

# Defining the MCID for PROMIS pain and function for patients with rotator cuff tears initially treated non-operatively

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# Disclosures

- Dr. Eric Makhni
  - Stock/ownership of Protera Health and OutcomeMD
  - Editorial Arthroscopy
  - Committee AAOS and AOSSM
  - Royalties SLACK and Springer
  - NIH funding

# Background

- **Rotator cuff tears** among the **most common causes** of shoulder pain and dysfunction.<sup>1-3</sup>
- Conservative management most often attempted initially
- The **shared decision** to operate is **multifactorial**<sup>4</sup>
  - Age
  - Activity level
  - Pain and dysfunction
  - Tear characteristics



# Nonoperative treatment

- **Variable success** of nonoperative management<sup>5-9</sup>



- Khatri et al, AJSM 2019. **Rapid improvement** over **12 months** regardless of treatment.



- Tashjian et al, JSES 2009. Determined the MCID for **visual analog scale (VAS)** after 6 weeks of nonop  
– **Only 56%** (46/81) achieved MCID (1.37 cm)



# Nonoperative treatment



- Song et al, JBJS 2020. **Nonoperative** tears **more likely to achieve MCID** for Shoulder Pain and Disability Index (SPADI) at **3.25 months** compared to surgery<sup>7</sup>
  - However, **surgery** group more likely to achieve **significant reductions in SPADI and ASES at 15 and 24 months**
- No studies have established the **MCID** for **Patient-Reported Outcome Measurement Information System (PROMIS)** for **nonoperative** management of RCT's

