex, side, preop HADS-D, preop HADS-A)	continuous	linear regression (preop HADS-A)	coefficient (95% CI); p-value	0.787 (-1.318, 2.893); 0.454	NS
Cho, C. H., 2017	Low Quality	Function (correlation with subjective shoulder value)	12 months	46	PICO 9: Prognostic Factor A (TSA; primary prog factors age, sex, side, preop HADS-D, preop HADS-A)	continuous	linear regression (preop HADS-D)	coefficient (95% CI); p-value	0.528 (-0.800, 1.857); 0.426	NS
Cho, C. H., 2017	Low Quality	Function (correlation with subjective shoulder value)	12 months	46	PICO 9: Prognostic Factor A (TSA; primary prog factors age, sex, side, preop HADS-D, preop HADS-A)	continuous	linear regression (preop HADS-A)	coefficient (95% CI); p-value	-0.014 (-1.303, 1.275); 0.982	NS

Table 38: Comorbidities -Pain

Reference Title	Quality	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Cho, C. H., 2017	Low Quality	Pain (correlation with VAS Pain)	12 months	46	PICO 9: Prognostic Factor A (TSA; primary prog factors age, sex, side, preop HADS-D, preop HADS-A)	continuous	linear regression (preop HADS-D)	coefficient (95% CI); p-value	-0.016 (-0.276, 0.244); 0.899	NS
Cho, C. H., 2017	Low Quality	Pain (correlation with VAS Pain)	12 months	46	PICO 9: Prognostic Factor A (TSA; primary prog factors age, sex, side, preop HADS-D, preop HADS-A)	continuous	linear regression (preop HADS-A)	coefficient (95% CI); p-value	-0.010 (-0.363, 0.142); 0.382	NS

Table 39: Comorbidities -Quality of life

Reference Title	Quality	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Cho, C. H., 2017	Low Quality	Quality of Life (correlation with WHOQOL-BREF)	12 months	46	PICO 9: Prognostic Factor A (TSA; primary prog factors age, sex, side, preop HADS-D, preop HADS-A)	continuous	linear regression (preop HADS-D)	coefficient (95% CI); p-value	-0.815 (-1.920, 0.291); 0.144	NS
Cho, C. H., 2017	Low Quality	Quality of Life (correlation with WHOQOL-BREF)	12 months	46	PICO 9: Prognostic Factor A (TSA; primary prog factors age, sex, side, preop HADS-D, preop HADS-A)	continuous	linear regression (preop HADS-A)	coefficient (95% CI); p-value	-0.172 (-1.244, 0.901); 0.748	NS

Prognostic Factor: Smoking

Summary of Findings:

	Bernstein, D. N., 2017	High Quality	Low Quality
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant			
Adverse events			
unplanned readmission a priori model			
Any Complication			

Smoker vs. Non-Smoker

	Wells, D. B., 2018	Low Quality
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant		
Other		
Length of Stay (significance only)		
Pain		
Pain Scale: significance only		
Morphine Consumption: significance only		
Adverse events		
Any Complication		

Current vs. Former Smokers

	Wells, D. B., 2018	Low Quality
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant		
Pain		
Pain Scale: significance only		
Morphine Consumption: significance only		
Change in Pain: significance only		
Adverse events		
Any Complication		

Current vs. Never Smokers

	Wells, D. B., 2018	Low Quality
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant		
Pain		
Pain Scale: significance only		
Morphine Consumption: significance only		
Change in Pain: significance only		
Adverse events		
Any Complication		

Former vs. Never Smokers

Table 40: Prognostic Factor: Smoking (Current vs. Former) - Adverse Events

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Wells, D. B., 2018	Low Quality	Any Complication	Post-Op	PICO 9: Prognostic Factor A (current smokers as identified by pts on health hx intake forms and clinical interview; all groups received postop rehab (sling, passive ROM, PT, isometric strengthening))	28	17.86%	PICO 9: Prognostic Factor B (former smokers as identified by pts who reported tobacco cessation longer than 3 months before initial surgical eval; all groups received postop rehab (sling, passive ROM, PT, isometric strengthening))	47	10.64%	RR	1.68(0.53,5.29)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Bernstein, D. N., 2017	High Quality	Complications / Adverse Events (unplanned readmission)	30 days	3160	PICO 9: Prognostic Factor A (TSA; prog factors age, ASA, BMI, smoke, DM)	present smoker vs no	logistic regression (age, ASA, BMI, smoke, DM)	OR (95% CI); p-value	1.72 (0.75, 3.96); 0.20	NS
Leschinger, T., 2017	Low Quality	Complications / Adverse Events (Any Complication)	43 minutes	275	PICO 9: Prognostic Factor A (prognostic factors)	Yes Nicotine Use vs. No Nicotine Use (ref)	Odds Ratio Unadjusted	OR (95% CI)	5.08 (1.96, 13.11)	No Nicotine Use favored over Yes Nicotine Use

Table 41: Prognostic Factor: Smoking (Current vs. Former)- Other

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Wells, D. B., 2018	Low Quality	length of stay (days): mean, significance only	Post-Op	PICO 9: Prognostic Factor A (current smokers as identified by pts on health hx intake forms and clinical interview; all groups received postop rehab (sling, passive ROM, PT, isometric strengthening))	28	1.21(.)	PICO 9: Prognostic Factor B (former smokers as identified by pts who reported tobacco cessation longer than 3 months before initial surgical eval; all groups received postop rehab (sling, passive ROM, PT, isometric strengthening))	47	0.95(.)	MeanDif	0.26(.,.)	Not Significant (P-value>.05)

Table 42: Prognostic Factor: Smoking (Current vs. Former) - Pain

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Wells, D. B., 2018	Low Quality	VAS: pvalue only	12 weeks	PICO 9: Prognostic Factor A (current smokers as identified by pts on health hx intake forms and clinical interview; all groups received postop rehab (sling, passive ROM, PT, isometric strengthening))	28	. %	PICO 9: Prognostic Factor B (former smokers as identified by pts who reported tobacco cessation longer than 3 months before initial surgical eval; all groups received postop rehab (sling, passive ROM, PT, isometric strengthening))	47	. %	Author Reported	NA	<0.001; current smokers have significantly higher VAS scores than no-use and former-use cohorts Significant (P-value<.05)
Wells, D. B., 2018	Low Quality	Cumulative oral morphine equivalents (mg): mean, pvalue only; determined via query of statewide narcotic prescriptions database	12 weeks	PICO 9: Prognostic Factor A (current smokers as identified by pts on health hx intake forms and clinical interview; all groups received postop rehab (sling, passive ROM, PT, isometric strengthening))	28	2348(.)	PICO 9: Prognostic Factor B (former smokers as identified by pts who reported tobacco cessation longer than 3 months before initial surgical eval; all groups received postop rehab (sling, passive ROM, PT, isometric strengthening))	47	1623(.)	MeanDif	725(.,.)	<0.003; current smokers have significantly higher OME than nonusers and former users Significant (P-value<.05)

Table 43: Prognostic Factor: Smoking (Current vs. Never Smokers) - Adverse Events

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Wells, D. B., 2018	Low Quality	Any Complication	Post-Op	PICO 9: Prognostic Factor A (current smokers as identified by pts on health hx intake forms and clinical interview; all groups received postop rehab (sling, passive ROM, PT, isometric strengthening))	28	17.86%	PICO 9: Prognostic Factor C (nonsmokers as identified by pts on health hx intake forms and clinical interview; all groups received postop rehab (sling, passive ROM, PT, isometric strengthening))	88	7.95%	RR	2.24(0.77,6.52)	Not Significant (P-value>.05)

Table 44: Prognostic Factor: Smoking (Current vs. Never Smokers) - Pain

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Wells, D. B., 2018	Low Quality	mean improvement in VAS: mean, pvalue only	12 weeks	PICO 9: Prognostic Factor A (current smokers as identified by pts on health hx intake forms and clinical interview; all groups received postop rehab (sling, passive ROM, PT, isometric strengthening))	28	2.8(.)	PICO 9: Prognostic Factor B (former smokers as identified by pts who reported tobacco cessation longer than 3 months before initial surgical eval; all groups received postop rehab (sling, passive ROM, PT, isometric strengthening))	47	4.3(.)	MeanDif	- 1.5(...)	<0.02; current smokers have significantly less mean improvement in VAS than no-use and former use c Significant (P-value<.05)
Wells, D. B., 2018	Low Quality	Cumulative oral morphine equivalents (mg): mean, pvalue only; determined via query of statewide narcotic prescriptions database	12 weeks	PICO 9: Prognostic Factor A (current smokers as identified by pts on health hx intake forms and clinical interview; all groups received postop rehab (sling, passive ROM, PT, isometric strengthening))	28	2348(.)	PICO 9: Prognostic Factor C (nonsmokers as identified by pts on health hx intake forms and clinical interview; all groups received postop rehab (sling, passive ROM, PT, isometric strengthening))	88	1637(.)	MeanDif	711(...)	<0.003; current smokers have significantly higher OME than nonusers and former users Significant (P-value<.05)
Wells, D. B., 2018	Low Quality	VAS: pvalue only	12 weeks	PICO 9: Prognostic Factor A (current smokers as identified by pts on health hx intake forms and clinical interview; all groups received postop rehab (sling, passive ROM, PT, isometric strengthening))	28	. %	PICO 9: Prognostic Factor C (nonsmokers as identified by pts on health hx intake forms and clinical interview; all groups received postop rehab (sling, passive ROM, PT, isometric strengthening))	88	. %	Author Reported	NA	<0.001; current smokers have significantly higher VAS scores than no-use and former-use cohorts Significant (P-value<.05)
Wells, D. B., 2018	Low Quality	mean improvement in VAS: mean, pvalue only	12 weeks	PICO 9: Prognostic Factor A (current smokers as identified by pts on health hx intake forms and clinical interview; all groups received postop rehab (sling, passive ROM, PT, isometric strengthening))	28	2.8(.)	PICO 9: Prognostic Factor C (nonsmokers as identified by pts on health hx intake forms and clinical interview; all groups received postop rehab (sling, passive ROM, PT, isometric strengthening))	88	4(.)	MeanDif	- 1.2(...)	<0.02; current smokers have significantly less mean improvement in VAS than no-use and former use c Significant (P-value<.05)

Table 45: Prognostic Factor: Smoking (Former Smokers vs. Never Smokers) - Adverse Events

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Wells, D. B., 2018	Low Quality	Any Complication	Post-Op	PICO 9: Prognostic Factor B (former smokers as identified by pts who reported tobacco cessation longer than 3 months before initial surgical eval; all groups received postop rehab (sling, passive ROM, PT, isometric strengthening))	47	10.64%	PICO 9: Prognostic Factor C (nonsmokers as identified by pts on health hx intake forms and clinical interview; all groups received postop rehab (sling, passive ROM, PT, isometric strengthening))	88	7.95%	RR	1.34(0.45,3.98)	Not Significant (P-value>.05)

Table 46: Prognostic Factor: Smoking (Former Smokers vs. Never Smokers) - Pain

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Wells, D. B., 2018	Low Quality	VAS: pvalue only	12 weeks	PICO 9: Prognostic Factor B (former smokers as identified by pts who reported tobacco cessation longer than 3 months before initial surgical eval; all groups received postop rehab (sling, passive ROM, PT, isometric strengthening))	47	. %	PICO 9: Prognostic Factor C (nonsmokers as identified by pts on health hx intake forms and clinical interview; all groups received postop rehab (sling, passive ROM, PT, isometric strengthening))	88	. %	Author Reported	NA	<0.001; current smokers have significantly higher VAS scores than no-use and former-use cohorts Significant (P-value<.05)
Wells, D. B., 2018	Low Quality	mean improvement in VAS: mean, pvalue only	12 weeks	PICO 9: Prognostic Factor B (former smokers as identified by pts who reported tobacco cessation longer than 3 months before initial surgical eval; all groups received postop rehab (sling, passive ROM, PT, isometric strengthening))	47	4.3(.)	PICO 9: Prognostic Factor C (nonsmokers as identified by pts on health hx intake forms and clinical interview; all groups received postop rehab (sling, passive ROM, PT, isometric strengthening))	88	4(.)	MeanDif	0.3(.,.)	<0.02; current smokers have significantly less mean improvement in VAS than no-use and former use c Significant (P-value<.05)
Wells, D. B., 2018	Low Quality	Cumulative oral morphine equivalents (mg): mean, pvalue only; determined via query of statewide narcotic prescriptions database	12 weeks	PICO 9: Prognostic Factor B (former smokers as identified by pts who reported tobacco cessation longer than 3 months before initial surgical eval; all groups received postop rehab (sling, passive ROM, PT, isometric strengthening))	47	1623(.)	PICO 9: Prognostic Factor C (nonsmokers as identified by pts on health hx intake forms and clinical interview; all groups received postop rehab (sling, passive ROM, PT, isometric strengthening))	88	1637(.)	MeanDif	14(.,.)	<0.003; current smokers have significantly higher OME than nonusers and former users Significant (P-value<.05)

Prognostic Factor: Preop Function

Summary of Findings:

	High Quality	Moderate Quality	Low Quality
<p>↑ Better Outcomes</p> <p>↓ Worse Outcomes</p> <p>● Not Significant</p>	Lapner, P. L., 2015	Mahony, G. T., 2018	Robinson, W. A., 2018
			Cho, C. H., 2017
			Hartzler, R. U., 2017
			Somerson, J. S., 2017
Composite			
failure to achieve MCID of 16.1 points on ASES questionnaire		↓	
Function			
correlation with ASES- American Shoulder and Elbow Score			●
Subjective shoulder value (SSV)			●
Strength - Subscapularis pvalue only	●		
moderate-severe glenoid bone erosion		●	
SST (Simple Shoulder Test) Change			↑
SST % maximum possible improvement			●
Pain			
correlation with VAS Pain			●
Quality of life			
correlation with WHOQOL-BREF WHOQOL-BREF is 26 questions, 4-20 points			●
Adverse events			
revision surgery		●	↑

Table 47: Preop function -Adverse events

Reference Title	Quality	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Hartzler, R. U., 2017	Low Quality	Complications / Adverse Events (revision surgery)	. minutes	43	PICO 9: Prognostic Factor A (TSA)	continuous	logistic regression (preop ASES score, surgical center)	OR (95% CI); p-value	0.9 (0.8, 1.0); 0.003	higher preop ASES score significantly associated with lower revision
Robinson, W. A., 2018	Moderate Quality	Complications / Adverse Events (revision surgery)	. minutes	44	PICO 9: Prognostic Factor A (humeral head replacement)	preop glenohumeral subluxation	proportional hazards regression (preop glenohumeral subluxation)	hazard ratio (95% CI); p-value	2.78 (0.47, 52.55); 0.29	NS
Robinson, W. A., 2018	Moderate Quality	Complications / Adverse Events (revision surgery)	. minutes	44	PICO 9: Prognostic Factor A (humeral head replacement)	laborer vs other	proportional hazards regression (laborer vs other)	hazard ratio (95% CI); p-value	1.23 (0.17, 6.32); 0.81	NS

Table 48: Preop function -Composite

Reference Title	Quality	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Mahony, G. T., 2018	Moderate Quality	Composite Score (failure to achieve MCID of 16.1 points on ASES questionnaire)	2 years	459	PICO 9: Prognostic Factor A (TSA)	continuous	logistic regression (age, sex, BMI, race, preop ASES score)	OR (95% CI); p-value	1.05 (1.03, 1.08); <0.001	higher preop ASES score associated w/ worse outcome

Table 49: Preop function -Function

Reference Title	Quality	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Cho, C. H., 2017	Low Quality	Function (correlation with ASES- American Shoulder and Elbow Score)	12 months	46	PICO 9: Prognostic Factor A (TSA; primary prog factors age, sex, side, preop HADS-D, preop HADS-A)	continuous	linear regression (preop duration of symptoms, unclear additional adjustment)	coefficient (95% CI); p-value	0.015 (-0.033, 0.063); 0.531	NS
Cho, C. H., 2017	Low Quality	Function (correlation with subjective shoulder value)	12 months	46	PICO 9: Prognostic Factor A (TSA; primary prog factors age, sex, side, preop HADS-D, preop HADS-A)	continuous	linear regression (preop duration of symptoms, unclear additional adjustment)	coefficient (95% CI); p-value	-0.001 (-0.031, 0.028); 0.931	NS
Lapner, P. L., 2015	High Quality	Function (Strength - Subscapularis)	2 months	64	PICO 9: Prognostic Factor A (prognostic factors)	Baseline Strength Cont.	Mult Reg: controlled for age, sex, dominant arm, baseline external rotation, subscapularis management technique, baseline subscap fatty infiltration	pvalue only	0.194	NS
Lapner, P. L., 2015	High Quality	Function (Strength - Subscapularis)	2 months	64	PICO 9: Prognostic Factor A (prognostic factors)	Baseline external rotation	Mult Reg: controlled for age, sex, dominant arm, baseline strength, subscapularis management technique, baseline subscap fatty infiltration	pvalue only	0.302	NS
Robinson, W. A., 2018	Moderate Quality	Function (moderate-severe glenoid bone erosion)	. minutes	44	PICO 9: Prognostic Factor A (humeral head replacement)	preop glenohumeral subluxation	proportional hazards regression (preop glenohumeral subluxation)	hazard ratio (95% CI); p-value	0.52 (0.18, 1.54); 0.23	NS
Robinson, W. A., 2018	Moderate Quality	Function (moderate-severe glenoid bone erosion)	. minutes	44	PICO 9: Prognostic Factor A (humeral head replacement)	laborer vs other	proportional hazards regression (laborer vs other)	hazard ratio (95% CI); p-value	0.69 (0.15, 2.25); 0.55	NS

Reference Title	Quality	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Somerson, J. S., 2017	Low Quality	Function (change in Simple Shoulder Test)	. minutes	50	PICO 9: Prognostic Factor A (ream and run procedure)	continuous	linear regression (preop simple shoulder test, per 1 point, unclear additional adjustment)	coefficient (95% CI); p-value	-0.7 (-0.9, -0.5); <0.001	higher preop SST associated with less change in postop SST
Somerson, J. S., 2017	Low Quality	Function (% maximum possible improvement in simple shoulder test)	. minutes	50	PICO 9: Prognostic Factor A (ream and run procedure)	continuous	linear regression (preop simple shoulder test, per 1 point, unclear additional adjustment)	coefficient (95% CI); p-value	-1 (-4, 2); 0.6	NS

Table 50: Preop function -Pain

Reference Title	Quality	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Cho, C. H., 2017	Low Quality	Pain (correlation with VAS Pain)	12 months	46	PICO 9: Prognostic Factor A (TSA; primary prog factors age, sex, side, preop HADS-D, preop HADS-A)	continuous	linear regression (preop duration of symptoms, unclear additional adjustment)	coefficient (95% CI); p-value	-0.002 (-0.007, 0.004); 0.588	NS

Table 51: Preop function -Quality of life

Reference Title	Quality	Outcome Details	Duration	N	Treatment (Details)	Comparison	Confounding Adjustment	Statistic	Result	Significance
Cho, C. H., 2017	Low Quality	Quality of Life (correlation with WHOQOL-BREF)	12 months	46	PICO 9: Prognostic Factor A (TSA; primary prog factors age, sex, side, preop HADS-D, preop HADS-A)	continuous	linear regression (preop duration of symptoms, unclear additional adjustment)	coefficient (95% CI); p-value	0.015 (-0.009, 0.040); 0.211	NS

Prognostic Factor: Depression

Summary of Findings:

	High Quality
↑ Better Outcomes ↓ Worse Outcomes • Not Significant	Werner, B. C., 2017
Composite	
ASES - Total: American Shoulder and Elbow Surgeons	↓
ASES - Total: Change from Baseline	↓
Function	
SF-12 mental component: change from baseline	↑
SF-12 physical score: change from baseline	↓
Marx shoulder activity (change from baseline): significance only;	•
SF-12 physical score: significance only	•
Marx shoulder activity scores: significance only	•
SF-12 mental score	↓
Patient Satisfaction	
patient satisfaction with activities: p-value only; for difference b/w groups	↓
patient satisfaction with work: p-value only; for difference b/w groups	↓
overall patient satisfaction; satisfied vs neither/dissatisfied: n (%)	•
patient satisfaction with work; satisfied vs neither/dissatisfied: n (%)	•
patient satisfaction with QOL: p-value only; for difference b/w groups	↓
patient satisfaction with activities; satisfied vs neither/dissatisfied: n (%)	•
patient satisfaction with pain: p-value only; for difference b/w groups	•
overall patient satisfaction: p-value only; for difference b/w groups	↓
patient satisfaction with pain; satisfied vs neither/dissatisfied: n (%)	•
patient satisfaction with QOL; satisfied vs neither/dissatisfied: n (%)	↓