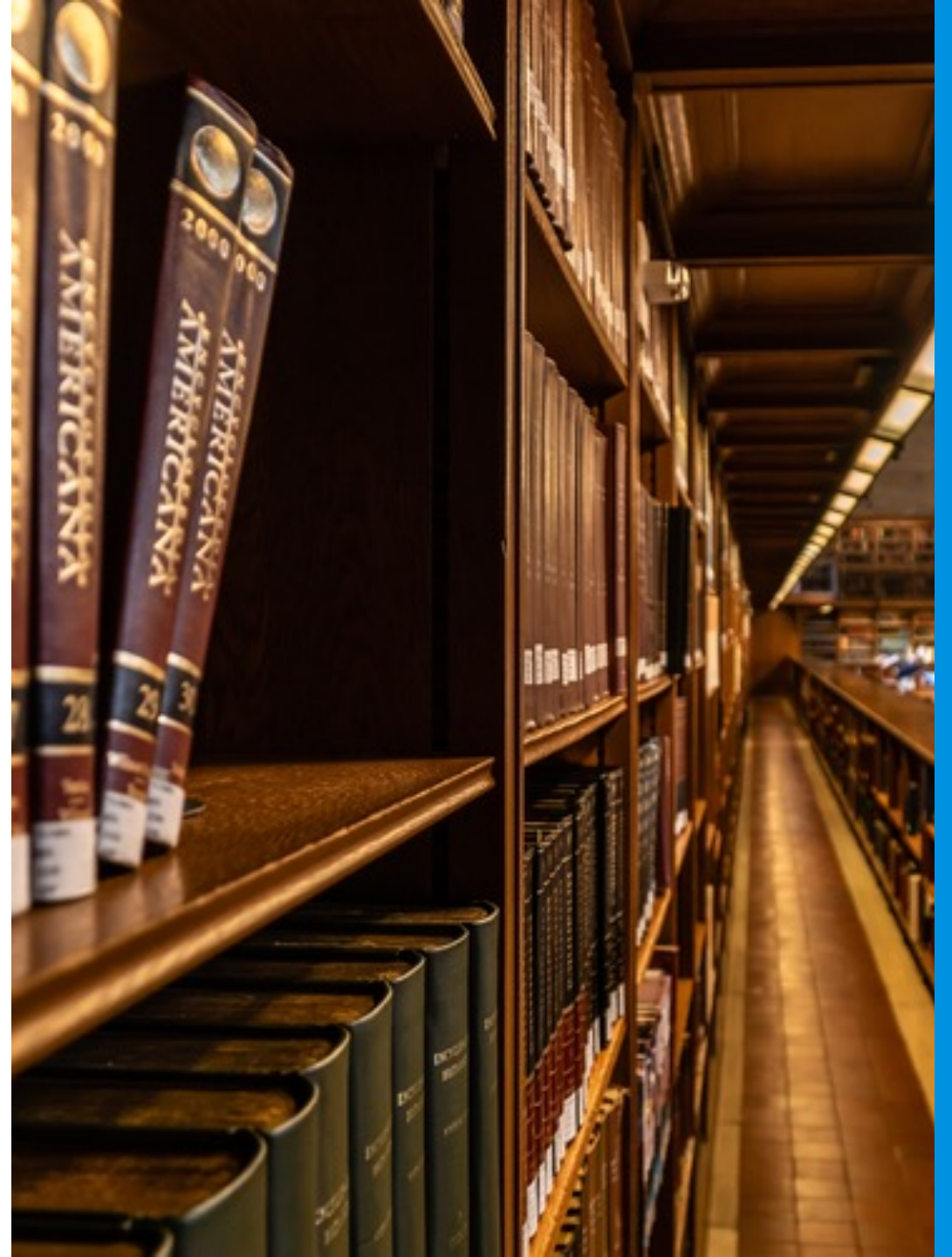
# PURPOSE

To determine which patients benefit from **conservative therapy** and **establish the MCID** for various **PROMIS assessments** for patients undergoing **nonoperative treatment of RCTs**.



# Methods

- **Retrospective** cohort study
- Nonoperatively managed patients with MRI or US-confirmed RCT from 1/2/2020-3/24/2021 in a single health system
- **Inclusion** criteria:
  - Initial course of rest, activity modification, physical therapy, and/or corticosteroid injection
- **Exclusion** criteria:
  - underwent surgery during the index study period
  - incomplete** follow up PROMIS assessments up to **6 months**
- MCID calculated using **distribution** technique



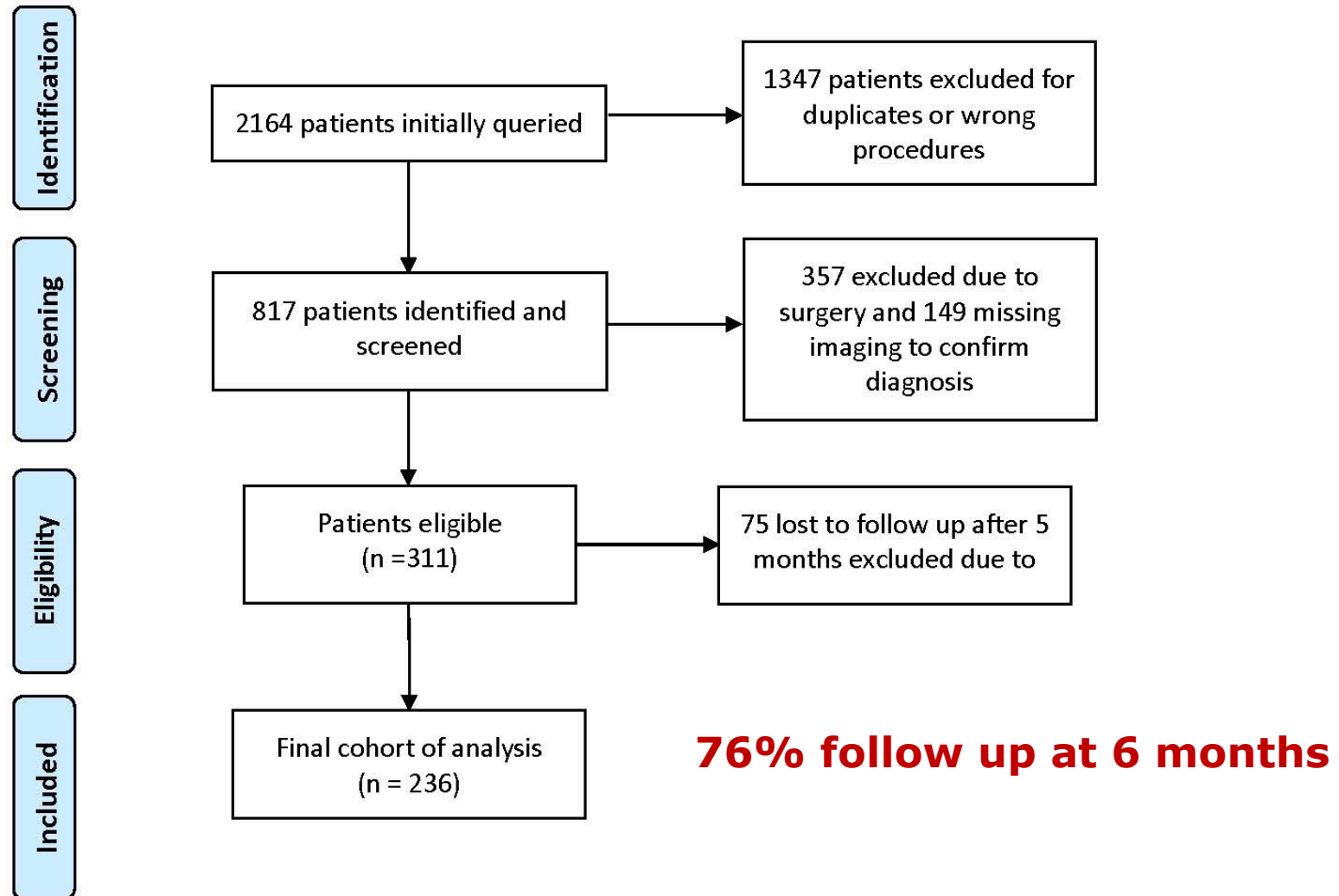
# RESULTS



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