Table 52: Prognostic Factor: Depression - Composite

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Werner, B. C., 2017	High Quality	ASES - Total: Change from Baseline	2 years	PICO 9: Prognostic Factor A (pts undergoing TSA; preop diagnosis of depression from PCP or psychiatrist; screened for active depression at time of entry into study)	82	50.5(24.40)	PICO 9: Prognostic Factor B (matched cohort of pts undergoing TSA w/o depression)	167	59.7(17.50)	MeanDif	-9.2(-15.11,-3.29)	Treatment 2 Significant (P-value<.05)
Werner, B. C., 2017	High Quality	ASES - Total	2 years	PICO 9: Prognostic Factor A (pts undergoing TSA; preop diagnosis of depression from PCP or psychiatrist; screened for active depression at time of entry into study)	82	84.9(17.30)	PICO 9: Prognostic Factor B (matched cohort of pts undergoing TSA w/o depression)	167	90.8(11.30)	MeanDif	-5.9(-10.02,-1.78)	Treatment 2 Significant (P-value<.05)

Table 53: Prognostic Factor: Depression - Function

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Werner, B. C., 2017	High Quality	SF-12 mental component: change from baseline	2 years	PICO 9: Prognostic Factor A (pts undergoing TSA; preop diagnosis of depression from PCP or psychiatrist; screened for active depression at time of entry into study)	82	5.1(8.80)	PICO 9: Prognostic Factor B (matched cohort of pts undergoing TSA w/o depression)	167	2.1(8.20)	MeanDif	3(0.73,5.27)	Treatment 1 Significant (P-value<.05)
Werner, B. C., 2017	High Quality	SF-12 physical score: change from baseline	2 years	PICO 9: Prognostic Factor A (pts undergoing TSA; preop diagnosis of depression from PCP or psychiatrist; screened for active depression at time of entry into study)	82	7(10.60)	PICO 9: Prognostic Factor B (matched cohort of pts undergoing TSA w/o depression)	167	10.7(9.90)	MeanDif	-3.7(-6.44,-0.96)	Treatment 2 Significant (P-value<.05)
Werner, B. C., 2017	High Quality	Marx shoulder activity: significance only; change from baseline	2 years	PICO 9: Prognostic Factor A (pts undergoing TSA; preop diagnosis of depression from PCP or psychiatrist; screened for active depression at time of entry into study)	82	. %	PICO 9: Prognostic Factor B (matched cohort of pts undergoing TSA w/o depression)	167	. %	Author Reported	NA	Not Significant (P-value>.05)
Werner, B. C., 2017	High Quality	SF-12 physical score: significance only	2 years	PICO 9: Prognostic Factor A (pts undergoing TSA; preop diagnosis of depression from PCP or psychiatrist; screened for active depression at time of entry into study)	82	. %	PICO 9: Prognostic Factor B (matched cohort of pts undergoing TSA w/o depression)	167	. %	Author Reported	NA	Not Significant (P-value>.05)
Werner, B. C., 2017	High Quality	Marx shoulder activity scores: significance only	2 years	PICO 9: Prognostic Factor A (pts undergoing TSA; preop diagnosis of depression from PCP or psychiatrist; screened for active depression at time of entry into study)	82	. %	PICO 9: Prognostic Factor B (matched cohort of pts undergoing TSA w/o depression)	167	. %	Author Reported	NA	Not Significant (P-value>.05)
Werner, B. C., 2017	High Quality	SF-12 mental score	2 years	PICO 9: Prognostic Factor A (pts undergoing TSA; preop diagnosis of depression from PCP or psychiatrist; screened for active depression at time of entry into study)	82	49.6(10.20)	PICO 9: Prognostic Factor B (matched cohort of pts undergoing TSA w/o depression)	167	55.6(8.00)	MeanDif	-6(-8.52,-3.48)	Treatment 2 Significant (P-value<.05)

Table 54: Prognostic Factor: Depression - Patient Satisfaction

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Werner, B. C., 2017	High Quality	patient satisfaction with activities: p-value only; for difference b/w groups	2 years	PICO 9: Prognostic Factor A (pts undergoing TSA; preop diagnosis of depression from PCP or psychiatrist; screened for active depression at time of entry into study)	82	. %	PICO 9: Prognostic Factor B (matched cohort of pts undergoing TSA w/o depression)	167	. %	Author Reported	NA	depression associated with lower pt satisfaction with activities Significant (P-value<.05)
Werner, B. C., 2017	High Quality	patient satisfaction with work: p-value only; for difference b/w groups	2 years	PICO 9: Prognostic Factor A (pts undergoing TSA; preop diagnosis of depression from PCP or psychiatrist; screened for active depression at time of entry into study)	82	. %	PICO 9: Prognostic Factor B (matched cohort of pts undergoing TSA w/o depression)	167	. %	Author Reported	NA	depression is associated with lower pt satisfaction with work Significant (P-value<.05)
Werner, B. C., 2017	High Quality	overall patient satisfaction; satisfied vs neither/dissatisfied: n (%)	2 years	PICO 9: Prognostic Factor A (pts undergoing TSA; preop diagnosis of depression from PCP or psychiatrist; screened for active depression at time of entry into study)	82	95.12%	PICO 9: Prognostic Factor B (matched cohort of pts undergoing TSA w/o depression)	167	98.80%	RR	0.96(0.91,1.01)	Not Significant (P-value>.05)
Werner, B. C., 2017	High Quality	patient satisfaction with work; satisfied vs neither/dissatisfied: n (%)	2 years	PICO 9: Prognostic Factor A (pts undergoing TSA; preop diagnosis of depression from PCP or psychiatrist; screened for active depression at time of entry into study)	82	89.02%	PICO 9: Prognostic Factor B (matched cohort of pts undergoing TSA w/o depression)	167	96.41%	RR	0.92(0.85,1.00)	Not Significant (P-value>.05)
Werner, B. C., 2017	High Quality	patient satisfaction with QOL: p-value only; for difference b/w groups	2 years	PICO 9: Prognostic Factor A (pts undergoing TSA; preop diagnosis of depression from PCP or psychiatrist; screened for active depression at time of entry into study)	82	. %	PICO 9: Prognostic Factor B (matched cohort of pts undergoing TSA w/o depression)	82	. %	Author Reported	NA	depression associated with lower satisfaction w/ QOL Significant (P-value<.05)
Werner, B. C., 2017	High Quality	patient satisfaction with activities; satisfied vs neither/dissatisfied: n (%)	2 years	PICO 9: Prognostic Factor A (pts undergoing TSA; preop diagnosis of depression from PCP or psychiatrist; screened for active depression at time of entry into study)	82	84.15%	PICO 9: Prognostic Factor B (matched cohort of pts undergoing TSA w/o depression)	167	91.62%	RR	0.92(0.83,1.02)	Not Significant (P-value>.05)
Werner, B. C., 2017	High Quality	patient satisfaction with pain: p-value only; for difference b/w groups	2 years	PICO 9: Prognostic Factor A (pts undergoing TSA; preop diagnosis of depression from PCP or psychiatrist; screened for active depression at time of entry into study)	82	. %	PICO 9: Prognostic Factor B (matched cohort of pts undergoing TSA w/o depression)	167	. %	Author Reported	NA	Not Significant (P-value>.05)
Werner, B. C., 2017	High Quality	overall patient satisfaction: p-value only; for difference b/w groups	2 years	PICO 9: Prognostic Factor A (pts undergoing TSA; preop diagnosis of depression from PCP or psychiatrist; screened for active depression at time of entry into study)	82	. %	PICO 9: Prognostic Factor B (matched cohort of pts undergoing TSA w/o depression)	167	. %	Author Reported	NA	depression associated with lower overall pt satisfaction Significant (P-value<.05)
Werner, B. C., 2017	High Quality	patient satisfaction with pain; satisfied vs neither/dissatisfied: n (%)	2 years	PICO 9: Prognostic Factor A (pts undergoing TSA; preop diagnosis of depression from PCP or psychiatrist; screened for active depression at time of entry into study)	82	95.12%	PICO 9: Prognostic Factor B (matched cohort of pts undergoing TSA w/o depression)	167	99.40%	RR	0.96(0.91,1.01)	Not Significant (P-value>.05)
Werner, B. C., 2017	High Quality	patient satisfaction with QOL; satisfied vs neither/dissatisfied: n (%)	2 years	PICO 9: Prognostic Factor A (pts undergoing TSA; preop diagnosis of depression from PCP or psychiatrist; screened for active depression at time of entry into study)	82	84.15%	PICO 9: Prognostic Factor B (matched cohort of pts undergoing TSA w/o depression)	167	95.21%	RR	0.88(0.80,0.98)	Treatment 2 Significant (P-value<.05)

PICO 10:

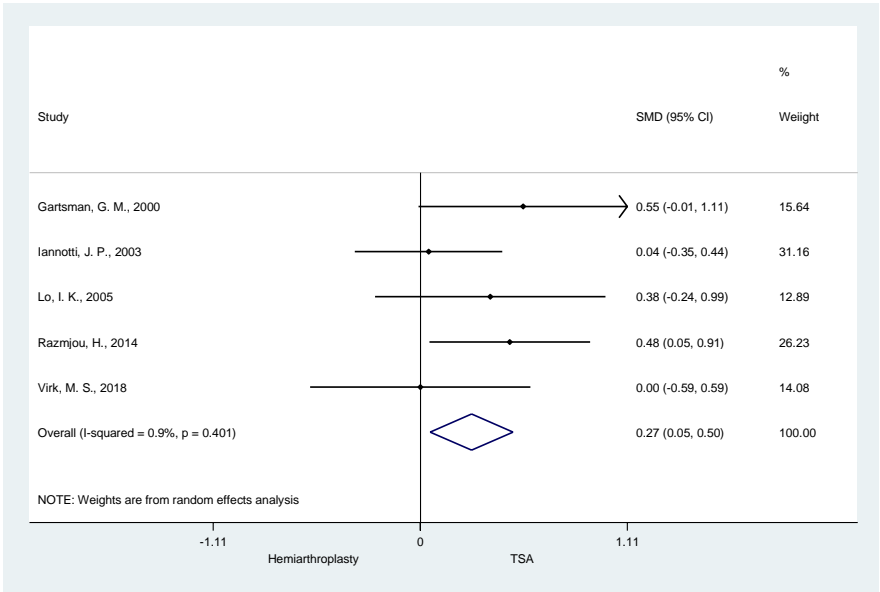
Total Shoulder Arthroplasty vs. Hemiarthroplasty

Summary of Findings:

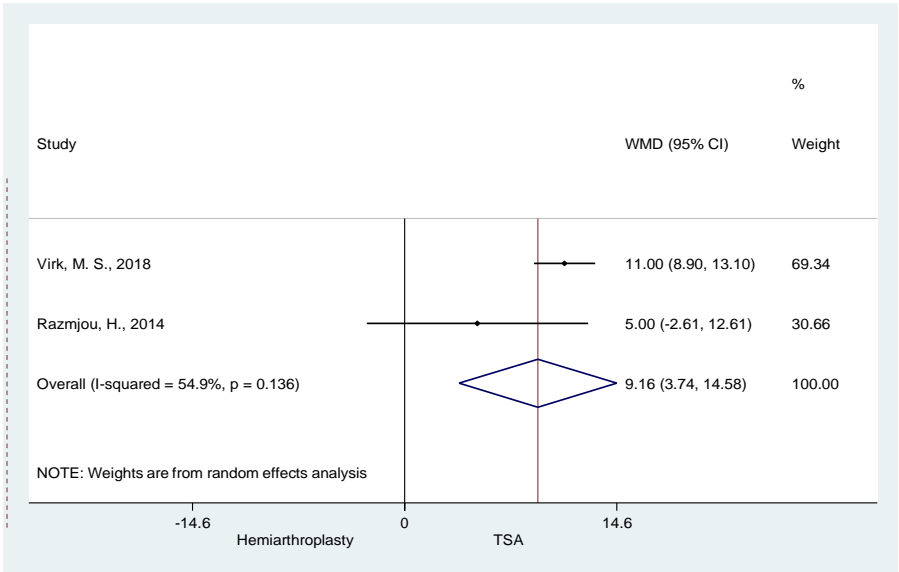
	Gartsman, G. M., 2000 Lo, I. K., 2005	Mann, T., 2014	Garcia, G. H., 2016	Edwards, T. B., 2003	Iannotti, J. P., 2003	Virk, M. S., 2018	Razmjou, H., 2014	Gowd, A. K., 2019	Krukenberg, A., 2018	Werthel, J. D., 2018	Rasmussen, J. V., 2018	Levy, O., 2004	Schraier, W. W., 2014	Clinton, J., 2007	Orfaly, R. M., 2003
	High Quality	Moderate Quality	Low Quality												
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant															
Composite															
ASES - Total: American Shoulder and Elbow Surgeons	↑	●				●	●	↑							
ASES - Total: Change from Baseline						●	●	↑							
ASES - Total: pvalue only						●	●	↑							
Constant - Total		●													
Constant - Total: pvalue only															
Neer Rating: % Excellent or Satisfactory				↑											
RCMS - Total: Relative Constant Murley (accounts for age, sex)							↑								
WOOS - Physical Subscale		●													
WOOS - Physical Subscale: Western Ontario Osteoarthritis Shoulder							↑								
UCLA - Total: University of California at Los Angeles Shoulder Score	↑														
WOOS - Total: Western Ontario Osteoarthritis of the Shoulder		●													
Function															
ROM: Abduction pvalue only										●					
ROM: External Rotation															
ROM: Active Elevation						↑	↑								
Constant - ROM Subscale		●													
ROM: Internal Rotation (pvalue only)										●					
ROM: Abduction							↑								
ROM: External Rotation pvalue only										●					
SF-36 - Physical Component		●													
SST: Simple Shoulder Test						●								↑	
ASES - Activities of Daily Living: pvalue, mean only	↑														
UCLA - Function: pvalue, mean only	↑														
Strength: pvalue, mean only	↑														
Motion: pvalue, mean only	↑														
Constant - Strength Subscale: mean, auth pvalue only			●												
Constant - ROM Subscale: mean, auth pvalue only			↑												
Constant - Activities Subscale: mean, auth pvalue only			↑												
SF-12 Physical Component Score								●							
ROM: Flexion							↑								
Strength: Tensiometer with shoulder at 90 deg elevation							↑								
WOOS - Sports/Recreation/Work Subscale		●													
Other															
Anesthesia Time (min): mean, pvalue only	↓									↓					
Operation Time (min): mean, pvalue only										↓					

	Gartsman, G. M., 2000 Lo, I. K., 2005	Mann, T., 2014	Garcia, G. H., 2016	Edwards, T. B., 2003	Iannotti, J. P., 2003	Virk, M. S., 2018	Razmjou, H., 2014	Gowd, A. K., 2019	Krukenberg, A., 2018	Werthel, J. D., 2018	Rasmussen, J. V., 2018	Levy, O., 2004	Schraier, W. W., 2014	Clinton, J., 2007	Orfaly, R. M., 2003
	High Quality	Moderate Quality	Low Quality												
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant															
Pain															
Pain Scale (pvalue only)	↑														
Pain Scale		●		↑			↑								
Change in VAS: Pvalue Only					●	↑									↑
Quality of life															
% Satisfaction with Surgery: Good/Excellent			↑												
% Very Satisfied									↑						
Pt Satisfaction (% better/much better vs preop)					●					●					
Quality of Life															
Satisfaction with Sports: Good/Excellent			↑												
WOOS - Emotions Subscale		●													
SF-12 Mental Component Score								●							
SF-36 Mental Component		●													
WOOS - Lifestyle Subscale		●													
SSV - Subjective Shoulder Value: mean pvalue only								↑							
UCLA - Pt Satisfaction: pvalue, mean only	↑														
Adverse events															
Any Complication / Adverse Event			●	↑						●					
10 Year Hazard Ratio for Revision: TSA is Reference											↑				
10-Year Survival Rate (%)											↑				
Blood Loss (ml): pvalue, mean only	↓														
Radiolucent Lines (%): Humeral component				↑											
ASES - Instability: modified(?)															
Radiolucent Lines (%): Any													↓		
90 Day Readmission Hazard Ratio: TSA vs. HemiA (ref)														↑	
Overall Survival Hazard Ratio										●					
Evidence of Subluxation (%)									↑						
Patient Satisfaction															
Pt Satisfaction Subjective Score (Excellent/Good)			●												
Good or Excellent Satisfaction								●							
Patient Satisfaction					●										

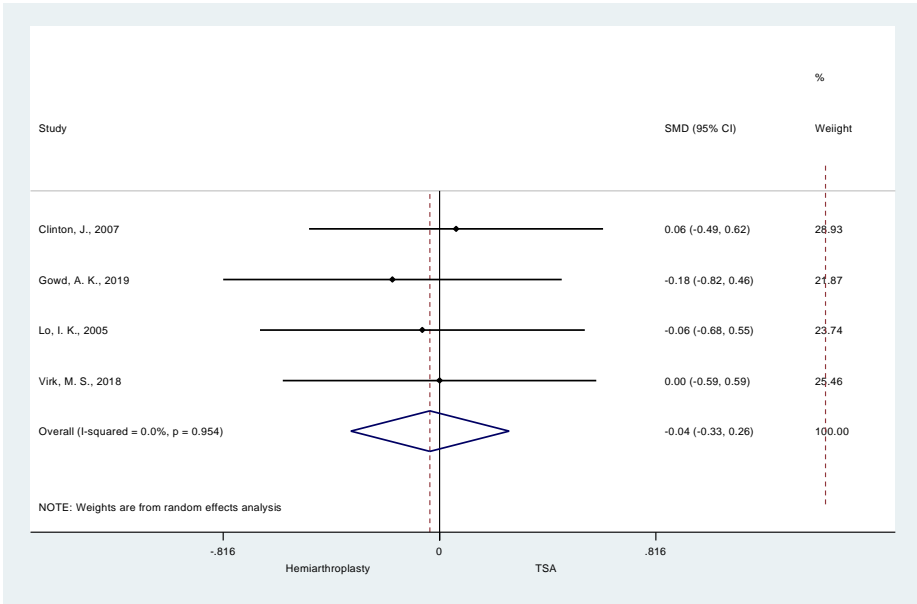
Meta-Analysis: ASES Total



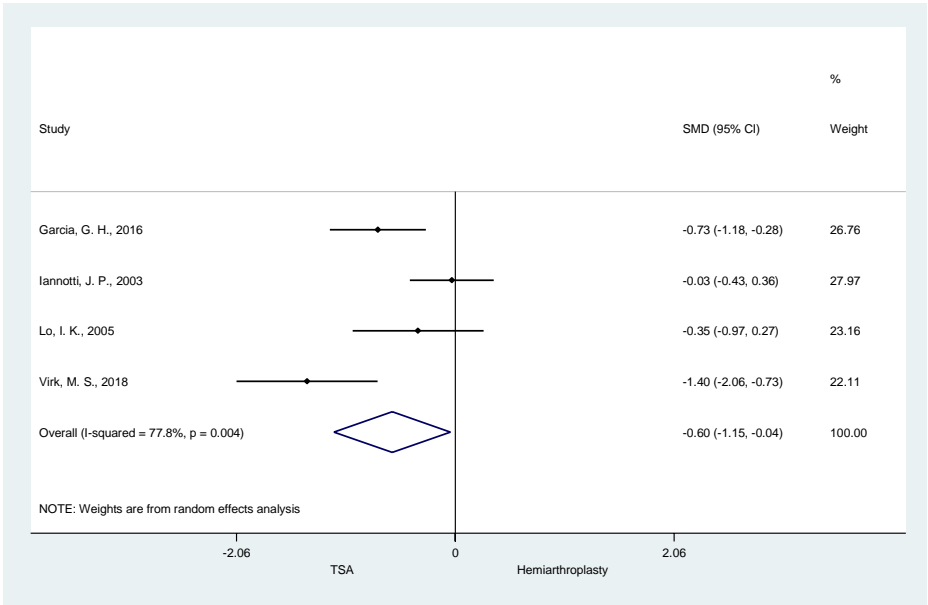
Meta-Analysis: Range of Motion – External Rotation