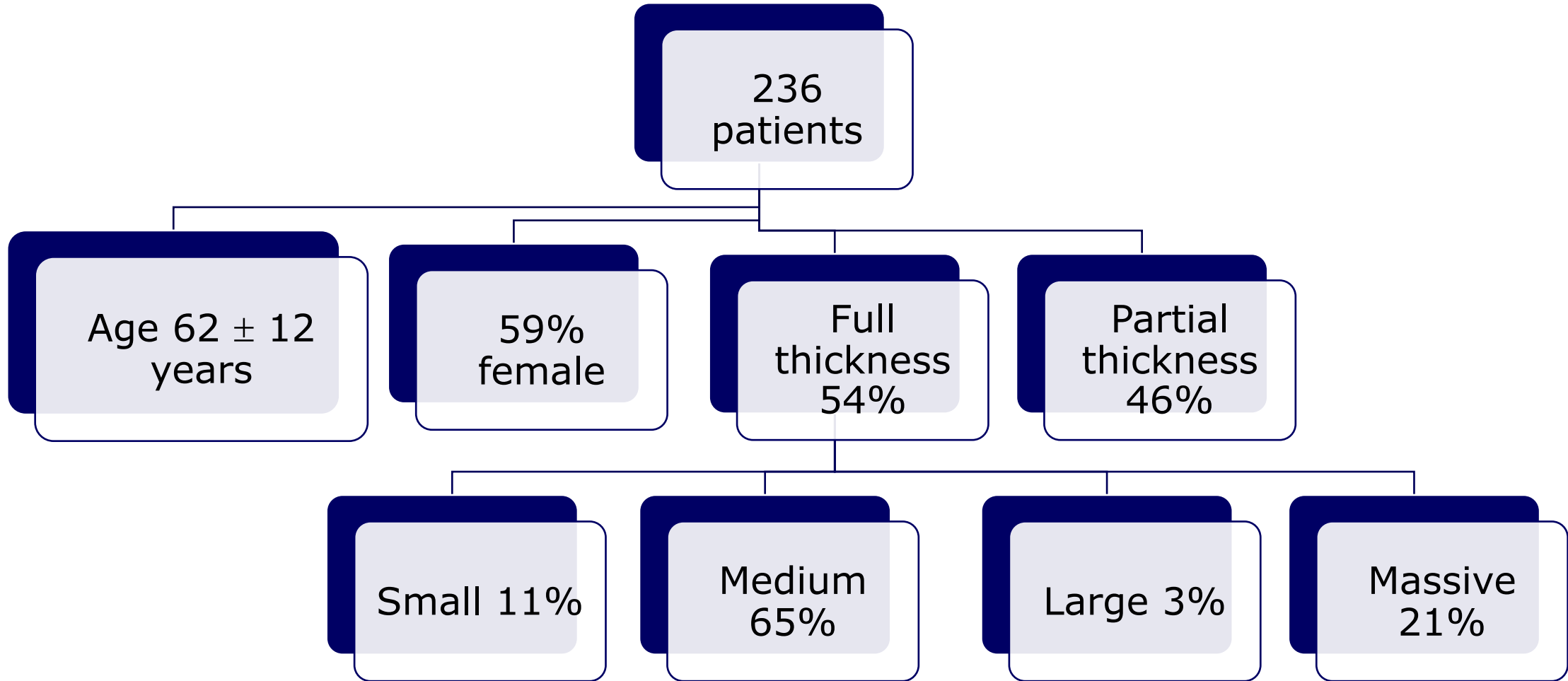
# Inclusion criteria and screening



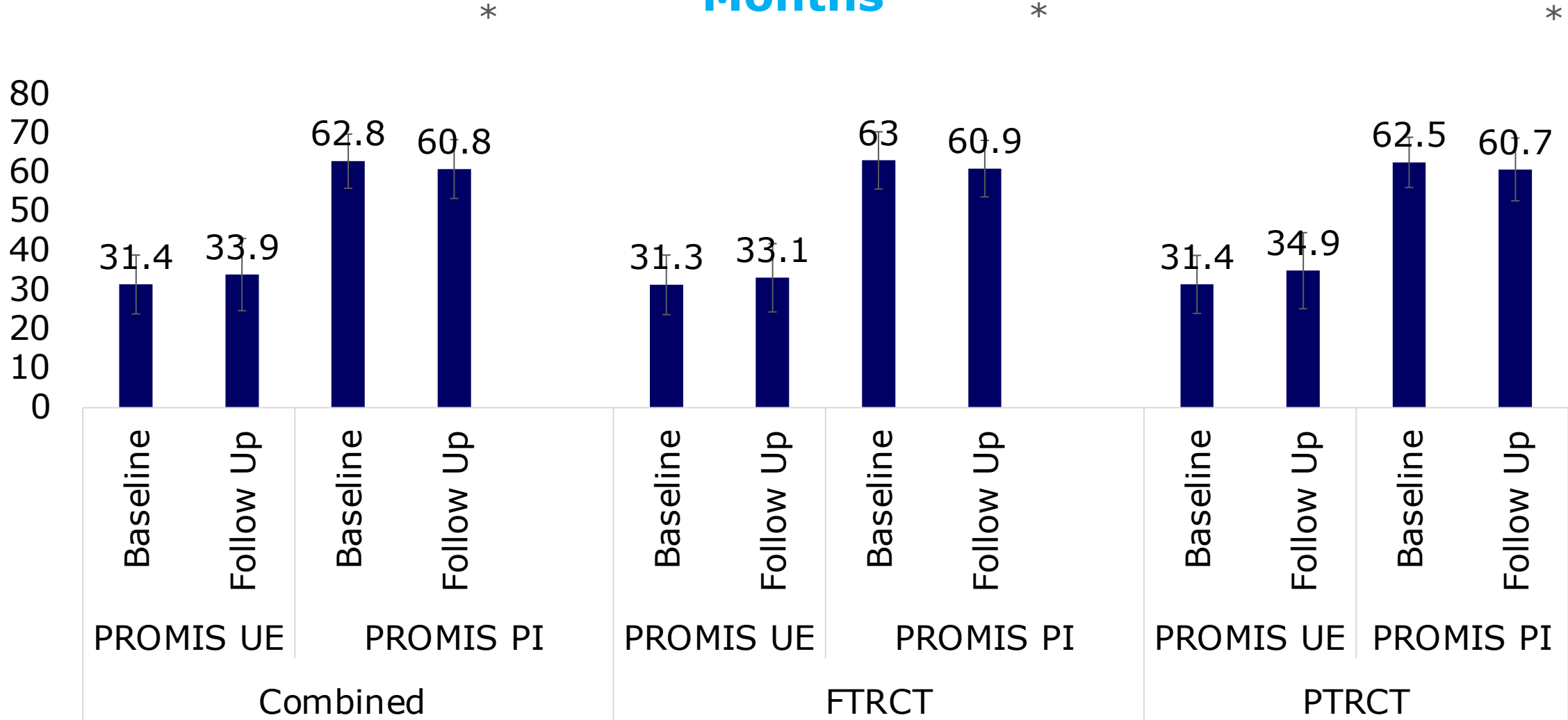
**Table 1. Patient Demographics of Combined Cohort**