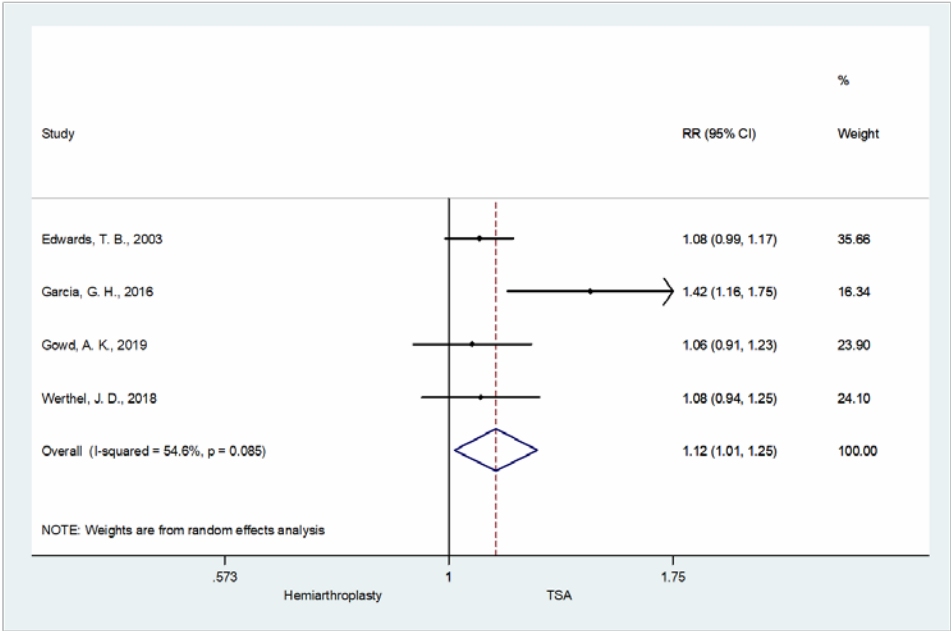
Meta-Analysis: Function Scales



Meta-Analysis: Pain Scales



Meta-Analysis: Satisfaction



Meta-Analysis: Any Complication

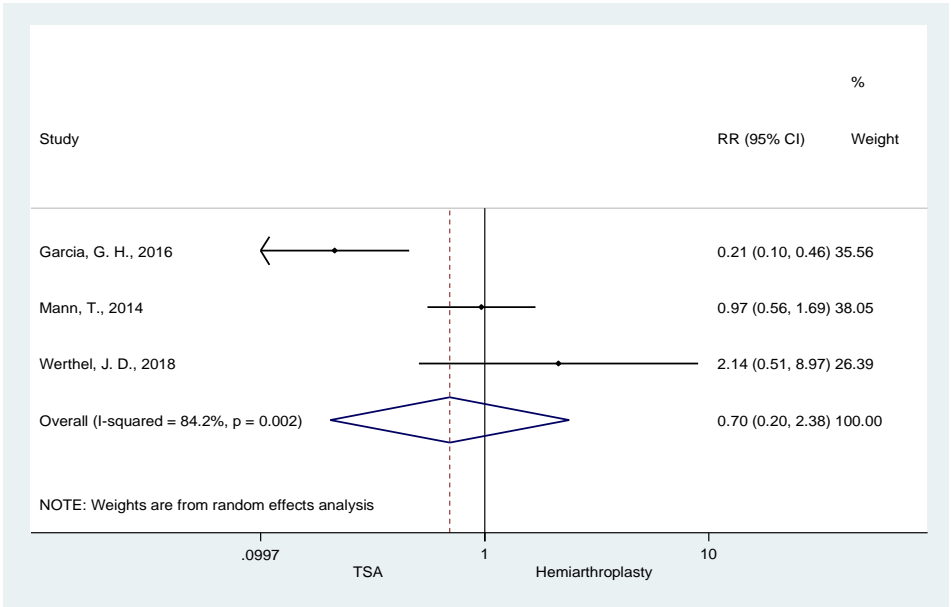


Table 55: Total Shoulder Arthroplasty vs. Hemiarthroplasty - Adverse Events

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Gartsman, G. M., 2000	High Quality	Blood Loss (ml): pvalue, mean only	Intra-Op	PICO 10: TSA 1 (TSA)	27	300(.)	PICO 10: HemiA 1 (Hemiarthroplasty)	24	150(.)	MeanDif	150(.,.)	HemiA Significant (P-value<.05)
Mann, T., 2014	Moderate Quality	Any Complication	Post-Op	PICO 10: TSA 1 (TSA)	592	8.11%	PICO 10: HemiA 1 (HemiA)	179	8.38%	RR	0.97(0.56,1.69)	Not Significant (P-value>.05)
Edwards, T. B., 2003	Low Quality	Radiolucent Lines (%): Humeral component	44 months	PICO 10: TSA 1 (TSA; postop rehab)	601	12.98%	PICO 10: HemiA 1 (HemiA; postop rehab)	89	26.97%	RR	0.48(0.32,0.72)	Treatment 1 Significant (P-value<.05)
Garcia, G. H., 2016	Low Quality	ASES - Instability: modified(?)	62 months	PICO 10: TSA 1 (TSA; deltopectoral)	40	0.2(0.90)	PICO 10: HemiA 1 (HemiA; deltopectoral)	40	1.6(1.60)	MeanDif	-1.4(-1.97,-0.83)	Treatment 1 Significant (P-value<.05)
Garcia, G. H., 2016	Low Quality	Any Complication	62 months	PICO 10: TSA 1 (TSA; deltopectoral)	40	15.00%	PICO 10: HemiA 1 (HemiA; deltopectoral)	40	70.00%	RR	0.21(0.10,0.46)	Treatment 1 Significant (P-value<.05)
Levy, O., 2004	Low Quality	Radiolucent Lines (%): Any	Post-Op	PICO 10: TSA 1 (Copeland stemless resurfacing TSA)	34	29.41%	PICO 10: HemiA 1 (Copeland stemless resurfacing hemiarthroplasty)	33	6.06%	RR	4.85(1.15,20.50)	Treatment 2 Significant (P-value<.05)
Rasmussen, J. V., 2018	Low Quality	10 Year Hazard Ratio for Revision: TSA is Reference	10 years	PICO 10: TSA 1 (Stemmed TSA)	2360	. %	PICO 10: HemiA 1 (Stemmed HemiA)	1587	. %	Author Reported	TSA Ref	TSA Significant (P-value<.05)
Rasmussen, J. V., 2018	Low Quality	10-Year Survival Rate (%)	10 years	PICO 10: TSA 1 (Stemmed TSA)	2360	96.02%	PICO 10: HemiA 1 (Stemmed HemiA)	1587	93.01%	RR	1.03(1.02,1.05)	Treatment 1 Significant (P-value<.05)
Rasmussen, J. V., 2018	Low Quality	10 Year Hazard Ratio for Revision: TSA is Reference	10 years	PICO 10: TSA 1 (Stemmed TSA)	2360	. %	PICO 10: HemiA 2 (Stemless HemiA (aka resurfacing HA))	1923	. %	Author Reported	TSA Ref	TSA Significant (P-value<.05)
Rasmussen, J. V., 2018	Low Quality	10-Year Survival Rate (%)	10 years	PICO 10: TSA 1 (Stemmed TSA)	2360	96.02%	PICO 10: HemiA 2 (Stemless HemiA (aka resurfacing HA))	1923	85.02%	RR	1.13(1.11,1.15)	Treatment 1 Significant (P-value<.05)
Schairer, W. W., 2014	Low Quality	90 Day Readmission Hazard Ratio: TSA vs. HemiA (ref)	90 days	PICO 10: TSA 1 (TSA)	14602	. %	PICO 10: HemiA 1 (HemiA)	8832	. %	Hazard Ratio(Author Reported)	0.8(0.71,0.89)	TSA Significant (P-value<.05)
Werthel, J. D., 2018	Low Quality	Any Complication	5 years	PICO 10: TSA 1 (TSA)	329	5.78%	PICO 10: HemiA 1 (HemiA)	74	2.70%	RR	2.14(0.51,8.97)	Not Significant (P-value>.05)
Werthel, J. D., 2018	Low Quality	Overall Survival Hazard Ratio	5 years	PICO 10: TSA 1 (TSA)	329	. %	PICO 10: HemiA 1 (HemiA)	74	. %	Author Reported	NA	Not Significant (P-value>.05)
Werthel, J. D., 2018	Low Quality	Evidence of Subluxation (%)	5 years	PICO 10: TSA 1 (TSA)	196	31.63%	PICO 10: HemiA 1 (HemiA)	31	51.61%	RR	0.61(0.41,0.91)	Treatment 1 Significant (P-value<.05)

Table 56: Total Shoulder Arthroplasty vs. Hemiarthroplasty - Composite

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Gartsman, G. M., 2000	High Quality	UCLA - Total: University of California at Los Angeles Shoulder Score	35 months	PICO 10: TSA 1 (TSA)	27	37.4(4.90)	PICO 10: HemiA 1 (Hemiarthroplasty)	24	23.2(5.90)	MeanDif	14.2(11.20,17.20)	Treatment 1 Significant (P-value<.05)

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Gartsman, G. M., 2000	High Quality	ASES - Total	35 months	PICO 10: TSA 1 (TSA)	27	77.3(18.20)	PICO 10: HemiA 1 (Hemiarthroplasty)	24	65.2(24.90)	MeanDif	12.1(0.00,24.20)	Treatment 1 Significant (P-value<.05)
Lo, I. K., 2005	High Quality	WOOS - Total: converted to 0-100	2 years	PICO 10: TSA 1 (TSA; standardized postop care)	20	90.6(13.20)	PICO 10: HemiA 1 (HemiA; standardized postop care)	21	81.5(24.10)	MeanDif	9.1(-2.72,20.92)	Not Significant (P-value>.05)
Lo, I. K., 2005	High Quality	Constant - Total	2 years	PICO 10: TSA 1 (TSA; standardized postop care)	20	70.8(17.20)	PICO 10: HemiA 1 (HemiA; standardized postop care)	21	67.1(19.60)	MeanDif	3.7(-7.57,14.97)	Not Significant (P-value>.05)
Lo, I. K., 2005	High Quality	ASES - Total: American Shoulder and Elbow Surgeons	2 years	PICO 10: TSA 1 (TSA; standardized postop care)	20	91.1(14.30)	PICO 10: HemiA 1 (HemiA; standardized postop care)	21	83.1(25.60)	MeanDif	8(-4.62,20.62)	Not Significant (P-value>.05)
Edwards, T. B., 2003	Low Quality	Constant - Total: mean, auth pvalue only	44 months	PICO 10: TSA 1 (TSA; postop rehab)	601	70.3(.)	PICO 10: HemiA 1 (HemiA; postop rehab)	89	64.1(.)	MeanDif	6.2(.,.)	TSA Significant (P-value<.05)
Gowd, A. K., 2019	Low Quality	Change in ASES Score	68 months	PICO 10: TSA 1 (TSA with standard rehabilitation)	20	41.5(22.70)	PICO 10: HemiA 1 (Hemiarthroplasty with Ream and Run)	18	35.9(19.30)	MeanDif	5.6(-7.76,18.96)	Not Significant (P-value>.05)
Iannotti, J. P., 2003	Low Quality	ASES - Total	46 months	PICO 10: TSA 1 (TSA with glenoid cement, pegged OR keeled)	95	86(165.70)	PICO 10: HemiA 1 (HemiA)	33	79(186.65)	MeanDif	7(-64.87,78.87)	Not Significant (P-value>.05)
Krukenberg, A., 2018	Low Quality	ASES - Total: mean, pvalue only	2 years	PICO 10: TSA 1 (Stemless TSA with Sidus Stem-Free Shoulder System 2-component system)	73	90.6(.)	PICO 10: HemiA 1 (Stemless HemiA with Sidus Stem-Free Shoulder System 2-component system)	32	74.6(.)	MeanDif	16(.,.)	TSA Significant (P-value<.05)
Krukenberg, A., 2018	Low Quality	Constant - Total: mean, pvalue only	2 years	PICO 10: TSA 1 (Stemless TSA with Sidus Stem-Free Shoulder System 2-component system)	73	74.7(.)	PICO 10: HemiA 1 (Stemless HemiA with Sidus Stem-Free Shoulder System 2-component system)	32	59(.)	MeanDif	15.7(.,.)	TSA Significant (P-value<.05)
Razmjou, H., 2014	Low Quality	WOOS - Physical Subscale: Western Ontario Osteoarthritis Shoulder	6 months	PICO 10: TSA 1 (TSA, standardized rehab)	108	128(116.65)	PICO 10: HemiA 1 (Humeral Head Replacement (HemiA), standardized rehab)	26	175(119.67)	MeanDif	-47(-97.99,3.99)	Not Significant (P-value>.05)
Razmjou, H., 2014	Low Quality	RCMS - Total: Relative Constant Murley (accounts for age, sex)	6 months	PICO 10: TSA 1 (TSA, standardized rehab)	108	72(21.21)	PICO 10: HemiA 1 (Humeral Head Replacement (HemiA), standardized rehab)	26	60(23.41)	MeanDif	12(2.15,21.85)	Treatment 1 Significant (P-value<.05)
Razmjou, H., 2014	Low Quality	ASES - Total: American Shoulder and Elbow Surgeon Score	6 months	PICO 10: TSA 1 (TSA, standardized rehab)	108	73(21.21)	PICO 10: HemiA 1 (Humeral Head Replacement (HemiA), standardized rehab)	26	63(18.21)	MeanDif	10(1.94,18.06)	Treatment 1 Significant (P-value<.05)
Razmjou, H., 2014	Low Quality	RCMS - Total: Relative Constant Murley (accounts for age, sex)	12 months	PICO 10: TSA 1 (TSA, standardized rehab)	108	82(26.51)	PICO 10: HemiA 1 (Humeral Head Replacement (HemiA), standardized rehab)	26	64(20.81)	MeanDif	18(8.57,27.43)	Treatment 1 Significant (P-value<.05)
Razmjou, H., 2014	Low Quality	WOOS - Physical Subscale: Western Ontario Osteoarthritis Shoulder	12 months	PICO 10: TSA 1 (TSA, standardized rehab)	108	100(116.65)	PICO 10: HemiA 1 (Humeral Head Replacement (HemiA), standardized rehab)	26	180(119.67)	MeanDif	-80(-130.99,-29.01)	Treatment 1 Significant (P-value<.05)
Razmjou, H., 2014	Low Quality	ASES - Total: American Shoulder and Elbow Surgeon Score	12 months	PICO 10: TSA 1 (TSA, standardized rehab)	108	80(15.91)	PICO 10: HemiA 1 (Humeral Head Replacement (HemiA), standardized rehab)	26	62(18.21)	MeanDif	18(10.38,25.62)	Treatment 1 Significant (P-value<.05)
Razmjou, H., 2014	Low Quality	WOOS - Physical Subscale: Western Ontario Osteoarthritis Shoulder	24 months	PICO 10: TSA 1 (TSA, standardized rehab)	108	98(121.95)	PICO 10: HemiA 1 (Humeral Head Replacement (HemiA), standardized rehab)	26	253(137.88)	MeanDif	-155(-212.77,-97.23)	Treatment 1 Significant (P-value<.05)
Razmjou, H., 2014	Low Quality	ASES - Total: American Shoulder and Elbow Surgeon Score	24 months	PICO 10: TSA 1 (TSA, standardized rehab)	108	80(21.21)	PICO 10: HemiA 1 (Humeral Head Replacement (HemiA), standardized rehab)	26	63(18.21)	MeanDif	17(8.94,25.06)	Treatment 1 Significant (P-value<.05)

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Razmjou, H., 2014	Low Quality	RCMS - Total: Relative Constant Murley (accounts for age, sex)	24 months	PICO 10: TSA 1 (TSA, standardized rehab)	108	86(21.21)	PICO 10: HemiA 1 (Humeral Head Replacement (HemiA), standardized rehab)	26	63(26.02)	MeanDif	23(12.23,33.77)	Treatment 1 Significant (P-value<.05)
Virk, M. S., 2018	Low Quality	ASES - Total	Post-Op	PICO 10: TSA 1 (TSA)	23	85(3.00)	PICO 10: HemiA 1 (HemiA w/ Ream and Run)	21	85(4.00)	MeanDif	0(-2.10,2.10)	Not Significant (P-value>.05)
Werthel, J. D., 2018	Low Quality	Neer Rating: % Excellent or Satisfactory	5 years	PICO 10: TSA 1 (TSA)	245	75.92%	PICO 10: HemiA 1 (HemiA)	44	72.73%	RR	1.04(0.86,1.27)	Not Significant (P-value>.05)