Characteristics	Mean (%)	SD
Age	61.52	11.92
Sex		
Male	97 (41.1)	
Female	139 (58.9)	
Smoking Status		
Never	142 (60.2)	
Former	70 (29.7)	
Current	20 (8.5)	
Unknown	4 (1.7)	
Race		
White/Caucasian	135 (58.7)	
Black/African American	82 (35.7)	
Asian	10 (4.3)	
Arab American	1 (0.4)	
Other	2 (0.9)	
Employment		
Employed	108 (45.8)	
Retired	37 (15.7)	
Unemployed	19 (8.1)	
Unknown	72 (30.5)	
Follow-up (days)	147.6	113.44
Tear Type		
Full-Thickness	128 (54.2)	
Partial-Thickness	108 (45.8)	
Laterality		
Left	90 (38.1)	
Right	145 (61.4)	
Left + Right	1 (0.4)	
Treatment		
Physical Therapy	121 (51.3)	
Physical Therapy + Steroid Injection	3 (1.3)	
Steroid Injection	98 (41.5)	
Steroid Injection + Opioids	4 (1.7)	
Opioids	10 (4.2)	
BMI	31.11	6.92

# Demographics

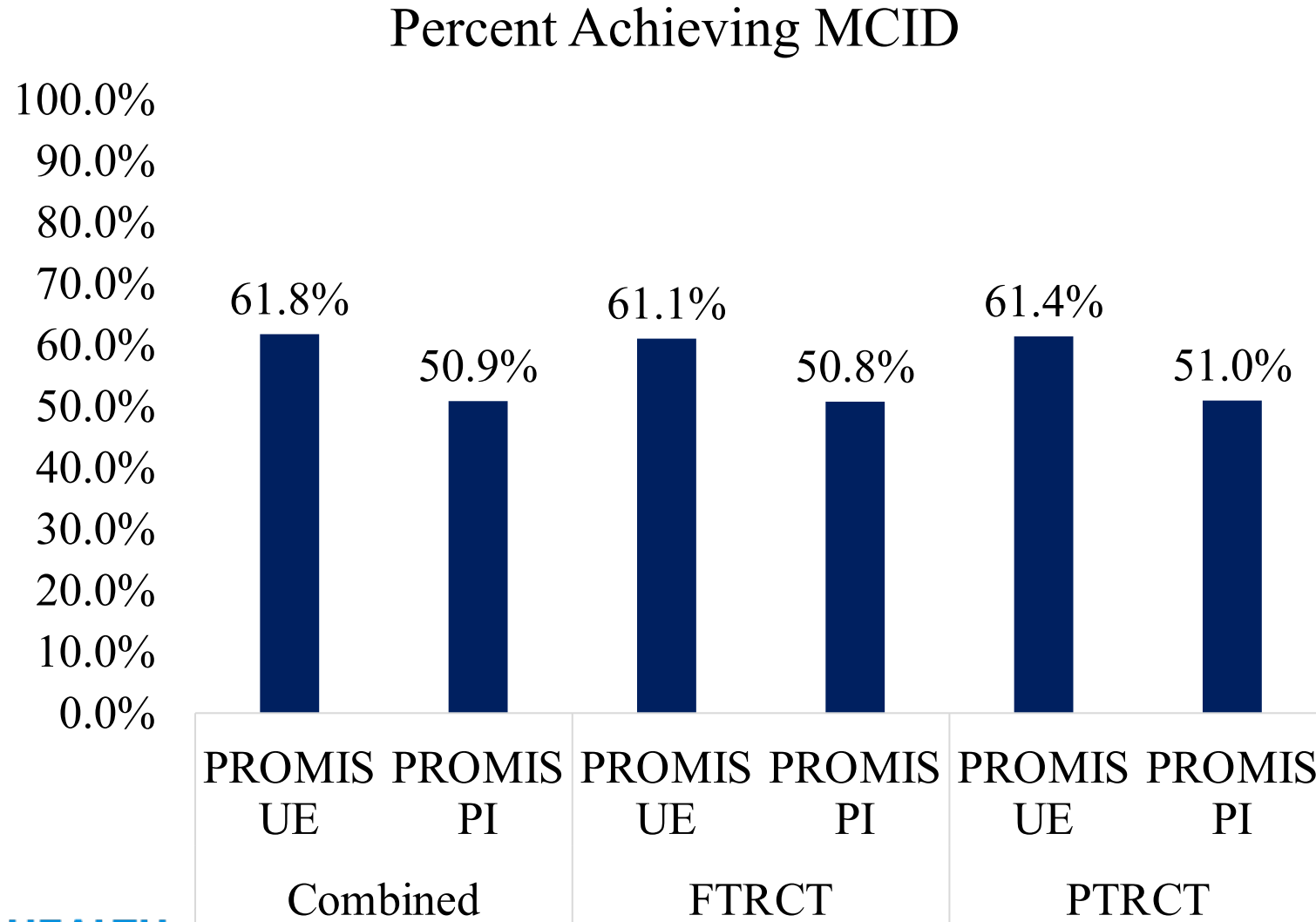


# Baseline and Follow-Up PROMIS Scores at 6 Months



**\*Statistically significant improvements found at 6 months for all groups.**

# Percent Achieving MCID after 6 months



**Table 4 Predictors of achieving MCID for PROMIS UE after 6 months for full-thickness rotator cuff tear**

Covariate	Odds Ratio (95% CI)	OR P-value
Pretreatment PROMIS UE	1.05 (0.95-1.15)	0.4
Pretreatment PROMIS PI	1.04 (0.96-1/13)	0.3
Age	1.00 (0.93-1.08)	0.9
BMI	0.98 (0.90-1.06)	0.6
Sex		
Female	0.25 (0.07-0.88)	<b>0.03</b>
Male	-	-
Race		
African American/Black	5.97 (1.57-22.73)	<b>0.01</b>
Other	2.11 (0.08-58.79)	0.6
White	-	-
Treatment		
Steroid Injections	1.05 (0.31-3.55)	0.9
Steroid Injections + Opioids	0.35 (0.01-9.48)	0.5
Opioids	0.40 (0.01-13.22)	0.6
Physical Therapy	-	-

**Full thickness tears**

- Females less likely to achieve MCID
- Black patients more likely to achieve MCID

**Partial thickness tears**

- No significant differences were found

# Conclusions

- **Majority** of patients reported **improvements** in PROMIS scores over 6 months
- However, **only 62%** achieved MCID for **PROMIS UE**
- **51%** achieved MCID for **PROMIS PI**



Tramer et al, *JSES* 2022. After 2 years, **RCR** achieving MCID **81% for UE** and **65% for PI**.

**Is this level of success acceptable for nonoperative management?**

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**THANK YOU.**  
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