Table 57: Total Shoulder Arthroplasty vs. Hemiarthroplasty - Function

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Gartsman, G. M., 2000	High Quality	ASES - Activities of Daily Living: pvalue, mean only	35 months	PICO 10: TSA 1 (TSA)	27	36.1(.)	PICO 10: HemiA 1 (Hemiarthroplasty)	24	34.9(.)	MeanDif	1.2(.,.)	TSA Significant (P-value<.05)
Gartsman, G. M., 2000	High Quality	UCLA - Function: pvalue, mean only	35 months	PICO 10: TSA 1 (TSA)	27	7.3(.)	PICO 10: HemiA 1 (Hemiarthroplasty)	24	6.2(.)	MeanDif	1.1(.,.)	TSA Significant (P-value<.05)
Gartsman, G. M., 2000	High Quality	Strength: pvalue, mean only	35 months	PICO 10: TSA 1 (TSA)	27	3.9(.)	PICO 10: HemiA 1 (Hemiarthroplasty)	24	3.7(.)	MeanDif	0.2(.,.)	TSA Significant (P-value<.05)
Gartsman, G. M., 2000	High Quality	Motion: pvalue, mean only	35 months	PICO 10: TSA 1 (TSA)	27	4.2(.)	PICO 10: HemiA 1 (Hemiarthroplasty)	24	4.1(.)	MeanDif	0.1(.,.)	TSA Significant (P-value<.05)
Lo, I. K., 2005	High Quality	WOOS - Sports/Recreation/Work Subscale: converted to 0-100	2 years	PICO 10: TSA 1 (TSA; standardized postop care)	20	86.1(20.80)	PICO 10: HemiA 1 (HemiA; standardized postop care)	21	75.2(28.90)	MeanDif	10.9(-4.46,26.26)	Not Significant (P-value>.05)
Lo, I. K., 2005	High Quality	WOOS - Physical Subscale: converted to 0-100	2 years	PICO 10: TSA 1 (TSA; standardized postop care)	20	91.9(12.80)	PICO 10: HemiA 1 (HemiA; standardized postop care)	21	82.7(23.50)	MeanDif	9.2(-2.31,20.71)	Not Significant (P-value>.05)
Lo, I. K., 2005	High Quality	Constant - ROM Subscale	2 years	PICO 10: TSA 1 (TSA; standardized postop care)	20	29.2(8.30)	PICO 10: HemiA 1 (HemiA; standardized postop care)	21	26.8(9.30)	MeanDif	2.4(-2.99,7.79)	Not Significant (P-value>.05)
Lo, I. K., 2005	High Quality	SF-36 Physical Component	2 years	PICO 10: TSA 1 (TSA; standardized postop care)	20	42.1(13.20)	PICO 10: HemiA 1 (HemiA; standardized postop care)	21	42.9(10.90)	MeanDif	-0.8(-8.23,6.63)	Not Significant (P-value>.05)
Clinton, J., 2007	Low Quality	SST: Simple Shoulder Test	12 months	PICO 10: TSA 1 (TSA)	25	9.64(1.63)	PICO 10: HemiA 1 (HemiA w/ Ream and Run)	22	7.77(3.12)	MeanDif	1.87(0.42,3.32)	Treatment 1 Significant (P-value<.05)
Clinton, J., 2007	Low Quality	SST: Simple Shoulder Test	30 months	PICO 10: TSA 1 (TSA)	26	9.58(2.80)	PICO 10: HemiA 1 (HemiA w/ Ream and Run)	24	9.42(2.19)	MeanDif	0.16(-1.23,1.55)	Not Significant (P-value>.05)
Edwards, T. B., 2003	Low Quality	Constant - Strength Subscale: mean, auth pvalue only	44 months	PICO 10: TSA 1 (TSA; postop rehab)	601	8.8(.)	PICO 10: HemiA 1 (HemiA; postop rehab)	89	9(.)	MeanDif	-0.2(.,.)	Not Significant (P-value>.05)
Edwards, T. B., 2003	Low Quality	Constant - ROM Subscale: mean, auth pvalue only	44 months	PICO 10: TSA 1 (TSA; postop rehab)	601	31.3(.)	PICO 10: HemiA 1 (HemiA; postop rehab)	89	27.3(.)	MeanDif	4(.,.)	TSA Significant (P-value<.05)
Edwards, T. B., 2003	Low Quality	Constant - Activities Subscale: mean, auth pvalue only	44 months	PICO 10: TSA 1 (TSA; postop rehab)	601	17.3(.)	PICO 10: HemiA 1 (HemiA; postop rehab)	89	15.3(.)	MeanDif	2(.,.)	TSA Significant (P-value<.05)
Gowd, A. K., 2019	Low Quality	SF-12 Physical Component Score	68 months	PICO 10: TSA 1 (TSA with standard rehabilitation)	20	47(10.00)	PICO 10: HemiA 1 (Hemiarthroplasty with Ream and Run)	18	48.8(9.80)	MeanDif	-1.8(-8.10,4.50)	Not Significant (P-value>.05)
Razmjou, H., 2014	Low Quality	Strength: Tensiometer with shoulder at 90 deg o elevation in plane with scapula; clinician pulled down	6 months	PICO 10: TSA 1 (TSA, standardized rehab)	108	6.7(3.71)	PICO 10: HemiA 1 (Humeral Head Replacement (HemiA), standardized rehab)	26	5.4(3.90)	MeanDif	1.3(-0.35,2.95)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Razmjou, H., 2014	Low Quality	ROM: Abduction	6 months	PICO 10: TSA 1 (TSA, standardized rehab)	108	101(31.81)	PICO 10: HemiA 1 (Humeral Head Replacement (HemiA), standardized rehab)	26	83(36.42)	MeanDif	18(2.77,33.23)	Treatment 1 Significant (P-value<.05)
Razmjou, H., 2014	Low Quality	ROM: Flexion	6 months	PICO 10: TSA 1 (TSA, standardized rehab)	108	116(37.12)	PICO 10: HemiA 1 (Humeral Head Replacement (HemiA), standardized rehab)	26	98(33.82)	MeanDif	18(3.23,32.77)	Treatment 1 Significant (P-value<.05)
Razmjou, H., 2014	Low Quality	ROM: External Rotation	6 months	PICO 10: TSA 1 (TSA, standardized rehab)	108	42(15.91)	PICO 10: HemiA 1 (Humeral Head Replacement (HemiA), standardized rehab)	26	40(15.61)	MeanDif	2(-4.71,8.71)	Not Significant (P-value>.05)
Razmjou, H., 2014	Low Quality	Strength: Tensiometer with shoulder at 90 deg o elevation in plane with scapula; clinician pulled down	12 months	PICO 10: TSA 1 (TSA, standardized rehab)	108	8.5(3.71)	PICO 10: HemiA 1 (Humeral Head Replacement (HemiA), standardized rehab)	26	6.4(3.64)	MeanDif	2.1(0.54,3.66)	Treatment 1 Significant (P-value<.05)
Razmjou, H., 2014	Low Quality	ROM: Abduction	12 months	PICO 10: TSA 1 (TSA, standardized rehab)	108	115(37.12)	PICO 10: HemiA 1 (Humeral Head Replacement (HemiA), standardized rehab)	26	93(36.42)	MeanDif	22(6.35,37.65)	Treatment 1 Significant (P-value<.05)
Razmjou, H., 2014	Low Quality	ROM: External Rotation	12 months	PICO 10: TSA 1 (TSA, standardized rehab)	108	47(15.91)	PICO 10: HemiA 1 (Humeral Head Replacement (HemiA), standardized rehab)	26	40(15.61)	MeanDif	7(0.29,13.71)	Treatment 1 Significant (P-value<.05)
Razmjou, H., 2014	Low Quality	ROM: Flexion	12 months	PICO 10: TSA 1 (TSA, standardized rehab)	108	130(31.81)	PICO 10: HemiA 1 (Humeral Head Replacement (HemiA), standardized rehab)	26	104(33.82)	MeanDif	26(11.68,40.32)	Treatment 1 Significant (P-value<.05)
Razmjou, H., 2014	Low Quality	ROM: Flexion	24 months	PICO 10: TSA 1 (TSA, standardized rehab)	108	131(31.81)	PICO 10: HemiA 1 (Humeral Head Replacement (HemiA), standardized rehab)	26	107(36.42)	MeanDif	24(8.77,39.23)	Treatment 1 Significant (P-value<.05)
Razmjou, H., 2014	Low Quality	ROM: External Rotation	24 months	PICO 10: TSA 1 (TSA, standardized rehab)	108	47(15.91)	PICO 10: HemiA 1 (Humeral Head Replacement (HemiA), standardized rehab)	26	42(18.21)	MeanDif	5(-2.62,12.62)	Not Significant (P-value>.05)
Razmjou, H., 2014	Low Quality	ROM: Abduction	24 months	PICO 10: TSA 1 (TSA, standardized rehab)	108	119(31.81)	PICO 10: HemiA 1 (Humeral Head Replacement (HemiA), standardized rehab)	26	84(36.42)	MeanDif	35(19.77,50.23)	Treatment 1 Significant (P-value<.05)
Razmjou, H., 2014	Low Quality	Strength: Tensiometer with shoulder at 90 deg o elevation	24 months	PICO 10: TSA 1 (TSA, standardized rehab)	108	9.6(3.71)	PICO 10: HemiA 1 (Humeral Head Replacement (HemiA), standardized rehab)	26	6.8(4.42)	MeanDif	2.8(0.96,4.64)	Treatment 1 Significant (P-value<.05)
Virk, M. S., 2018	Low Quality	ROM: Active Forward Elevation	Post-Op	PICO 10: TSA 1 (TSA)	23	154(5.00)	PICO 10: HemiA 1 (HemiA w/ Ream and Run)	21	139(6.00)	MeanDif	15(11.72,18.28)	Treatment 1 Significant (P-value<.05)
Virk, M. S., 2018	Low Quality	ROM: External Rotation	Post-Op	PICO 10: TSA 1 (TSA)	23	58(3.00)	PICO 10: HemiA 1 (HemiA w/ Ream and Run)	21	47(4.00)	MeanDif	11(8.90,13.10)	Treatment 1 Significant (P-value<.05)
Virk, M. S., 2018	Low Quality	SST: Simple Shoulder Test	Post-Op	PICO 10: TSA 1 (TSA)	23	9.9(0.50)	PICO 10: HemiA 1 (HemiA w/ Ream and Run)	21	9.9(3.00)	MeanDif	0(-1.30,1.30)	Not Significant (P-value>.05)
Werthel, J. D., 2018	Low Quality	ROM: External Rotation pvalue only	5 years	PICO 10: TSA 1 (TSA)	329	. %	PICO 10: HemiA 1 (HemiA)	74	. %	Author Reported	pval = 0.378	Not Significant (P-value>.05)
Werthel, J. D., 2018	Low Quality	ROM: Internal Rotation pvalue only	5 years	PICO 10: TSA 1 (TSA)	329	. %	PICO 10: HemiA 1 (HemiA)	74	. %	Author Reported	pval = 0.799	Not Significant (P-value>.05)
Werthel, J. D., 2018	Low Quality	ROM: Abduction pvalue only	5 years	PICO 10: TSA 1 (TSA)	329	. %	PICO 10: HemiA 1 (HemiA)	74	. %	Author Reported	pval = 0.223	Not Significant (P-value>.05)

Table 58: Total Shoulder Arthroplasty vs. Hemiarthroplasty- Other

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Gartsman, G. M., 2000	High Quality	Operation Time (min): pvalue, mean only	Intra-Op	PICO 10: TSA 1 (TSA)	27	98(.)	PICO 10: HemiA 1 (Hemiarthroplasty)	24	36(.)	MeanDif	62(.,.)	HemiA Significant (P-value<.05)
Werthel, J. D., 2018	Low Quality	Anesthesia Time (min): mean, pvalue only	Intra-Op	PICO 10: TSA 1 (TSA)	329	270(.)	PICO 10: HemiA 1 (HemiA)	74	253(.)	MeanDif	17(.,.)	HemiA Significant (P-value<.05)
Werthel, J. D., 2018	Low Quality	Operation Time (min): mean, pvalue only	Intra-Op	PICO 10: TSA 1 (TSA)	329	217(.)	PICO 10: HemiA 1 (HemiA)	74	197(.)	MeanDif	20(.,.)	HemiA Significant (P-value<.05)

Table 59: Total Shoulder Arthroplasty vs. Hemiarthroplasty - Pain

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Gartsman, G. M., 2000	High Quality	ASES - Pain: pvalue, mean only	35 months	PICO 10: TSA 1 (TSA)	27	41.1(.)	PICO 10: HemiA 1 (Hemiarthroplasty)	24	30.2(.)	MeanDif	10.9(.,.)	TSA Significant (P-value<.05)
Gartsman, G. M., 2000	High Quality	UCLA - Pain: pvalue, mean only	35 months	PICO 10: TSA 1 (TSA)	27	8.2(.)	PICO 10: HemiA 1 (Hemiarthroplasty)	24	6(.)	MeanDif	2.2(.,.)	TSA Significant (P-value<.05)
Lo, I. K., 2005	High Quality	McGill Pain VAS	2 years	PICO 10: TSA 1 (TSA; standardized postop care)	20	6.1(13.50)	PICO 10: HemiA 1 (HemiA; standardized postop care)	21	13.9(27.40)	MeanDif	-7.8(-20.93,5.33)	Not Significant (P-value>.05)
Lo, I. K., 2005	High Quality	McGill Pain Questionnaire	2 years	PICO 10: TSA 1 (TSA; standardized postop care)	20	0.9(1.40)	PICO 10: HemiA 1 (HemiA; standardized postop care)	21	2.7(6.80)	MeanDif	-1.8(-4.77,1.17)	Not Significant (P-value>.05)
Edwards, T. B., 2003	Low Quality	Constant - Pain Subscale: mean, auth pvalue only	44 months	PICO 10: TSA 1 (TSA; postop rehab)	601	12.9(.)	PICO 10: HemiA 1 (HemiA; postop rehab)	89	12.5(.)	MeanDif	0.4(.,.)	TSA Significant (P-value<.05)
Garcia, G. H., 2016	Low Quality	VAS	62 months	PICO 10: TSA 1 (TSA; deltopectoral)	40	0.6(1.00)	PICO 10: HemiA 1 (HemiA; deltopectoral)	40	2.2(2.90)	MeanDif	-1.6(-2.55,-0.65)	Treatment 1 Significant (P-value<.05)
Iannotti, J. P., 2003	Low Quality	VAS	46 months	PICO 10: TSA 1 (TSA with glenoid cement, pegged OR keeled)	95	14(194.94)	PICO 10: HemiA 1 (HemiA)	33	20(137.87)	MeanDif	-6(-67.23,55.23)	Not Significant (P-value>.05)
Orfaly, R. M., 2003	Low Quality	Change in VAS: Pvalue Only	2 years	PICO 10: TSA 1 (beach chair position, general anesthesia, deltopectoral approach)	37	. %	PICO 10: HemiA 1 (beach chair position, general anesthesia, deltopectoral approach)	28	. %	Author Reported	pval < 0.05	TSA Significant (P-value<.05)
Virk, M. S., 2018	Low Quality	VAS	Post-Op	PICO 10: TSA 1 (TSA)	23	0.9(0.30)	PICO 10: HemiA 1 (HemiA w/ Ream and Run)	21	1.4(0.40)	MeanDif	-0.5(-0.71,-0.29)	Treatment 1 Significant (P-value<.05)
Werthel, J. D., 2018	Low Quality	Pain: pvalue only	5 years	PICO 10: TSA 1 (TSA)	329	. %	PICO 10: HemiA 1 (HemiA)	74	. %	Author Reported	pval = 0.282	Not Significant (P-value>.05)

Table 60: Total Shoulder Arthroplasty vs. Hemiarthroplasty - Patient Satisfaction

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Edwards, T. B., 2003	Low Quality	Pt Satisfaction Subjective Score (Excellent/Good)	44 months	PICO 10: TSA 1 (TSA; postop rehab)	601	93.34%	PICO 10: HemiA 1 (HemiA; postop rehab)	89	86.52%	RR	1.08(0.99,1.17)	Not Significant (P-value>.05)
Gowd, A. K., 2019	Low Quality	Good or Excellent Satisfaction	68 months	PICO 10: TSA 1 (TSA with standard rehabilitation)	20	100.00%	PICO 10: HemiA 1 (Hemiarthroplasty with Ream and Run)	18	94.44%	RD	0.06(-0.05,0.16)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Iannotti, J. P., 2003	Low Quality	Patient Satisfaction	46 months	PICO 10: TSA 1 (TSA with glenoid cement, pegged OR keeled)	95	15(214.43)	PICO 10: HemiA 1 (HemiA)	33	18(137.87)	MeanDif	-3(-66.81,60.81)	Not Significant (P-value>.05)

Table 61: Total Shoulder Arthroplasty vs. Hemiarthroplasty - Quality of Life

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Gartsman, G. M., 2000	High Quality	UCLA - Pt Satisfaction: pvalue, mean only	35 minutes	PICO 10: TSA 1 (TSA)	27	3.8(.)	PICO 10: HemiA 1 (Hemiarthroplasty)	24	3.2(.)	MeanDif	0.6(...)	TSA Significant (P-value<.05)
Lo, I. K., 2005	High Quality	WOOS - Emotions Subscale: converted to 0-100	2 years	PICO 10: TSA 1 (TSA; standardized postop care)	20	97(4.60)	PICO 10: HemiA 1 (HemiA; standardized postop care)	21	87.1(23.70)	MeanDif	9.9(-0.44,20.24)	Not Significant (P-value>.05)
Lo, I. K., 2005	High Quality	WOOS - Lifestyle Subscale: converted to 0-100	2 years	PICO 10: TSA 1 (TSA; standardized postop care)	20	89.7(13.80)	PICO 10: HemiA 1 (HemiA; standardized postop care)	21	82.5(25.40)	MeanDif	7.2(-5.23,19.63)	Not Significant (P-value>.05)
Lo, I. K., 2005	High Quality	SF-36 Mental Component	2 years	PICO 10: TSA 1 (TSA; standardized postop care)	20	58.4(9.10)	PICO 10: HemiA 1 (HemiA; standardized postop care)	21	57.4(10.90)	MeanDif	1(-5.14,7.14)	Not Significant (P-value>.05)
Garcia, G. H., 2016	Low Quality	% Satisfaction with Surgery: Good/Excellent	62 months	PICO 10: TSA 1 (TSA; deltopectoral)	40	100.00%	PICO 10: HemiA 1 (HemiA; deltopectoral)	40	70.00%	RD	0.30(0.16,0.44)	Treatment 1 Significant (P-value<.05)
Garcia, G. H., 2016	Low Quality	Satisfaction with Sports: Good/Excellent	62 months	PICO 10: TSA 1 (TSA; deltopectoral)	40	95.00%	PICO 10: HemiA 1 (HemiA; deltopectoral)	40	57.50%	RR	1.65(1.25,2.18)	Treatment 1 Significant (P-value<.05)
Gowd, A. K., 2019	Low Quality	SF-12 Mental Component Score	68 months	PICO 10: TSA 1 (TSA with standard rehabilitation)	20	54.3(8.40)	PICO 10: HemiA 1 (Hemiarthroplasty with Ream and Run)	18	56.2(7.80)	MeanDif	-1.9(-7.05,3.25)	Not Significant (P-value>.05)
Iannotti, J. P., 2003	Low Quality	Quality of Life	46 months	PICO 10: TSA 1 (TSA with glenoid cement, pegged OR keeled)	95	12(185.19)	PICO 10: HemiA 1 (HemiA)	33	17(155.10)	MeanDif	-5(-69.71,59.71)	Not Significant (P-value>.05)
Krukenberg, A., 2018	Low Quality	SSV - Subjective Shoulder Value: mean pvalue only	2 years	PICO 10: TSA 1 (Stemless TSA with Sidus Stem-Free Shoulder System 2-component system)	73	0.871(.)	PICO 10: HemiA 1 (Stemless HemiA with Sidus Stem-Free Shoulder System 2-component system)	32	0.752(.)	MeanDif	0.119(...)	TSA Significant (P-value<.05)
Krukenberg, A., 2018	Low Quality	% Very Satisfied	2 years	PICO 10: TSA 1 (Stemless TSA with Sidus Stem-Free Shoulder System 2-component system)	73	90.41%	PICO 10: HemiA 1 (Stemless HemiA with Sidus Stem-Free Shoulder System 2-component system)	32	53.13%	RR	1.70(1.22,2.38)	Treatment 1 Significant (P-value<.05)
Werthel, J. D., 2018	Low Quality	Pt Satisfaction (% better/much better vs preop)	5 years	PICO 10: TSA 1 (TSA)	245	88.57%	PICO 10: HemiA 1 (HemiA)	44	81.82%	RR	1.08(0.94,1.25)	Not Significant (P-value>.05)

TSA: Glenoid Component – Pegged vs. Keeled

Summary of Findings:

	High Quality		Low Quality	
	Edwards, T. B., 2010	Gartsman, G. M., 2005	Throckmorton, T. W., 2010	Lazarus, M. D., 2002
<p>↑ Better Outcomes</p> <p>↓ Worse Outcomes</p> <p>● Not Significant</p>				
Function				
ROM: Internal Rotation (pvalue only)			●	
ROM: Forward Elevation pvalue only			●	
ROM: External Rotation pvalue only			●	
Pain				
Pain Scale (pvalue only)			●	
Adverse events				
Any Complication / Adverse Event			●	
Radiolucent Lines (%): Glenoid Component			●	
Radiolucent Line Score (RLS)				↑
Radiolucent Lines (%): At least Grade 2	↑	↑		
Failure %	●			
"Worse Seating" For Glenoid Component				●

Meta-Analysis: Radiolucent Lines

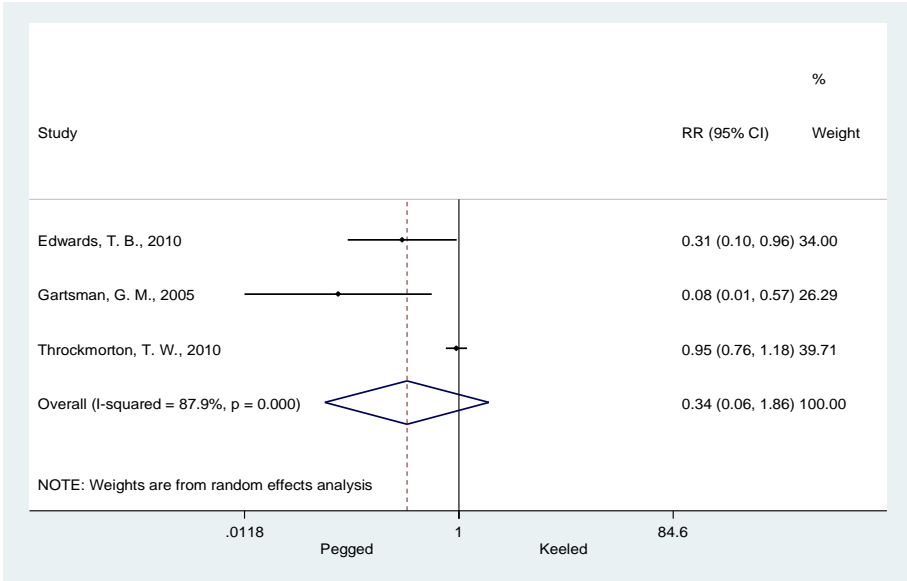


Table 62: TSA: Glenoid Component - Pegged vs. Keeled - Adverse Events

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Edwards, T. B., 2010	High Quality	Radiolucent Lines (%): At least Grade 2	Post-Op	PICO 10: TSA 1 (pegged glenoid component)	21	0.00%	PICO 10: TSA 2 (keeled glenoid component)	26	15.38%	RD	-0.15(-0.29,-0.02)	Treatment 1 Significant (P-value<.05)
Edwards, T. B., 2010	High Quality	Failure %	26 months	PICO 10: TSA 1 (pegged glenoid component)	21	0.00%	PICO 10: TSA 2 (keeled glenoid component)	26	7.69%	RD	-0.08(-0.18,0.03)	Not Significant (P-value>.05)
Edwards, T. B., 2010	High Quality	Radiolucent Lines (%): At least Grade 2	26 months	PICO 10: TSA 1 (pegged glenoid component)	21	14.29%	PICO 10: TSA 2 (keeled glenoid component)	26	46.15%	RR	0.31(0.10,0.96)	Treatment 1 Significant (P-value<.05)
Gartsman, G. M., 2005	High Quality	Radiolucent Line Score 2 or Higher	6 weeks	PICO 10: TSA 1 (Pegged Glenoid Component)	20	5.00%	PICO 10: TSA 2 (Keeled Glenoid Component)	23	60.87%	RR	0.08(0.01,0.57)	Treatment 1 Significant (P-value<.05)
Lazarus, M. D., 2002	Low Quality	Radiolucency Score	Post-Op	PICO 10: TSA 1 (pegged glenoid component)	289	1.3(0.90)	PICO 10: TSA 2 (keeled glenoid component)	39	1.8(0.90)	MeanDif	-0.5(-0.80,-0.20)	Treatment 1 Significant (P-value<.05)
Lazarus, M. D., 2002	Low Quality	"Worse Seating" For Glenoid Component: 4 or 5 on a 0-5 point scale	Post-Op	PICO 10: TSA 1 (pegged glenoid component)	289	29.41%	PICO 10: TSA 2 (keeled glenoid component)	39	38.46%	RR	0.76(0.49,1.18)	Not Significant (P-value>.05)
Throckmorton, T. W., 2010	Low Quality	Any Complications	Post-Op	PICO 10: TSA 1 (Pegged Glenoid Component)	50	6.00%	PICO 10: TSA 2 (Keeled Glenoid Component)	50	6.00%	RR	1.00(0.21,4.72)	Not Significant (P-value>.05)
Throckmorton, T. W., 2010	Low Quality	Radiolucent Lines (%): Glenoid component	Post-Op	PICO 10: TSA 1 (Pegged Glenoid Component)	50	32.00%	PICO 10: TSA 2 (Keeled Glenoid Component)	50	22.00%	RR	1.45(0.75,2.81)	Not Significant (P-value>.05)
Throckmorton, T. W., 2010	Low Quality	Radiolucent Lines (%): Glenoid component	48 months	PICO 10: TSA 1 (Pegged Glenoid Component)	50	74.00%	PICO 10: TSA 2 (Keeled Glenoid Component)	50	78.00%	RR	0.95(0.76,1.18)	Not Significant (P-value>.05)

Table 63: TSA: Glenoid Component - Pegged vs. Keeled - Function

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Throckmorton, T. W., 2010	Low Quality	ROM: Forward Elevation (significance only)	Post-Op	PICO 10: TSA 1 (Pegged Glenoid Component)	50	. %	PICO 10: TSA 2 (Keeled Glenoid Component)	50	. %	Author Reported	author reported NS	Not Significant (P-value>.05)
Throckmorton, T. W., 2010	Low Quality	ROM: Internal Rotation (significance only)	Post-Op	PICO 10: TSA 1 (Pegged Glenoid Component)	50	. %	PICO 10: TSA 2 (Keeled Glenoid Component)	50	. %	Author Reported	author reported NS	Not Significant (P-value>.05)
Throckmorton, T. W., 2010	Low Quality	ROM: External Rotation (significance only)	Post-Op	PICO 10: TSA 1 (Pegged Glenoid Component)	50	. %	PICO 10: TSA 2 (Keeled Glenoid Component)	50	. %	Author Reported	author reported NS	Not Significant (P-value>.05)

Table 64: TSA: Glenoid Component - Pegged vs. Keeled - Pain

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Throckmorton, T. W., 2010	Low Quality	Pain Scale (1-5): significance only	Post-Op	PICO 10: TSA 1 (Pegged Glenoid Component)	50	. %	PICO 10: TSA 2 (Keeled Glenoid Component)	50	. %	Author Reported	author reported NS	Not Significant (P-value>.05)

Arthroplasty: Stemmed vs. Resurfacing

Summary of Findings:

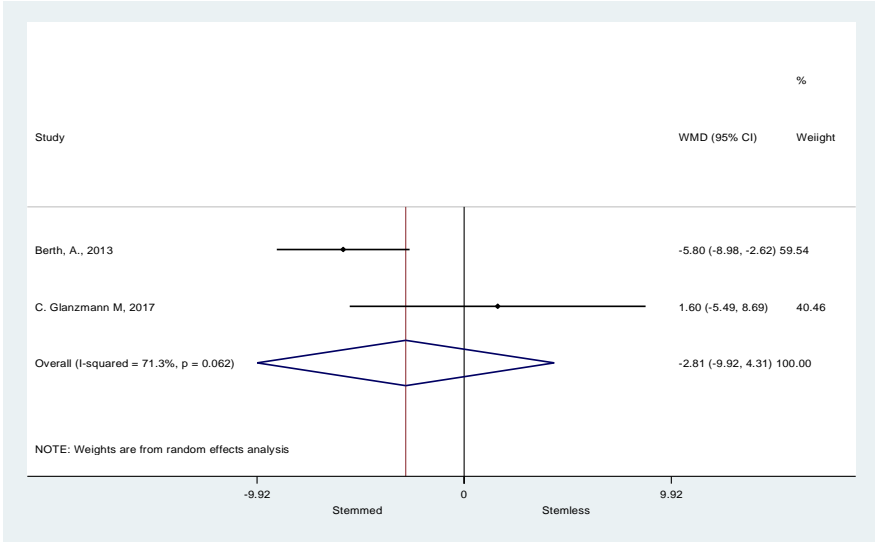
Hemiarthroplasty

	Low Quality			
	Odquist, M., 2018	Rasmussen, J. V., 2018	Lebon, J., 2014	Fourman, M., 2019
↑ Better Outcomes ↓ Worse Outcomes • Not Significant				
Composite				
Constant - Total			•	
qDASH: Quick Disability Arm Shoulder and Hand Score			•	•
WOOS - Total: pvalue only	•			
ASES				•
Function				
ROM: External Rotation			•	•
ROM: Anterior Elevation			•	
Pain				
Pain Scale			↑	↓
Quality of life				
EuroQol 5 dimension 3L: pvalue only	•			
SSV - Subjective Shoulder Value			•	
Adverse events				
Revision Hazard Ratio	•			
10 Year Hazard Ratio for Revision: TSA is Reference		↓		
10-Year Survival Rate (%)		↑		
Patient Satisfaction				
Satisfied/Neutral	•			

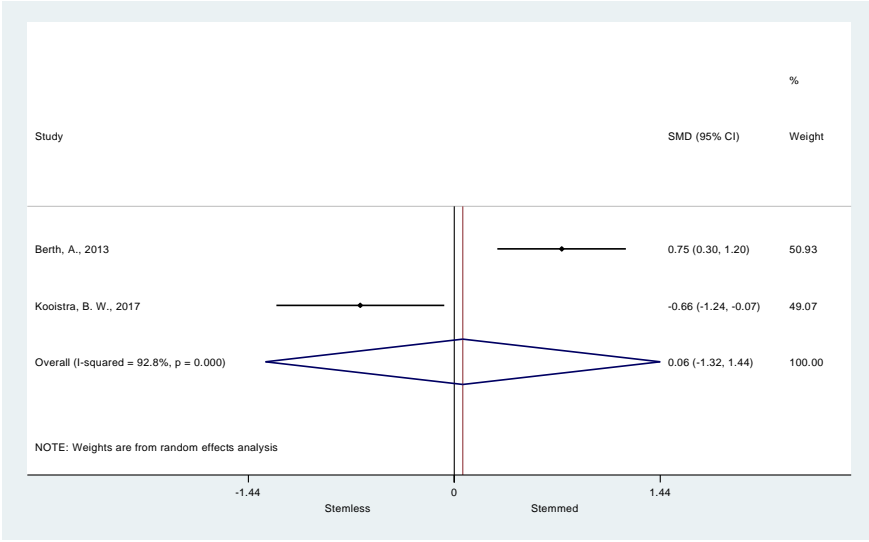
TSA – Humeral Component

	Low Quality			
	Berth, A., 2013	C. Glanzmann M, 2017	Kooistra, B. W., 2017	Rasmussen, J.V., 2019
↑ Better Outcomes ↓ Worse Outcomes • Not Significant				
Composite				
Constant - Total	↓	•		
Constant - Total: pvalue only			•	
DASH: Disabilities of the Arm Shoulder and Hand	•			
DASH: pvalue only			•	
Oxford Shoulder Score: pvalue only			•	
qDASH: Quick Disability Arm Shoulder and Hand Score		•		
SPADI Total: Shoulder Pain and Disability Index		•		
Function				
ROM: Abduction pvalue only			•	
SST - Simple Shoulder Test: pvalue only			•	
ROM: External Rotation	↓			
Constant - ROM Subscale	↓			
Constant - Strength Subscale	•			
Constant - Activities Subscale	•			
ROM: Abduction	↓			
ROM: Forward Elevation pvalue only			•	
ROM: Anteversion	↓			
Other				
Operation Time (min)		↓	↑	
Pain				
Pain Scale	•			
Adverse events				
Radiolucent Line Score: pvalue only			•	
Operation Time (min)	↓			
Post-op Hospital Stay (Days)	•			
Estimated Blood Loss (ml)	↓			
Revision				•

Meta-Analysis: Constant Score - Total



Meta-Analysis: Operation Time



Meta-Analysis: DASH/qDASH

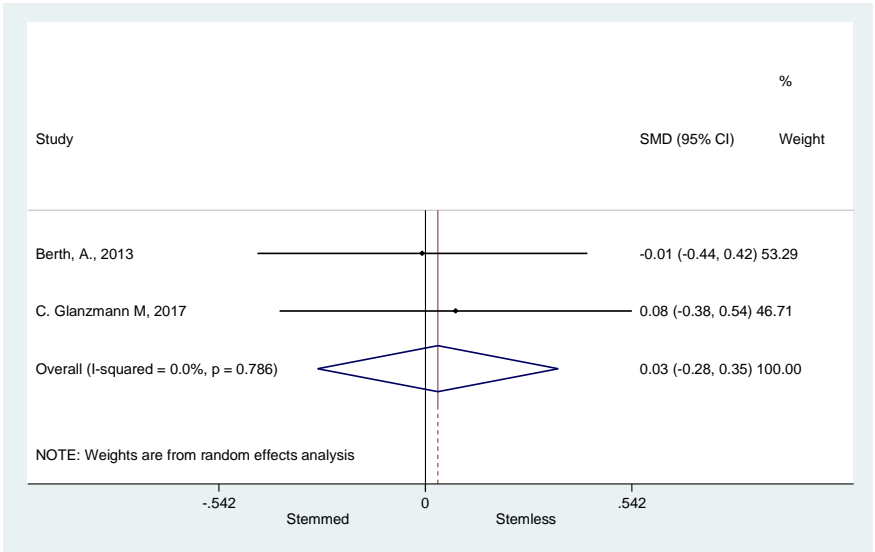


Table 65: Hemiarthroplasty: Stemmed vs. Resurfacing - Adverse Events

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Odquist, M., 2018	Low Quality	Revision Hazard Ratio	Post-Op	PICO 10: HemiA 1 (Stemmed HemiA)	670	. %	PICO 10: HemiA 2 (Stemless HemiA (aka resurfacing HA))	280	. %	Hazard Ratio(Author Reported)	0.7(0.45,1.07)	Not Significant (P-value>.05)
Rasmussen, J. V., 2018	Low Quality	10 Year Hazard Ratio for Revision: TSA is Reference	10 years	PICO 10: HemiA 1 (Stemmed HemiA)	1587	. %	PICO 10: HemiA 2 (Stemless HemiA (aka resurfacing HA))	1923	. %	Hazard Ratio(Author Reported)	1.4(1.00,2.00)	TSA Significant (P-value<.05)
Rasmussen, J. V., 2018	Low Quality	10-Year Survival Rate (%)	10 years	PICO 10: HemiA 1 (Stemmed HemiA)	1587	93.01%	PICO 10: HemiA 2 (Stemless HemiA (aka resurfacing HA))	1923	85.02%	RR	1.09(1.07,1.12)	Treatment 1 Significant (P-value<.05)

Table 66: Hemiarthroplasty: Stemmed vs. Resurfacing - Composite

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Odquist, M., 2018	Low Quality	WOOS - Total: pvalue only	5 years	PICO 10: HemiA 1 (Stemmed HemiA)	508	. %	PICO 10: HemiA 2 (Stemless HemiA (aka resurfacing HA))	204	. %	Author Reported	pval 0.1	Not Significant (P-value>.05)
Lebon, J., 2014	Low Quality	qDASH: Quick Disability Arm Shoulder and Hand Score	Post-Op	PICO 10: HemiA 1 (Anatomic Stemmed Hemiarthroplasty; standard postop rehab)	37	13(16.00)	PICO 10: HemiA 2 (Humeral Head Replacement Stemless; standard postop rehab)	41	17(15.00)	MeanDif	-4(-10.90,2.90)	Not Significant (P-value>.05)
Lebon, J., 2014	Low Quality	Constant - Total	Post-Op	PICO 10: HemiA 1 (Anatomic Stemmed Hemiarthroplasty; standard postop rehab)	37	71(17.00)	PICO 10: HemiA 2 (Humeral Head Replacement Stemless; standard postop rehab)	41	77(13.00)	MeanDif	-6(-12.77,0.77)	Not Significant (P-value>.05)
Fourman, M., 2019	Low Quality	ASES Total	Post-Op	PICO 10: HemiA (Stemmed)	47	45.1 (14.8)	PICO 10: HemiA 2 (Humeral Head Replacement Stemless)	106	52.2 (23.7)	MeanDif	-7.1 (-14.5, 0.30)	Not Significant (P-value>.05)
Fourman, M., 2019	Low Quality	qDASH: Quick Disability Arm Shoulder and Hand Score	Post-Op	PICO 10: HemiA (Stemmed)	47	46.0 (10.6)	PICO 10: HemiA 2 (Humeral Head Replacement Stemless)	106	45.5 (10.5)	MeanDif	-0.5 (-3.1, 4.1)	Not Significant (P-value>.05)

Table 67: Hemiarthroplasty: Stemmed vs. Resurfacing - Function

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Lebon, J., 2014	Low Quality	ROM: External Rotation	Post-Op	PICO 10: HemiA 1 (Anatomic Stemmed Hemiarthroplasty; standard postop rehab)	37	39(19.00)	PICO 10: HemiA 2 (Humeral Head Replacement Stemless; standard postop rehab)	41	45(18.00)	MeanDif	-6(-14.24,2.24)	Not Significant (P-value>.05)
Lebon, J., 2014	Low Quality	ROM: Anterior Elevation	Post-Op	PICO 10: HemiA 1 (Anatomic Stemmed Hemiarthroplasty; standard postop rehab)	37	141(32.00)	PICO 10: HemiA 2 (Humeral Head Replacement Stemless; standard postop rehab)	41	153(23.00)	MeanDif	-12(-24.49,0.49)	Not Significant (P-value>.05)
Fourman, M., 2019	Low Quality	ROM: External Rotation Scale	Post-Op	PICO 10: HemiA (Stemmed)	47	3.2 (1.0)	PICO 10: HemiA 2 (Humeral Head Replacement Stemless)	106	3.3 (1.0)	MeanDif	-0.1 (-0.44, 2.5)	Not Significant (P-value>.05)

Table 68: Hemiarthroplasty: Stemmed vs. Resurfacing - Pain

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Lebon, J., 2014	Low Quality	VAS	Post-Op	PICO 10: HemiA 1 (Anatomic Stemmed Hemiarthroplasty; standard postop rehab)	37	0.6(1.00)	PICO 10: HemiA 2 (Humeral Head Replacement Stemless; standard postop rehab)	41	1.3(2.00)	MeanDif	-0.7(-1.39,-0.01)	Treatment 1 Significant (P-value<.05)
Fourman, M., 2019	Low Quality	ASES Pain	Post-Op	PICO 10: HemiA (Stemmed)	47	25.2 (29.5)	PICO 10: HemiA 2 (Humeral Head Replacement Stemless)	106	38.5 (29.5)	MeanDif	-13.3(-20,-6.6)	Treatment 2 Significant (P-value<.05)

Table 69: Hemiarthroplasty: Stemmed vs. Resurfacing - Patient Satisfaction

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Odquist, M., 2018	Low Quality	Satisfied/Neutral	5 years	PICO 10: HemiA 1 (Stemmed HemiA)	544	74.08%	PICO 10: HemiA 2 (Stemless HemiA (aka resurfacing HA))	220	74.09%	RR	1.00(0.91,1.10)	Not Significant (P-value>.05)

Table 70: Hemiarthroplasty: Stemmed vs. Resurfacing - Quality of Life

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Odquist, M., 2018	Low Quality	EuroQol 5 dimension 3L: pvalue only	5 years	PICO 10: HemiA 1 (Stemmed HemiA)	513	. %	PICO 10: HemiA 2 (Stemless HemiA (aka resurfacing HA))	209	. %	Author Reported	pval 0.4	Not Significant (P-value>.05)
Lebon, J., 2014	Low Quality	SSV - Subjective Shoulder Value	Post-Op	PICO 10: HemiA 1 (Anatomic Stemmed Hemiarthroplasty; standard postop rehab)	37	80(14.00)	PICO 10: HemiA 2 (Humeral Head Replacement Stemless; standard postop rehab)	41	80(13.00)	MeanDif	0(-6.02,6.02)	Not Significant (P-value>.05)

Table 71: TSA: Humeral Component - Stemmed vs. Stemless - Adverse Events

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Rasmussen, J.V., 2019	Low Quality	Revision	Post-Op	PICO 10: TSA 1 (Stemmed Humeral Component during TSA)	4398	. %	PICO 10: TSA 2 (Stemless Humeral Component during TSA)	761	. %	Odds Ratio	1.00 (0.63, 1.61)	Not Significant (P-value>.05)
Berth, A., 2013	Low Quality	Operation Time (min)	Intra-Op	PICO 10: TSA 1 (Stemmed Humeral Component during TSA)	41	106.2(23.30)	PICO 10: TSA 2 (Stemless Humeral Component during TSA)	41	91.5(14.50)	MeanDif	14.7(6.30,23.10)	Treatment 2 Significant (P-value<.05)
Berth, A., 2013	Low Quality	Post-op Hospital Stay (Days)	At Discharge	PICO 10: TSA 1 (Stemmed Humeral Component during TSA)	41	6.9(0.82)	PICO 10: TSA 2 (Stemless Humeral Component during TSA)	41	6.7(0.72)	MeanDif	0.2(-0.13,0.53)	Not Significant (P-value>.05)
Berth, A., 2013	Low Quality	Estimated Blood Loss (ml)	Intra-Op	PICO 10: TSA 1 (Stemmed Humeral Component during TSA)	41	593.4(147.00)	PICO 10: TSA 2 (Stemless Humeral Component during TSA)	41	496.3(116.30)	MeanDif	97.1(39.72,154.48)	Treatment 2 Significant (P-value<.05)
Kooistra, B. W., 2017	Low Quality	Radiolucent Line Score (Glenoid): pvalue only	Post-Op	PICO 10: TSA 1 (Stemmed TSA (normal))	29	. %	PICO 10: TSA 2 (Stemless TSA (Humeral Head Replacement))	20	. %	Author Reported	pval = 0.71	Not Significant (P-value>.05)

Table 72: TSA: Humeral Component - Stemmed vs. Stemless - Composite

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Berth, A., 2013	Low Quality	DASH: Disabilities of the Arm Shoulder and Hand	31 months	PICO 10: TSA 1 (Stemmed Humeral Component during TSA)	41	47.3(12.40)	PICO 10: TSA 2 (Stemless Humeral Component during TSA)	41	47.4(12.10)	MeanDif	-0.1(-5.40,5.20)	Not Significant (P-value>.05)
Berth, A., 2013	Low Quality	Constant - Total	31 months	PICO 10: TSA 1 (Stemmed Humeral Component during TSA)	41	48.9(7.40)	PICO 10: TSA 2 (Stemless Humeral Component during TSA)	41	54.7(7.30)	MeanDif	-5.8(-8.98,-2.62)	Treatment 2 Significant (P-value<.05)
C. Glanzmann M, 2017	Low Quality	SPADI: Shoulder Pain and Disability Index	6 months	PICO 10: TSA 1 (Stemmed Humeral Component during TSA)	36	79.7(18.00)	PICO 10: TSA 2 (Stemless Humeral Component during TSA (aka humeral head resurfacing))	36	76.4(19.60)	MeanDif	3.3(-5.39,11.99)	Not Significant (P-value>.05)
C. Glanzmann M, 2017	Low Quality	Constant - Total	6 months	PICO 10: TSA 1 (Stemmed Humeral Component during TSA)	37	66.9(11.80)	PICO 10: TSA 2 (Stemless Humeral Component during TSA (aka humeral head resurfacing))	34	64(15.40)	MeanDif	2.9(-3.52,9.32)	Not Significant (P-value>.05)
C. Glanzmann M, 2017	Low Quality	qDASH: Quick Disabilities of the Arm, Shoulder and Hand	6 months	PICO 10: TSA 1 (Stemmed Humeral Component during TSA)	36	30.2(18.90)	PICO 10: TSA 2 (Stemless Humeral Component during TSA (aka humeral head resurfacing))	36	28.4(18.70)	MeanDif	1.8(-6.89,10.49)	Not Significant (P-value>.05)
C. Glanzmann M, 2017	Low Quality	SPADI: Shoulder Pain and Disability Index	12 months	PICO 10: TSA 1 (Stemmed Humeral Component during TSA)	35	83.7(16.30)	PICO 10: TSA 2 (Stemless Humeral Component during TSA (aka humeral head resurfacing))	34	79.3(20.10)	MeanDif	4.4(-4.25,13.05)	Not Significant (P-value>.05)
C. Glanzmann M, 2017	Low Quality	qDASH: Quick Disabilities of the Arm, Shoulder and Hand	12 months	PICO 10: TSA 1 (Stemmed Humeral Component during TSA)	34	27.2(22.20)	PICO 10: TSA 2 (Stemless Humeral Component during TSA (aka humeral head resurfacing))	34	26(17.50)	MeanDif	1.2(-8.30,10.70)	Not Significant (P-value>.05)
C. Glanzmann M, 2017	Low Quality	Constant - Total	12 months	PICO 10: TSA 1 (Stemmed Humeral Component during TSA)	35	73.8(9.90)	PICO 10: TSA 2 (Stemless Humeral Component during TSA (aka humeral head resurfacing))	33	69.9(15.40)	MeanDif	3.9(-2.29,10.09)	Not Significant (P-value>.05)
C. Glanzmann M, 2017	Low Quality	SPADI: Shoulder Pain and Disability Index	24 months	PICO 10: TSA 1 (Stemmed Humeral Component during TSA)	37	82.5(17.30)	PICO 10: TSA 2 (Stemless Humeral Component during TSA (aka humeral head resurfacing))	33	79.7(21.00)	MeanDif	2.8(-6.28,11.88)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
C. Glanzmann M, 2017	Low Quality	qDASH: Quick Disabilities of the Arm, Shoulder and Hand	24 months	PICO 10: TSA 1 (Stemmed Humeral Component during TSA)	37	25.7(22.00)	PICO 10: TSA 2 (Stemless Humeral Component during TSA (aka humeral head resurfacing))	35	24.1(17.40)	MeanDif	1.6(-7.54,10.74)	Not Significant (P-value>.05)
C. Glanzmann M, 2017	Low Quality	Constant - Total	24 months	PICO 10: TSA 1 (Stemmed Humeral Component during TSA)	37	72.2(13.50)	PICO 10: TSA 2 (Stemless Humeral Component during TSA (aka humeral head resurfacing))	31	70.6(15.90)	MeanDif	1.6(-5.49,8.69)	Not Significant (P-value>.05)
Kooistra, B. W., 2017	Low Quality	Oxford Shoulder Score: pvalue only	Post-Op	PICO 10: TSA 1 (Stemmed TSA (normal))	29	. %	PICO 10: TSA 2 (Stemless TSA (Humeral Head Replacement))	20	. %	Author Reported	pval = 0.76	Not Significant (P-value>.05)
Kooistra, B. W., 2017	Low Quality	Constant - Total: pvalue only	2 years	PICO 10: TSA 1 (Stemmed TSA (normal))	29	. %	PICO 10: TSA 2 (Stemless TSA (Humeral Head Replacement))	20	. %	Author Reported	pval = 0.83	Not Significant (P-value>.05)

Table 73: TSA: Humeral Component - Stemmed vs. Stemless - Function

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Berth, A., 2013	Low Quality	Constant - ROM Subscale	31 minutes	PICO 10: TSA 1 (Stemmed Humeral Component during TSA)	41	22(4.30)	PICO 10: TSA 2 (Stemless Humeral Component during TSA)	41	25(5.40)	MeanDif	-3(-5.11,-0.89)	Treatment 2 Significant (P-value<.05)
Berth, A., 2013	Low Quality	Constant - Activities Subscale	31 minutes	PICO 10: TSA 1 (Stemmed Humeral Component during TSA)	41	11(3.50)	PICO 10: TSA 2 (Stemless Humeral Component during TSA)	41	12.2(2.00)	MeanDif	-1.2(-2.43,0.03)	Not Significant (P-value>.05)
Berth, A., 2013	Low Quality	ROM: Abduction	31 months	PICO 10: TSA 1 (Stemmed Humeral Component during TSA)	41	96.9(14.00)	PICO 10: TSA 2 (Stemless Humeral Component during TSA)	41	105(12.10)	MeanDif	-8.1(-13.76,-2.44)	Treatment 2 Significant (P-value<.05)
Berth, A., 2013	Low Quality	Constant - Strength Subscale	31 months	PICO 10: TSA 1 (Stemmed Humeral Component during TSA)	41	6.3(3.70)	PICO 10: TSA 2 (Stemless Humeral Component during TSA)	41	7.7(2.70)	MeanDif	-1.4(-2.80,0.00)	Not Significant (P-value>.05)
Berth, A., 2013	Low Quality	ROM: External Rotation	31 months	PICO 10: TSA 1 (Stemmed Humeral Component during TSA)	41	48.6(11.00)	PICO 10: TSA 2 (Stemless Humeral Component during TSA)	41	54.4(10.70)	MeanDif	-5.8(-10.50,-1.10)	Treatment 2 Significant (P-value<.05)
Berth, A., 2013	Low Quality	ROM: Anteversion	31 months	PICO 10: TSA 1 (Stemmed Humeral Component during TSA)	41	103.3(14.10)	PICO 10: TSA 2 (Stemless Humeral Component during TSA)	41	115.9(9.80)	MeanDif	-12.6(-17.86,-7.34)	Treatment 2 Significant (P-value<.05)
Kooistra, B. W., 2017	Low Quality	SST - Simple Shoulder Test: pvalue only	Post-Op	PICO 10: TSA 1 (Stemmed TSA (normal))	29	. %	PICO 10: TSA 2 (Stemless TSA (Humeral Head Replacement))	20	. %	Author Reported	pval = 0.56	Not Significant (P-value>.05)
Kooistra, B. W., 2017	Low Quality	DASH: pvalue only	Post-Op	PICO 10: TSA 1 (Stemmed TSA (normal))	29	. %	PICO 10: TSA 2 (Stemless TSA (Humeral Head Replacement))	20	. %	Author Reported	pval = 0.28	Not Significant (P-value>.05)
Kooistra, B. W., 2017	Low Quality	ROM: Forward Elevation pvalue only	Post-Op	PICO 10: TSA 1 (Stemmed TSA (normal))	29	. %	PICO 10: TSA 2 (Stemless TSA (Humeral Head Replacement))	20	. %	Author Reported	pval = 0.10	Not Significant (P-value>.05)
Kooistra, B. W., 2017	Low Quality	ROM: Abduction pvalue only	Post-Op	PICO 10: TSA 1 (Stemmed TSA (normal))	29	. %	PICO 10: TSA 2 (Stemless TSA (Humeral Head Replacement))	20	. %	Author Reported	pval = 0.68	Not Significant (P-value>.05)

Table 74: TSA: Humeral Component - Stemmed vs. Stemless- Other

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
C. Glanzmann M, 2017	Low Quality	Operation Time (min)	Intra-Op	PICO 10: TSA 1 (Stemmed Humeral Component during TSA)	37	. %	PICO 10: TSA 2 (Stemless Humeral Component during TSA (aka humeral head resurfacing))	37	. %	Author Reported	NA	Stemless Humeral Head during TSA Significant (P-value<.05)
Kooistra, B. W., 2017	Low Quality	Operation Time (min)	Intra-Op	PICO 10: TSA 1 (Stemmed TSA (normal))	29	104(18.00)	PICO 10: TSA 2 (Stemless TSA (Humeral Head Replacement))	20	116(18.00)	MeanDif	-12(-22.25,-1.75)	Treatment 1 Significant (P-value<.05)

Table 75: TSA: Humeral Component - Stemmed vs. Stemless - Pain

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Berth, A., 2013	Low Quality	Constant - Pain Subscale	31 months	PICO 10: TSA 1 (Stemmed Humeral Component during TSA)	41	9.5(3.00)	PICO 10: TSA 2 (Stemless Humeral Component during TSA)	41	9.7(2.50)	MeanDif	-0.2(-1.40,1.00)	Not Significant (P-value>.05)

TSA: Anatomic TSA vs. Reverse TSA

Summary of Findings:

	Low Quality
<div><div>↑ Better Outcomes</div><div>↓ Worse Outcomes</div><div>● Not Significant</div></div>	Steen, B. M., 2015
Composite	
ASES - Total: American Shoulder and Elbow Surgeons	●
Function	
ROM: External Rotation	●
ROM: Forward Flexion	●
ROM: Abduction	●
ROM: Internal Rotation	●
SST: Simple Shoulder Test	●
Adverse events	
Prosthetic Lossening	↓

Table 76: TSA: Anatomic vs. Reverse Total Shoulder Arthroplasty - Adverse Events

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Steen, B. M., 2015	Low Quality	Prosthetic Loosening	45 months	PICO 10: TSA 1 (TSA; deltopectoral approach)	96	5.21%	PICO 10: TSA 2 (TSA; deltopectoral approach)	24	0.00%	RD	0.05(0.01,0.10)	Treatment 2 Significant (P-value<.05)

Table 77: TSA: Anatomic vs. Reverse Total Shoulder Arthroplasty - Composite

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Steen, B. M., 2015	Low Quality	ASES - Total	45 months	PICO 10: TSA 1 (TSA; deltopectoral approach)	96	80.4(22.40)	PICO 10: TSA 2 (TSA; deltopectoral approach)	24	79.9(20.20)	MeanDif	0.5(-8.74,9.74)	Not Significant (P-value>.05)

Table 78: TSA: Anatomic vs. Reverse Total Shoulder Arthroplasty - Function

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Steen, B. M., 2015	Low Quality	ROM: Forward Flexion	45 months	PICO 10: TSA 1 (TSA; deltopectoral approach)	96	159.1(30.80)	PICO 10: TSA 2 (TSA; deltopectoral approach)	24	153.3(32.70)	MeanDif	5.8(-8.66,20.26)	Not Significant (P-value>.05)
Steen, B. M., 2015	Low Quality	ROM: Internal Rotation	45 months	PICO 10: TSA 1 (TSA; deltopectoral approach)	96	5.1(2.10)	PICO 10: TSA 2 (TSA; deltopectoral approach)	24	4.3(2.40)	MeanDif	0.8(-0.25,1.85)	Not Significant (P-value>.05)
Steen, B. M., 2015	Low Quality	SST	45 months	PICO 10: TSA 1 (TSA; deltopectoral approach)	96	7.8(4.10)	PICO 10: TSA 2 (TSA; deltopectoral approach)	24	7.9(3.70)	MeanDif	-0.1(-1.79,1.59)	Not Significant (P-value>.05)
Steen, B. M., 2015	Low Quality	ROM: External Rotation	45 months	PICO 10: TSA 1 (TSA; deltopectoral approach)	96	61.2(38.00)	PICO 10: TSA 2 (TSA; deltopectoral approach)	24	47.1(38.90)	MeanDif	14.1(-3.22,31.42)	Not Significant (P-value>.05)
Steen, B. M., 2015	Low Quality	ROM: Abduction	45 months	PICO 10: TSA 1 (TSA; deltopectoral approach)	96	147.9(34.50)	PICO 10: TSA 2 (TSA; deltopectoral approach)	24	140.4(37.40)	MeanDif	7.5(-8.98,23.98)	Not Significant (P-value>.05)

TSA: Glenoid Component – Hybrid vs. Pegged

Summary of Findings:

	Low Quality
<div> <div> <div></div> <div>Better Outcomes</div> </div> <div> <div></div> <div>Worse Outcomes</div> </div> <div> <div></div> <div>Not Significant</div> </div> </div>	Gulotta, L. V., 2015
<div>Composite</div> <div> <div>ASES - Total: American Shoulder and Elbow Sugeons</div> <div></div> </div>	
<div>Pain</div> <div> <div>Pain Scale</div> <div></div> </div>	
<div>Adverse events</div> <div> <div>Any Complication / Adverse Event</div> <div></div> </div> <div> <div>Radiolucent Line Score (RLS)</div> <div></div> </div> <div> <div>Re-operation (%)</div> <div></div> </div>	

Table 79: TSA: Glenoid Component - Hybrid vs. Pegged - Adverse Events

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Gulotta, L. V., 2015	Low Quality	Any Complications	2 years	PICO 10: TSA 1 ("hybrid glenoid implant that uses a central peg consisting of porous titanium designed to promote bone ongrowth,")	43	2.33%	PICO 10: TSA 2 ("conventional glenoid implant composed of allpolyethylene cemented pegs")	40	7.50%	RR	0.31(0.03,2.86)	Not Significant (P-value>.05)
Gulotta, L. V., 2015	Low Quality	Radiolucent Line Score	2 years	PICO 10: TSA 1 ("hybrid glenoid implant that uses a central peg consisting of porous titanium designed to promote bone ongrowth,")	43	1(0.40)	PICO 10: TSA 2 ("conventional glenoid implant composed of allpolyethylene cemented pegs")	40	1.6(0.30)	MeanDif	-0.6(-0.75,-0.45)	Treatment 1 Significant (P-value<.05)
Gulotta, L. V., 2015	Low Quality	Re-operation (%)	2 years	PICO 10: TSA 1 ("hybrid glenoid implant that uses a central peg consisting of porous titanium designed to promote bone ongrowth,")	43	2.33%	PICO 10: TSA 2 ("conventional glenoid implant composed of allpolyethylene cemented pegs")	40	5.00%	RR	0.47(0.04,4.93)	Not Significant (P-value>.05)

Table 80: TSA: Glenoid Component - Hybrid vs. Pegged - Composite

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Gulotta, L. V., 2015	Low Quality	ASES - Total: American Shoulder and Elbow Surgeons Score	2 years	PICO 10: TSA 1 ("hybrid glenoid implant that uses a central peg consisting of porous titanium designed to promote bone ongrowth,")	43	83.5(13.10)	PICO 10: TSA 2 ("conventional glenoid implant composed of allpolyethylene cemented pegs")	40	80.1(10.10)	MeanDif	3.4(-1.61,8.41)	Not Significant (P-value>.05)

Table 81: TSA: Glenoid Component - Hybrid vs. Pegged - Pain

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Gulotta, L. V., 2015	Low Quality	VAS	2 years	PICO 10: TSA 1 ("hybrid glenoid implant that uses a central peg consisting of porous titanium designed to promote bone ongrowth,")	43	1.2(0.20)	PICO 10: TSA 2 ("conventional glenoid implant composed of allpolyethylene cemented pegs")	40	1.5(0.30)	MeanDif	-0.3(-0.41,-0.19)	Treatment 1 Significant (P-value<.05)

TSA: Humeral Component – Eccentric vs. Offset Head

Summary of Findings:

	Low Quality
<div> <div> <div>↑ Better Outcomes</div> <div>↓ Worse Outcomes</div> <div>● Not Significant</div> </div> </div>	Sassoon, A., 2013
Composite	
Neer Rating: % Excellent or Satisfactory	●
Function	
ROM (Change from Baseline): Change in Elevation	●
ROM (Change from Baseline): Change in External Rotation	●
Pain	
Pain Scale	●
Adverse events	
Glenoid lucent lines (grade 4 or 5)	●
Postoperative subluxation (moderate or severe)	↑
Shift in glenoid position	●
Glenoid erosion (moderate or severe)	●
Walch classification (A2 or B2)	●
Glenoid at risk	●
Patient Satisfaction	
Satisfaction: Dichotomous: % Yes	●

Table 82: TSA: Humeral Component - Eccentric vs. Offset Humeral Head - Adverse Events

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Sassoon, A., 2013	Low Quality	Glenoid lucent lines (grade 4 or 5)	56 months	PICO 10: TSA 1 (Eccentric Head during TSA)	60	8.33%	PICO 10: TSA 2 (Offset Head during TSA)	48	10.42%	RR	0.80(0.25,2.60)	Not Significant (P-value>.05)
Sassoon, A., 2013	Low Quality	Postoperative subluxation (moderate or severe)	56 months	PICO 10: TSA 1 (Eccentric Head during TSA)	60	13.33%	PICO 10: TSA 2 (Offset Head during TSA)	48	29.17%	RR	0.46(0.21,1.00)	Treatment 1 Significant (P-value<.05)
Sassoon, A., 2013	Low Quality	Shift in glenoid position	56 months	PICO 10: TSA 1 (Eccentric Head during TSA)	60	5.00%	PICO 10: TSA 2 (Offset Head during TSA)	48	8.33%	RR	0.60(0.14,2.55)	Not Significant (P-value>.05)
Sassoon, A., 2013	Low Quality	Glenoid erosion (moderate or severe)	56 months	PICO 10: TSA 1 (Eccentric Head during TSA)	60	41.67%	PICO 10: TSA 2 (Offset Head during TSA)	48	43.75%	RR	0.95(0.61,1.48)	Not Significant (P-value>.05)
Sassoon, A., 2013	Low Quality	Walch classification (A2 or B2)	56 months	PICO 10: TSA 1 (Eccentric Head during TSA)	60	46.67%	PICO 10: TSA 2 (Offset Head during TSA)	48	54.17%	RR	0.86(0.59,1.25)	Not Significant (P-value>.05)
Sassoon, A., 2013	Low Quality	Glenoid at risk	56 months	PICO 10: TSA 1 (Eccentric Head during TSA)	60	11.67%	PICO 10: TSA 2 (Offset Head during TSA)	48	10.42%	RR	1.12(0.38,3.31)	Not Significant (P-value>.05)

Table 83: TSA: Humeral Component - Eccentric vs. Offset Humeral Head - Composite

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Sassoon, A., 2013	Low Quality	Neer Rating System: Excellent/Satisfactory: Dichotomous: Excellent/Satisfactory or Unsatisfactory	56 months	PICO 10: TSA 1 (Eccentric Head during TSA)	60	81.67%	PICO 10: TSA 2 (Offset Head during TSA)	48	89.58%	RR	0.91(0.78,1.06)	Not Significant (P-value>.05)

Table 84: TSA: Humeral Component - Eccentric vs. Offset Humeral Head - Function

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Sassoon, A., 2013	Low Quality	ROM (Change from Baseline): Change in Elevation	56 months	PICO 10: TSA 1 (Eccentric Head during TSA)	60	59.6(46.10)	PICO 10: TSA 2 (Offset Head during TSA)	48	50.5(41.10)	MeanDif	9.1(-7.37,25.57)	Not Significant (P-value>.05)
Sassoon, A., 2013	Low Quality	ROM (Change from Baseline): Change in External Rotation	56 months	PICO 10: TSA 1 (Eccentric Head during TSA)	60	33.6(28.40)	PICO 10: TSA 2 (Offset Head during TSA)	48	33.6(28.80)	MeanDif	0(-10.86,10.86)	Not Significant (P-value>.05)

Table 85: TSA: Humeral Component - Eccentric vs. Offset Humeral Head - Pain

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Sassoon, A., 2013	Low Quality	5 Point Pain Scale: no pain, 1 point; slight pain, 2 points; pain after unusual activity, 3 points; moderate pain, 4 poi	56 months	PICO 10: TSA 1 (Eccentric Head during TSA)	60	1.9(1.10)	PICO 10: TSA 2 (Offset Head during TSA)	48	1.7(1.00)	MeanDif	0.2(-0.20,0.60)	Not Significant (P-value>.05)

Table 86: TSA: Humeral Component - Eccentric vs. Offset Humeral Head - Patient Satisfaction

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Sassoon, A., 2013	Low Quality	Satisfaction: Dichotomous: % Yes	56 months	PICO 10: TSA 1 (Eccentric Head during TSA)	60	86.67%	PICO 10: TSA 2 (Offset Head during TSA)	48	87.50%	RR	0.99(0.86,1.15)	Not Significant (P-value>.05)

TSA: Humeral Component – Eccentric vs. Standard Head

Summary of Findings:

	Low Quality
<div> <div>↑ Better Outcomes</div> <div>↓ Worse Outcomes</div> <div>● Not Significant</div> </div>	Sassoon, A., 2013
<div>Composite</div> <div>Neer Rating: % Excellent or Satisfactory</div>	●
<div>Function</div> <div>ROM (Change from Baseline): Change in Elevation</div> <div>ROM (Change from Baseline): Change in External Rotation</div>	<div>●</div> <div>●</div>
<div>Pain</div> <div>Pain Scale</div>	●
<div>Adverse events</div> <div>Glenoid lucent lines (grade 4 or 5)</div> <div>Postoperative subluxation (moderate or severe)</div> <div>Shift in glenoid position</div> <div>Glenoid erosion (moderate or severe)</div> <div>Walch classification (A2 or B2)</div> <div>Glenoid at risk</div>	<div>●</div> <div>●</div> <div>●</div> <div>●</div> <div>●</div> <div>●</div>
<div>Patient Satisfaction</div> <div>Satisfaction: Dichotomous: % Yes</div>	●

Table 87: TSA: Humeral Component - Eccentric vs. Standard Humeral Head - Adverse Events

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Sassoon, A., 2013	Low Quality	Glenoid lucent lines (grade 4 or 5)	56 months	PICO 10: TSA 1 (Eccentric Head during TSA)	60	8.33%	PICO 10: TSA 3 (Standard Head during TSA)	52	9.62%	RR	0.87(0.27,2.83)	Not Significant (P-value>.05)
Sassoon, A., 2013	Low Quality	Glenoid erosion (moderate or severe)	56 months	PICO 10: TSA 1 (Eccentric Head during TSA)	60	41.67%	PICO 10: TSA 3 (Standard Head during TSA)	52	48.08%	RR	0.87(0.57,1.31)	Not Significant (P-value>.05)
Sassoon, A., 2013	Low Quality	Walch classification (A2 or B2)	56 months	PICO 10: TSA 1 (Eccentric Head during TSA)	60	46.67%	PICO 10: TSA 3 (Standard Head during TSA)	52	48.08%	RR	0.97(0.66,1.44)	Not Significant (P-value>.05)
Sassoon, A., 2013	Low Quality	Postoperative subluxation (moderate or severe)	56 months	PICO 10: TSA 1 (Eccentric Head during TSA)	60	13.33%	PICO 10: TSA 3 (Standard Head during TSA)	52	19.23%	RR	0.69(0.30,1.63)	Not Significant (P-value>.05)
Sassoon, A., 2013	Low Quality	Shift in glenoid position	56 months	PICO 10: TSA 1 (Eccentric Head during TSA)	60	5.00%	PICO 10: TSA 3 (Standard Head during TSA)	52	13.46%	RR	0.37(0.10,1.36)	Not Significant (P-value>.05)
Sassoon, A., 2013	Low Quality	Glenoid at risk	56 months	PICO 10: TSA 1 (Eccentric Head during TSA)	60	11.67%	PICO 10: TSA 3 (Standard Head during TSA)	52	13.46%	RR	0.87(0.33,2.31)	Not Significant (P-value>.05)

Table 88: TSA: Humeral Component - Eccentric vs. Standard Humeral Head - Composite

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Sassoon, A., 2013	Low Quality	Neer Rating System: Excellent/Satisfactory: Dichotomous: Excellent/Satisfactory or Unsatisfactory	56 months	PICO 10: TSA 1 (Eccentric Head during TSA)	60	81.67%	PICO 10: TSA 3 (Standard Head during TSA)	52	82.69%	RR	0.99(0.83,1.17)	Not Significant (P-value>.05)

Table 89: TSA: Humeral Component - Eccentric vs. Standard Humeral Head - Function

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Sassoon, A., 2013	Low Quality	ROM (Change from Baseline): Change in External Rotation	56 months	PICO 10: TSA 1 (Eccentric Head during TSA)	60	33.6(28.40)	PICO 10: TSA 3 (Standard Head during TSA)	52	38.4(27.30)	MeanDif	-4.8(-15.13,5.53)	Not Significant (P-value>.05)
Sassoon, A., 2013	Low Quality	ROM (Change from Baseline): Change in Elevation	56 months	PICO 10: TSA 1 (Eccentric Head during TSA)	60	59.6(46.10)	PICO 10: TSA 3 (Standard Head during TSA)	52	63.5(42.30)	MeanDif	-3.9(-20.28,12.48)	Not Significant (P-value>.05)

Table 90: TSA: Humeral Component - Eccentric vs. Standard Humeral Head - Pain

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Sassoon, A., 2013	Low Quality	5 Point Pain Scale: no pain, 1 point; slight pain, 2 points; pain after unusual activity, 3 points; moderate pain, 4 poi	56 months	PICO 10: TSA 1 (Eccentric Head during TSA)	60	1.9(1.10)	PICO 10: TSA 3 (Standard Head during TSA)	52	1.9(1.10)	MeanDif	0(-0.41,0.41)	Not Significant (P-value>.05)

Table 91: TSA: Humeral Component - Eccentric vs. Standard Humeral Head - Patient Satisfaction

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Sassoon, A., 2013	Low Quality	Satisfaction: Dichotomous: % Yes	56 months	PICO 10: TSA 1 (Eccentric Head during TSA)	60	86.67%	PICO 10: TSA 3 (Standard Head during TSA)	52	90.38%	RR	0.96(0.84,1.10)	Not Significant (P-value>.05)

TSA: Humeral Component – Offset vs. Standard Head

Summary of Findings:

	Low Quality
↑ Better Outcomes ↓ Worse Outcomes • Not Significant	Sassoon, A., 2013
Composite	
Neer Rating: % Excellent or Satisfactory	●
Function	
ROM (Change from Baseline): Change in Elevation	●
ROM (Change from Baseline): Change in External Rotation	●
Pain	
Pain Scale	●
Adverse events	
Glenoid lucent lines (grade 4 or 5)	●
Postoperative subluxation (moderate or severe)	●
Shift in glenoid position	●
Glenoid erosion (moderate or severe)	●
Walch classification (A2 or B2)	●
Glenoid at risk	●
Patient Satisfaction	
Satisfaction: Dichotomous: % Yes	●

Table 92: TSA: Humeral Component - Offset vs. Standard Humeral Head - Adverse Events

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Sassoon, A., 2013	Low Quality	Shift in glenoid position	56 months	PICO 10: TSA 2 (Offset Head during TSA)	48	8.33%	PICO 10: TSA 3 (Standard Head during TSA)	52	13.46%	RR	0.62(0.19,1.98)	Not Significant (P-value>.05)
Sassoon, A., 2013	Low Quality	Glenoid at risk	56 months	PICO 10: TSA 2 (Offset Head during TSA)	48	10.42%	PICO 10: TSA 3 (Standard Head during TSA)	52	13.46%	RR	0.77(0.26,2.28)	Not Significant (P-value>.05)
Sassoon, A., 2013	Low Quality	Walch classification (A2 or B2)	56 months	PICO 10: TSA 2 (Offset Head during TSA)	48	54.17%	PICO 10: TSA 3 (Standard Head during TSA)	52	48.08%	RR	1.13(0.77,1.65)	Not Significant (P-value>.05)
Sassoon, A., 2013	Low Quality	Postoperative subluxation (moderate or severe)	56 months	PICO 10: TSA 2 (Offset Head during TSA)	48	29.17%	PICO 10: TSA 3 (Standard Head during TSA)	52	19.23%	RR	1.52(0.75,3.09)	Not Significant (P-value>.05)
Sassoon, A., 2013	Low Quality	Glenoid lucent lines (grade 4 or 5)	56 months	PICO 10: TSA 2 (Offset Head during TSA)	48	10.42%	PICO 10: TSA 3 (Standard Head during TSA)	52	9.62%	RR	1.08(0.33,3.51)	Not Significant (P-value>.05)
Sassoon, A., 2013	Low Quality	Glenoid erosion (moderate or severe)	56 months	PICO 10: TSA 2 (Offset Head during TSA)	48	43.75%	PICO 10: TSA 3 (Standard Head during TSA)	52	48.08%	RR	0.91(0.59,1.40)	Not Significant (P-value>.05)

Table 93: TSA: Humeral Component - Offset vs. Standard Humeral Head - Composite

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Sassoon, A., 2013	Low Quality	Neer Rating System: Excellent/Satisfactory: Dichotomous: Excellent/Satisfactory or Unsatisfactory	56 months	PICO 10: TSA 2 (Offset Head during TSA)	48	89.58%	PICO 10: TSA 3 (Standard Head during TSA)	52	82.69%	RR	1.08(0.93,1.27)	Not Significant (P-value>.05)

Table 94: TSA: Humeral Component - Offset vs. Standard Humeral Head - Function

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Sassoon, A., 2013	Low Quality	ROM (Change from Baseline): Change in Elevation	56 months	PICO 10: TSA 2 (Offset Head during TSA)	48	50.5(41.10)	PICO 10: TSA 3 (Standard Head during TSA)	52	63.5(42.30)	MeanDif	-13(-29.35,3.35)	Not Significant (P-value>.05)
Sassoon, A., 2013	Low Quality	ROM (Change from Baseline): Change in External Rotation	56 months	PICO 10: TSA 2 (Offset Head during TSA)	48	33.6(28.80)	PICO 10: TSA 3 (Standard Head during TSA)	52	38.4(27.30)	MeanDif	-4.8(-15.82,6.22)	Not Significant (P-value>.05)

Table 95: TSA: Humeral Component - Offset vs. Standard Humeral Head - Pain

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Sassoon, A., 2013	Low Quality	5 Point Pain Scale: no pain, 1 point; slight pain, 2 points; pain after unusual activity, 3 points; moderate pain, 4 poi	56 months	PICO 10: TSA 2 (Offset Head during TSA)	48	1.7(1.00)	PICO 10: TSA 3 (Standard Head during TSA)	52	1.9(1.10)	MeanDif	-0.2(-0.61,0.21)	Not Significant (P-value>.05)

Table 96: TSA: Humeral Component - Offset vs. Standard Humeral Head - Patient Satisfaction

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Sassoon, A., 2013	Low Quality	Satisfaction: Dichotomous: % Yes	56 months	PICO 10: TSA 2 (Offset Head during TSA)	48	87.50%	PICO 10: TSA 3 (Standard Head during TSA)	52	90.38%	RR	0.97(0.84,1.11)	Not Significant (P-value>.05)

PICO 11:

TSA: Subscapularis Peel vs. Lesser Tuberosity Osteotomy

Summary of Findings:

	High Quality	Low Quality
	Lapner, P. L., 2012 Lapner, P. L., 2013	Buckley, T., 2014 Albinder, W., 2019
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant		
Composite		
ASES - Total: American Shoulder and Elbow Surgeons	●	●
Constant - Total		●
DASH: Disabilities of the Arm Shoulder and Hand		●
WOOS - Physical Subscale: Western Ontario Osteoarthritis of the Shoulder Index		↓
WOOS - Total: Western Ontario Osteoarthritis of the Shoulder	↑	↓
Function		
ROM: External Rotation		↑
ROM: Forward Elevation		●
ROM: Abduction		●
WOOS - Sports/Recreation/Work Subscale		↑
Strength: Belly Press Resistance (lbs)		●
Strength: Subscapularis Strength (kg) via dynamometer strength test	●	
Strength: Bear Hug Resistance (lbs)		●
Shoulder Instability Score		●
Quality of Life		
WOOS - Emotions Subscale		↓
WOOS - Lifestyle Subscale		↓
Adverse events		
Fatty Infiltration Grade: Described by Goutallier et al.	●	
Healing Complications: Assessed via computed tomography (CT) imaging	●	
Abnormal Ultrasound		↓
Pain		
VAS Pain		●

*Lapner, P.L., 2012 and Lapner, P.L., 2013 were studies utilizing the same cohort

Meta-Analysis: WOOS – Total

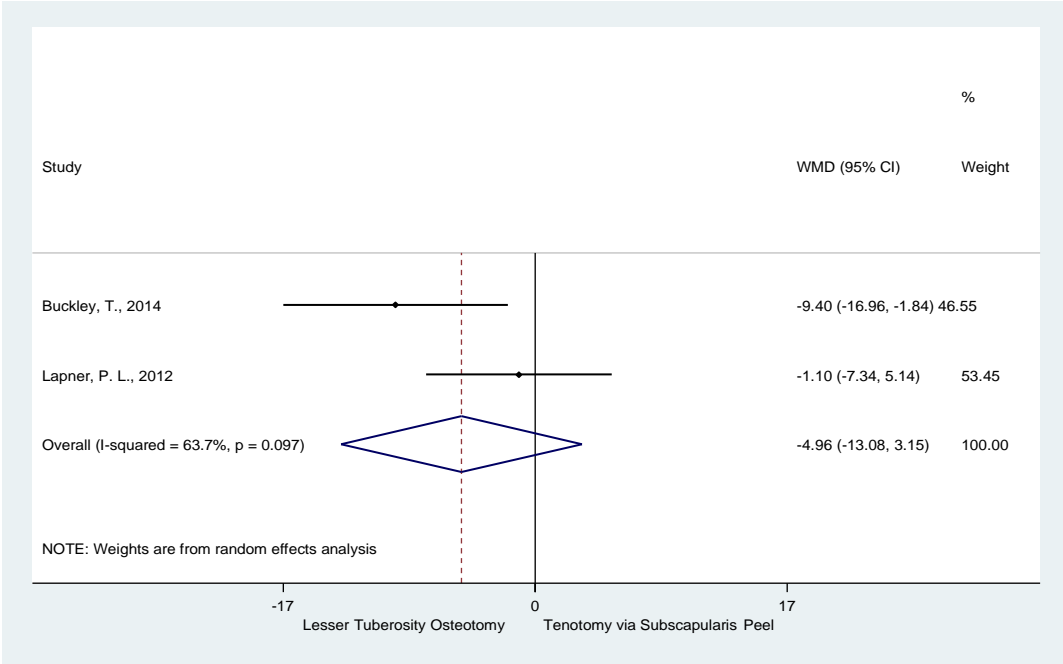


Table 97: PICO 11- TSA: Subscapularis Peel vs. Lesser Tuberosity Osteotomy - Adverse Events

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Lapner, P. L., 2013	High Quality	Fatty Infiltration Grade: Described by Goutallier et al.	12 months	PICO 11: Subscapularis Peel ("subscapularis tendon was peeled off the lesser tuberosity, beginning at the intertubercular groove")	41	0.95(0.85)	PICO 11: Osteotomy ("A fragment of the lesser tuberosity (measuring 5 to 10 mm in thickness and 3 cm in length) was elevated with an osteotome along with the subscapularis insertion")	41	0.9(0.89)	MeanDif	0.05(-0.33,0.43)	Not Significant (P-value>.05)
Lapner, P. L., 2013	High Quality	Healing Complications: Assessed via computed tomography (CT) imaging	12 months	PICO 11: Subscapularis Peel ("subscapularis tendon was peeled off the lesser tuberosity, beginning at the intertubercular groove")	41	4.88%	PICO 11: Osteotomy ("A fragment of the lesser tuberosity (measuring 5 to 10 mm in thickness and 3 cm in length) was elevated with an osteotome along with the subscapularis insertion")	41	0.00%	RD	0.05(-0.02,0.11)	Not Significant (P-value>.05)
Buckley, T., 2014	Low Quality	Abnormal Ultrasound	Post-Op	PICO 11: Subscapularis Peel ("After biceps tenodesis is performed, the subscapularis tendon is released from the lesser tuberosity at the margin of the bicipital groove.")	32	12.50%	PICO 11: Osteotomy ("After the biceps tenodesis is performed, the LTO is performed using an osteotome")	28	0.00%	RD	0.13(0.01,0.24)	Treatment 2 Significant (P-value<.05)

Table 98: PICO 11- TSA: Subscapularis Peel vs. Lesser Tuberosity Osteotomy - Composite

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Lapner, P. L., 2012	High Quality	WOOS - Total: Western Ontario Osteoarthritis of the Shoulder	24 months	PICO 11: Subscapularis Peel ("subscapularis tendon was peeled off the lesser tuberosity, beginning at the intertubercular groove")	37	88.2(16.50)	PICO 11: Osteotomy ("A fragment of the lesser tuberosity (measuring 5 to 10 mm in thickness and 3 cm in length) was elevated with an osteotome along with the subscapularis insertion")	36	86.5(16.00)	MeanDif	1.7(-5.76,9.16)	Not Significant (P-value>.05)
Buckley, T., 2014	Low Quality	Constant - Total	Post-Op	PICO 11: Subscapularis Peel ("After biceps tenodesis is performed, the subscapularis tendon is released from the lesser tuberosity at the margin of the bicipital groove.")	32	80.8(9.90)	PICO 11: Osteotomy ("After the biceps tenodesis is performed, the LTO is performed using an osteotome")	28	81.8(9.40)	MeanDif	-1(-5.89,3.89)	Not Significant (P-value>.05)
Lapner, P. L., 2012	High Quality	WOOS - Total: Western Ontario Osteoarthritis of the Shoulder	3 months	PICO 11: Subscapularis Peel ("subscapularis tendon was peeled off the lesser tuberosity, beginning at the intertubercular groove")	37	67.5(22.20)	PICO 11: Osteotomy ("A fragment of the lesser tuberosity (measuring 5 to 10 mm in thickness and 3 cm in length) was elevated with an osteotome along with the subscapularis insertion")	36	64.3(22.00)	MeanDif	3.2(-6.94,13.34)	Not Significant (P-value>.05)
Lapner, P. L., 2012	High Quality	ASES - Total: American Shoulder and Elbow Surgeons score	3 months	PICO 11: Subscapularis Peel ("subscapularis tendon was peeled off the lesser tuberosity, beginning at the intertubercular groove")	37	56.5(24.80)	PICO 11: Osteotomy ("A fragment of the lesser tuberosity (measuring 5 to 10 mm in thickness and 3 cm in length) was elevated with an osteotome along with the subscapularis insertion")	36	57.6(25.60)	MeanDif	-1.1(-12.67,10.47)	Not Significant (P-value>.05)
Lapner, P. L., 2012	High Quality	ASES - Total: American Shoulder and Elbow Surgeons score	6 months	PICO 11: Subscapularis Peel ("subscapularis tendon was peeled off the lesser tuberosity, beginning at the intertubercular groove")	37	65.4(25.40)	PICO 11: Osteotomy ("A fragment of the lesser tuberosity (measuring 5 to 10 mm in thickness and 3 cm in length) was elevated with an osteotome along with the subscapularis insertion")	36	72.2(21.90)	MeanDif	-6.8(-17.67,4.07)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Lapner, P. L., 2012	High Quality	WOOS - Total: Western Ontario Osteoarthritis of the Shoulder	6 months	PICO 11: Subscapularis Peel ("subscapularis tendon was peeled off the lesser tuberosity, beginning at the intertubercular groove")	37	74.8(24.20)	PICO 11: Osteotomy ("A fragment of the lesser tuberosity (measuring 5 to 10 mm in thickness and 3 cm in length) was elevated with an osteotome along with the subscapularis insertion")	36	81.3(19.20)	MeanDif	-6.5(-16.51,3.51)	Not Significant (P-value>.05)
Lapner, P. L., 2012	High Quality	WOOS - Total: Western Ontario Osteoarthritis of the Shoulder	12 months	PICO 11: Subscapularis Peel ("subscapularis tendon was peeled off the lesser tuberosity, beginning at the intertubercular groove")	37	87.1(14.80)	PICO 11: Osteotomy ("A fragment of the lesser tuberosity (measuring 5 to 10 mm in thickness and 3 cm in length) was elevated with an osteotome along with the subscapularis insertion")	36	8.2(12.30)	MeanDif	78.9(72.66,85.14)	Treatment 1 Significant (P-value<.05)
Lapner, P. L., 2012	High Quality	ASES - Total: American Shoulder and Elbow Surgeons score	12 months	PICO 11: Subscapularis Peel ("subscapularis tendon was peeled off the lesser tuberosity, beginning at the intertubercular groove")	37	81.3(18.70)	PICO 11: Osteotomy ("A fragment of the lesser tuberosity (measuring 5 to 10 mm in thickness and 3 cm in length) was elevated with an osteotome along with the subscapularis insertion")	36	77.1(23.70)	MeanDif	4.2(-5.61,14.01)	Not Significant (P-value>.05)
Lapner, P. L., 2012	High Quality	ASES - Total: American Shoulder and Elbow Surgeons score	24 months	PICO 11: Subscapularis Peel ("subscapularis tendon was peeled off the lesser tuberosity, beginning at the intertubercular groove")	37	83.3(19.00)	PICO 11: Osteotomy ("A fragment of the lesser tuberosity (measuring 5 to 10 mm in thickness and 3 cm in length) was elevated with an osteotome along with the subscapularis insertion")	36	79.4(24.60)	MeanDif	3.9(-6.20,14.00)	Not Significant (P-value>.05)
Buckley, T., 2014	Low Quality	WOOS - Total: Western Ontario Osteoarthritis of the Shoulder Index	Post-Op	PICO 11: Subscapularis Peel ("After biceps tenodesis is performed, the subscapularis tendon is released from the lesser tuberosity at the margin of the bicipital groove.")	32	82.1(18.90)	PICO 11: Osteotomy ("After the biceps tenodesis is performed, the LTO is performed using an osteotome")	28	91.5(10.20)	MeanDif	-9.4(-16.96,-1.84)	Treatment 2 Significant (P-value<.05)
Buckley, T., 2014	Low Quality	DASH: Disabilities of the Arm Shoulder and Hand	Post-Op	PICO 11: Subscapularis Peel ("After biceps tenodesis is performed, the subscapularis tendon is released from the lesser tuberosity at the margin of the bicipital groove.")	32	14(13.90)	PICO 11: Osteotomy ("After the biceps tenodesis is performed, the LTO is performed using an osteotome")	28	10.8(8.90)	MeanDif	3.2(-2.64,9.04)	Not Significant (P-value>.05)
Aibinder, W., 2019	Low Quality	ASES – Total (mean only)	6 months	PICO 11: Subscapularis Peel	65	78	PICO 11: Osteotomy	55	82	MeanDif	Author Reported	Not Significant (P-value>.05)
Aibinder, W., 2019	Low Quality	ASES – Total (mean only)	1 year	PICO 11: Subscapularis Peel	65	87	PICO 11: Osteotomy	55	88	MeanDif	Author Reported	Not Significant (P-value>.05)
Aibinder, W., 2019	Low Quality	ASES – Total (mean only)	2 year	PICO 11: Subscapularis Peel	65	90	PICO 11: Osteotomy	55	89	MeanDif	Author Reported	Not Significant (P-value>.05)

Table 99: PICO 11- TSA: Subscapularis Peel vs. Lesser Tuberosity Osteotomy - Function

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Buckley, T., 2014	Low Quality	Strength: Belly Press Resistance (lbs)	Post-Op	PICO 11: Subscapularis Peel ("After biceps tenodesis is performed, the subscapularis tendon is released from the lesser tuberosity at the margin of the bicipital groove.")	32	21.1(7.60)	PICO 11: Osteotomy ("After the biceps tenodesis is performed, the LTO is performed using an osteotome")	28	23.4(6.10)	MeanDif	-2.3(-5.77,1.17)	Not Significant (P-value>.05)
Buckley, T., 2014	Low Quality	ROM: Forward Elevation	Post-Op	PICO 11: Subscapularis Peel ("After biceps tenodesis is performed, the subscapularis tendon is released from the lesser tuberosity at the margin of the bicipital groove.")	32	151.3(16.80)	PICO 11: Osteotomy ("After the biceps tenodesis is performed, the LTO is performed using an osteotome")	28	145.5(14.00)	MeanDif	5.8(-2.00,13.60)	Not Significant (P-value>.05)
Lapner, P. L., 2012	High Quality	Strength: Subscapularis Strength (kg) via dynamometer strength test	3 months	PICO 11: Subscapularis Peel ("subscapularis tendon was peeled off the lesser tuberosity, beginning at the intertubercular groove")	37	3.3(2.20)	PICO 11: Osteotomy ("A fragment of the lesser tuberosity (measuring 5 to 10 mm in thickness and 3 cm in length) was elevated with an osteotome along with the subscapularis insertion")	36	2.7(1.60)	MeanDif	0.6(-0.28,1.48)	Not Significant (P-value>.05)
Lapner, P. L., 2012	High Quality	Strength: Subscapularis Strength (kg) via dynamometer strength test	6 months	PICO 11: Subscapularis Peel ("subscapularis tendon was peeled off the lesser tuberosity, beginning at the intertubercular groove")	37	3.8(2.40)	PICO 11: Osteotomy ("A fragment of the lesser tuberosity (measuring 5 to 10 mm in thickness and 3 cm in length) was elevated with an osteotome along with the subscapularis insertion")	36	3.7(2.20)	MeanDif	0.1(-0.96,1.16)	Not Significant (P-value>.05)
Lapner, P. L., 2012	High Quality	Strength: Subscapularis Strength (kg) via dynamometer strength test	12 months	PICO 11: Subscapularis Peel ("subscapularis tendon was peeled off the lesser tuberosity, beginning at the intertubercular groove")	37	4.6(2.60)	PICO 11: Osteotomy ("A fragment of the lesser tuberosity (measuring 5 to 10 mm in thickness and 3 cm in length) was elevated with an osteotome along with the subscapularis insertion")	36	3.8(1.80)	MeanDif	0.8(-0.22,1.82)	Not Significant (P-value>.05)
Lapner, P. L., 2012	High Quality	Strength: Subscapularis Strength (kg) via dynamometer strength test	24 months	PICO 11: Subscapularis Peel ("subscapularis tendon was peeled off the lesser tuberosity, beginning at the intertubercular groove")	37	5.5(2.60)	PICO 11: Osteotomy ("A fragment of the lesser tuberosity (measuring 5 to 10 mm in thickness and 3 cm in length) was elevated with an osteotome along with the subscapularis insertion")	36	4.4(2.90)	MeanDif	1.1(-0.16,2.36)	Not Significant (P-value>.05)
Buckley, T., 2014	Low Quality	ROM: External Rotation	Post-Op	PICO 11: Subscapularis Peel ("After biceps tenodesis is performed, the subscapularis tendon is released from the lesser tuberosity at the margin of the bicipital groove.")	32	68.7(11.50)	PICO 11: Osteotomy ("After the biceps tenodesis is performed, the LTO is performed using an osteotome")	28	59.5(11.30)	MeanDif	9.2(3.42,14.98)	Treatment 1 Significant (P-value<.05)
Buckley, T., 2014	Low Quality	Strength: Bear Hug Resistance (lbs)	Post-Op	PICO 11: Subscapularis Peel ("After biceps tenodesis is performed, the subscapularis tendon is released from the lesser tuberosity at the margin of the bicipital groove.")	32	23.5(8.60)	PICO 11: Osteotomy ("After the biceps tenodesis is performed, the LTO is performed using an osteotome")	28	26.9(7.80)	MeanDif	-3.4(-7.55,0.75)	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Buckley, T., 2014	Low Quality	WOOS - Sports/Recreation/Work Subscale: Western Ontario Osteoarthritis of the Shoulder Index	Post-Op	PICO 11: Subscapularis Peel ("After biceps tenodesis is performed, the subscapularis tendon is released from the lesser tuberosity at the margin of the bicipital groove.")	32	113.3(116.80)	PICO 11: Osteotomy ("After the biceps tenodesis is performed, the LTO is performed using an osteotome")	28	553(63.30)	MeanDif	-439.7(-486.47,-392.93)	Treatment 1 Significant (P-value<.05)
Buckley, T., 2014	Low Quality	ROM: Abduction	Post-Op	PICO 11: Subscapularis Peel ("After biceps tenodesis is performed, the subscapularis tendon is released from the lesser tuberosity at the margin of the bicipital groove.")	32	132(21.30)	PICO 11: Osteotomy ("After the biceps tenodesis is performed, the LTO is performed using an osteotome")	28	127.5(22.90)	MeanDif	4.5(-6.74,15.74)	Not Significant (P-value>.05)
Aibinder, W., 2019	Low Quality	ROM Forward Elevation	6 months	PICO 11: Subscapularis Peel	65	. %	PICO 11: Osteotomy	55	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Aibinder, W., 2019	Low Quality	ROM External Rotation	6 months	PICO 11: Subscapularis Peel	65	. %	PICO 11: Osteotomy	55	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Aibinder, W., 2019	Low Quality	Shoulder Instability Score	6 months	PICO 11: Subscapularis Peel	65	. %	PICO 11: Osteotomy	55	. %	MeanDif	Author Reported	Not Significant (P-value>.05)

Table 100: PICO 11- TSA: Subscapularis Peel vs. Lesser Tuberosity Osteotomy - Quality of Life

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Buckley, T., 2014	Low Quality	WOOS - Physical Subscale: Western Ontario Osteoarthritis of the Shoulder Index	Post-Op	PICO 11: Subscapularis Peel ("After biceps tenodesis is performed, the subscapularis tendon is released from the lesser tuberosity at the margin of the bicipital groove.")	32	81(85.60)	PICO 11: Osteotomy ("After the biceps tenodesis is performed, the LTO is performed using an osteotome")	28	41.7(58.60)	MeanDif	39.3(2.55,76.05)	Treatment 2 Significant (P-value<.05)
Buckley, T., 2014	Low Quality	WOOS - Lifestyle Subscale: Western Ontario Osteoarthritis of the Shoulder Index	Post-Op	PICO 11: Subscapularis Peel ("After biceps tenodesis is performed, the subscapularis tendon is released from the lesser tuberosity at the margin of the bicipital groove.")	32	84(94.10)	PICO 11: Osteotomy ("After the biceps tenodesis is performed, the LTO is performed using an osteotome")	28	40.7(58.70)	MeanDif	43.3(4.11,82.49)	Treatment 2 Significant (P-value<.05)
Buckley, T., 2014	Low Quality	WOOS - Emotions Subscale: Western Ontario Osteoarthritis of the Shoulder Index	Post-Op	PICO 11: Subscapularis Peel ("After biceps tenodesis is performed, the subscapularis tendon is released from the lesser tuberosity at the margin of the bicipital groove.")	32	60.5(87.50)	PICO 11: Osteotomy ("After the biceps tenodesis is performed, the LTO is performed using an osteotome")	28	23.3(28.90)	MeanDif	37.2(5.05,69.35)	Treatment 2 Significant (P-value<.05)

Table 101: PICO 11- TSA: Subscapularis Peel vs. Lesser Tuberosity Osteotomy - Pain

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Aibinder, W., 2019	Low Quality	VAS Pain (mean only)	6 months	PICO 11: Subscapularis Peel	65	1.5	PICO 11: Osteotomy	55	1.2	MeanDif	Author Reported	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Aibinder, W., 2019	Low Quality	VAS Pain (mean only)	1 year	PICO 11: Subscapularis Peel	65	0.8	PICO 11: Osteotomy	55	0.9	MeanDif	Author Reported	Not Significant (P-value>.05)
Aibinder, W., 2019	Low Quality	VAS Pain (mean only)	2 year	PICO 11: Subscapularis Peel	65	0.7	PICO 11: Osteotomy	55	1.0	MeanDif	Author Reported	Not Significant (P-value>.05)

TSA: Subscapularis Tenotomy vs. Lesser Tuberosity Osteotomy

Summary of Findings:

	High Quality	Low Quality
	Levine, W., 2019	Aibinder, W., 2019
<div> <div>↑ Better Outcomes</div> <div>↓ Worse Outcomes</div> <div>● Not Significant</div> </div>		
Composite		
ASES - Total	●	●
Function		
ROM: Internal Rotation	●	
Strength: Internal Rotation	●	
Strength: External Rotation	●	
Strength: Forward Elevation	●	
ROM: External Rotation (pvalue only)		●
ROM: Forward Elevation (pvalue only)		●
Shoulder Instability Score (pvalue only)		●
ROM: Forward Elevation	●	
ROM: External Rotation	↓	
Simple Shoulder Test	↓	
Pain		
VAS Pain	●	●

Table 102: PICO 11- TSA: Subscapularis Tenotomy vs. Lesser Tuberosity Osteotomy - Function

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Levine, W., 2019	High Quality	ROM: Forward Elevation	6 weeks	PICO 11: Subscapularis Tenotomy ("tendon was sharply incised 1 cm medial to its lesser tuberosity insertion...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial with an oscillating saw and completed with an osteotome, aiming parallel to the subscapularis for a 10-mm-thick osteotomy")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	ROM: Forward Elevation	3 months	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	ROM: Forward Elevation	6 months	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	ROM: Forward Elevation	1 year	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	150(6)	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	153 (7)	MeanDif	3.0 (-0.40, 6.40)	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	ROM: External Rotation	6 weeks	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	ROM: External Rotation	3 months	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	ROM: External Rotation	6 months	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	ROM: External Rotation	1 year	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	50 (2)	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	52 (3)	MeanDif	2.0 (0.6750, 3.33)	Treatment 2 Significant (P-value<.05)
Levine, W., 2019	High Quality	ROM: Internal Rotation	6 weeks	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	ROM: Internal Rotation	3 months	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	ROM: Internal Rotation	6 months	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	ROM: Internal Rotation	1 year	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	Strength: Internal Rotation	6 weeks	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	Strength: Internal Rotation	3 months	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	Strength: Internal Rotation	6 months	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	Strength: Internal Rotation	1 year	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	Strength: Forward Elevation	6 weeks	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	Strength: Forward Elevation	3 months	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	Strength: Forward Elevation	6 months	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	Strength: Forward Elevation	1 year	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	Strength: External Rotation	6 weeks	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	Strength: External Rotation	3 months	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Levine, W., 2019	High Quality	Strength: External Rotation	6 months	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	Strength: External Rotation	1 year	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	Simple Shoulder Test	6 weeks	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	Simple Shoulder Test	3 months	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Treatment 2 Significant (P-value<.05)
Levine, W., 2019	High Quality	Simple Shoulder Test	6 months	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	Simple Shoulder Test	1 year	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Aibinder, W., 2019	Low Quality	Shoulder Instability Score (pvalue only)	2 years	PICO 11: Subscapularis Tenotomy	68	. %	PICO 11: Lesser Tuberosity Osteotomy	55	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Aibinder, W., 2019	Low Quality	External Rotation (pvalue only)	2 years	PICO 11: Subscapularis Tenotomy	68	. %	PICO 11: Lesser Tuberosity Osteotomy	55	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Aibinder, W., 2019	Low Quality	Forward Elevation (pvalue only)	2 years	PICO 11: Subscapularis Tenotomy	68	. %	PICO 11: Lesser Tuberosity Osteotomy	55	. %	MeanDif	Author Reported	Not Significant (P-value>.05)

Table 103: PICO 11- TSA: Subscapularis Tenotomy vs. Lesser Tuberosity Osteotomy - Composite

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Levine, W., 2019	High Quality	ASES – Total (significance only)	6 weeks	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	ASES – Total (significance only)	3 months	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	ASES – Total (significance only)	6 months	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	ASES – Total (significance only)	1 year	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	3.0 (-0.40, 6.40)	Not Significant (P-value>.05)
Aibinder, W., 2019	Low Quality	ASES – Total (significance only)	2 year	PICO 11: Subscapularis Tenotomy	68	. %	PICO 11: Lesser Tuberosity	55	. %	MeanDif	Author Reported	Not Significant (P-value>.05)

Table 104: PICO 11- TSA: Subscapularis Tenotomy vs. Lesser Tuberosity Osteotomy - Pain

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Levine, W., 2019	High Quality	VAS Pain (significance only)	6 weeks	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	VAS Pain (significance only)	3 months	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	VAS Pain (significance only)	6 months	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Levine, W., 2019	High Quality	VAS Pain (significance only)	1 year	PICO 11: Subscapularis Tenotomy ("tendon was sharply...")	30	. %	PICO 11: Lesser Tuberosity Osteotomy ("lateral to medial...")	29	. %	MeanDif	3.0 (-0.40, 6.40)	Not Significant (P-value>.05)
Aibinder, W., 2019	Low Quality	VAS Pain (significance only)	2 year	PICO 11: Subscapularis Tenotomy	68	. %	PICO 11: Lesser Tuberosity	55	. %	MeanDif	Author Reported	Not Significant (P-value>.05)

TSA: Subscapularis Peel vs. Subscapularis Tenotomy

Summary of Findings:

	Low Quality
<div> <div> <div>↑ Better Outcomes</div> <div>↓ Worse Outcomes</div> <div>● Not Significant</div> </div> </div>	Aibinder, W., 2019
Composite	
ASES - Total	
Function	
ROM: External Rotation (pvalue only)	
ROM: Forward Elevation (pvalue only)	
Shoulder Instability Score (pvalue only)	
Pain	
VAS Pain	

Table 105: PICO 11- TSA: Subscapularis Peel vs. Subscapularis Tenotomy - Function

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Aibinder, W., 2019	Low Quality	Shoulder Instability Score (pvalue only)	2 years	PICO 11: Subscapularis Peel	68	. %	PICO 11: Subscapularis Tenotomy	55	. %	MeanDif	Author Reported	Not Significant (P-value>.05)
Aibinder, W., 2019	Low Quality	External Rotation (pvalue only)	2 years	PICO 11: Subscapularis Peel	68	. %	PICO 11: Subscapularis Tenotomy	55	. %	MeanDif	Author Reported	Treatment 1 Significant (P-value<.05)
Aibinder, W., 2019	Low Quality	Forward Elevation (pvalue only)	2 years	PICO 11: Subscapularis Peel	68	. %	PICO 11: Subscapularis Tenotomy	55	. %	MeanDif	Author Reported	Treatment 2 Significant (P-value<.05)

Table 106: PICO 11- TSA: Subscapularis Tenotomy - Composite

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Aibinder, W., 2019	Low Quality	ASES – Total (significance only)	2 year	PICO 11: Subscapularis Peel	68	. %	PICO 11: Subscapularis Tenotomy	55	. %	MeanDif	Author Reported	Not Significant (P-value>.05)

Table 107: PICO 11- TSA: Subscapularis Tenotomy - Pain

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Aibinder, W., 2019	Low Quality	VAS Pain (significance only)	2 year	PICO 11: Subscapularis Peel	68	. %	PICO 11: Subscapularis Tenotomy	55	. %	MeanDif	Author Reported	Not Significant (P-value>.05)

TSA: Concomitant Biceps Tenodesis vs. Control

Summary of Findings:

	Low Quality
<div> <div> <div>↑</div> <div>Better Outcomes</div> </div> <div> <div>↓</div> <div>Worse Outcomes</div> </div> <div> <div>●</div> <div>Not Significant</div> </div> </div>	Fama, G., 2004
Adverse events	
Radiolucent Lines - Glenoid Component	↑
Radiolucent Lines - Humeral Component	↑
Patient Satisfaction	
Subjective Patient Satisfaction: Excellent or Good	●

Table 108: PICO 11- TSA: Concomitant Biceps Tenodesis vs. Control - Adverse Events

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Fama, G., 2004	Low Quality	Radiolucent Lines - Glenoid Component	Post-Op	PICO 11: Tenodesis (Biceps Tenodesis)	108	39.81%	PICO 11: Placebo / Control (No Biceps Tenodesis)	478	61.09%	RR	0.65(0.51,0.83)	Treatment 1 Significant (P-value<.05)
Fama, G., 2004	Low Quality	Radiolucent Lines - Humeral Component	Post-Op	PICO 11: Tenodesis (Biceps Tenodesis)	108	7.41%	PICO 11: Placebo / Control (No Biceps Tenodesis)	478	15.06%	RR	0.49(0.24,0.99)	Treatment 1 Significant (P-value<.05)

Table 109: PICO 11- TSA: Concomitant Biceps Tenodesis vs. Control - Patient Satisfaction

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Fama, G., 2004	Low Quality	Subjective Patient Satisfaction: Excellent or Good	Post-Op	PICO 11: Tenodesis (Biceps Tenodesis)	108	97.22%	PICO 11: Placebo / Control (No Biceps Tenodesis)	478	93.93%	RR	1.04(1.00,1.08)	Not Significant (P-value>.05)

PICO 12:

TSA: Glenoid Preparation – Thrombin-Soaked Gel Foam vs. Compressed CO₂ Lavage

Summary of Findings:

	High Quality
	Edwards, T. B., 2007
↑ Better Outcomes ↓ Worse Outcomes ● Not Significant	
Adverse events	
Radiolucent Line Score (RLS)	●

Table 110: PICO 12- TSA: Glenoid Prep: Thombin Soaked Gel Foam vs. Compressed CO2 Lavage - Adverse Events

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Edwards, T. B., 2007	High Quality	Radiolucent Line Score (RLS)	1 weeks	PICO 12: Glenoid Preparation A (gel foam soaked in thrombin placed into prepared keel slot during TSA)	21	0.6(0.80)	PICO 12: Glenoid Preparation B (Compressed CO2 gas jet lavage to remove fluid and debris from glenoid after keel slot creation during TSA)	24	0.7(1.20)	MeanDif	-0.1(-0.69,0.49)	Not Significant (P-value>.05)

PICO 15:

Shoulder Arthroplasty: Multimodal Pain Management vs. Control

Summary of Findings:

	Low Quality
<div>↑ Better Outcomes</div> <div>↓ Worse Outcomes</div> <div>• Not Significant</div>	Routman, H. D., 2017
Other	
Length of Stay (d): pvalue only	↑
Pain	
Pain Scale (pvalue only)	↑
Morphine Equivalents (mg): pvalue only	↑

Table 111: PICO 15- Postop Multimodal Pain Management vs. Control- Other

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Routman, H. D., 2017	Low Quality	Length of Stay (d): pvalue only	At Discharge	PICO 12: Intra-Op Adjuncts (Intra-op Dexamethasone + Bupivacaine + Multimodal Pain Mgmt)	31	. %	PICO 12: Control (Multimodal Pain Mgmt)	24	. %	Author Reported	NA	Intra-Op Corticosteroid + Local Anesthetic Significant (P-value<.05)

Table 112: PICO 15- Postop Multimodal Pain Management vs. Control - Pain

Reference Title	Quality	Outcome Details	Duration	Treatment 1 (Details)	Group1 N	Mean1/P1 (SD1)	Treatment 2 (Details)	Group2 N	Mean2/P2 (SD2)	Effect Measure	Result (95% CI)	Favored Treatment
Routman, H. D., 2017	Low Quality	VAS: pvalue only	At Discharge	PICO 12: Intra-Op Adjuncts (Intra-op Dexamethasone + Bupivacaine + Multimodal Pain Mgmt)	31	. %	PICO 12: Control (Multimodal Pain Mgmt)	24	. %	Author Reported	pval <0.001	Intra-Op Corticosteroid + Local Anesthetic Significant (P-value<.05)
Routman, H. D., 2017	Low Quality	Morphine Equivalents (mg): pvalue only	At Discharge	PICO 12: Intra-Op Adjuncts (Intra-op Dexamethasone + Bupivacaine + Multimodal Pain Mgmt)	31	. %	PICO 12: Control (Multimodal Pain Mgmt)	24	. %	Author Reported	0.13	Not Significant (P-value>.05)
Routman, H. D., 2017	Low Quality	Morphine Equivalents (mg): pvalue only	Post-Op	PICO 12: Intra-Op Adjuncts (Intra-op Dexamethasone + Bupivacaine + Multimodal Pain Mgmt)	31	. %	PICO 12: Control (Multimodal Pain Mgmt)	24	. %	Author Reported	pval <0.001	Intra-Op Corticosteroid + Local Anesthetic Significant (P-value<.05)
Routman, H. D., 2017	Low Quality	VAS: pvalue only	1 days	PICO 12: Intra-Op Adjuncts (Intra-op Dexamethasone + Bupivacaine + Multimodal Pain Mgmt)	31	. %	PICO 12: Control (Multimodal Pain Mgmt)	24	. %	Author Reported	pval <0.001	Intra-Op Corticosteroid + Local Anesthetic Significant (P-value<.05)
Routman, H. D., 2017	Low Quality	Morphine Equivalents (mg): pvalue only	1 days	PICO 12: Intra-Op Adjuncts (Intra-op Dexamethasone + Bupivacaine + Multimodal Pain Mgmt)	31	. %	PICO 12: Control (Multimodal Pain Mgmt)	24	. %	Author Reported	pval <0.001	Intra-Op Corticosteroid + Local Anesthetic Significant (P-value<.05)