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5-2019

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PREOPERATIVE PROMIS SCORES PREDICT POSTOPERATIVE IMPROVEMENTS FOLLOWING ROTATOR CUFF REPAIR

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Introduction

- National Institute of Health developed the Patient Reported Outcomes Measurement Information System (PROMIS)[1]
  - Utilizes computer adaptive testing to efficiently measure outcomes across multiple domains[2]
- Preoperative outcome measures are predictive of post-operative improvement in hip and knee arthroplasty[3]
- PROMIS validated in assessing rotator cuff pathology[4]

Purpose

- Lack of evidence regarding preoperative outcome measurements as predictor of post operative improvement

- Are we able to predict failure to achieve a minimal clinically important difference (MCID) following surgery?

- **Hypothesis:** Patients with lower preoperative physical function, more pain and worse depression scores would have a higher likelihood of achieving MCID following rotator cuff repair.

Methods

- PROMIS forms administered pre-operatively and six months post-operatively following arthroscopic rotator cuff repair
  - Upper Extremity (PROMIS-UE), Pain Interference (PROMIS-PI) and Depression (PROMIS-D)
- Distribution based MCID
- Calculated thresholds predictive of achieving or failing to achieve MCID

RESULTS

- 80 patients included in final analysis
- Patients meeting MCID:
  - PROMIS-UE: 76.25%
  - PROMIS-PI: 88.75%
  - PROMIS-D: 53.75%

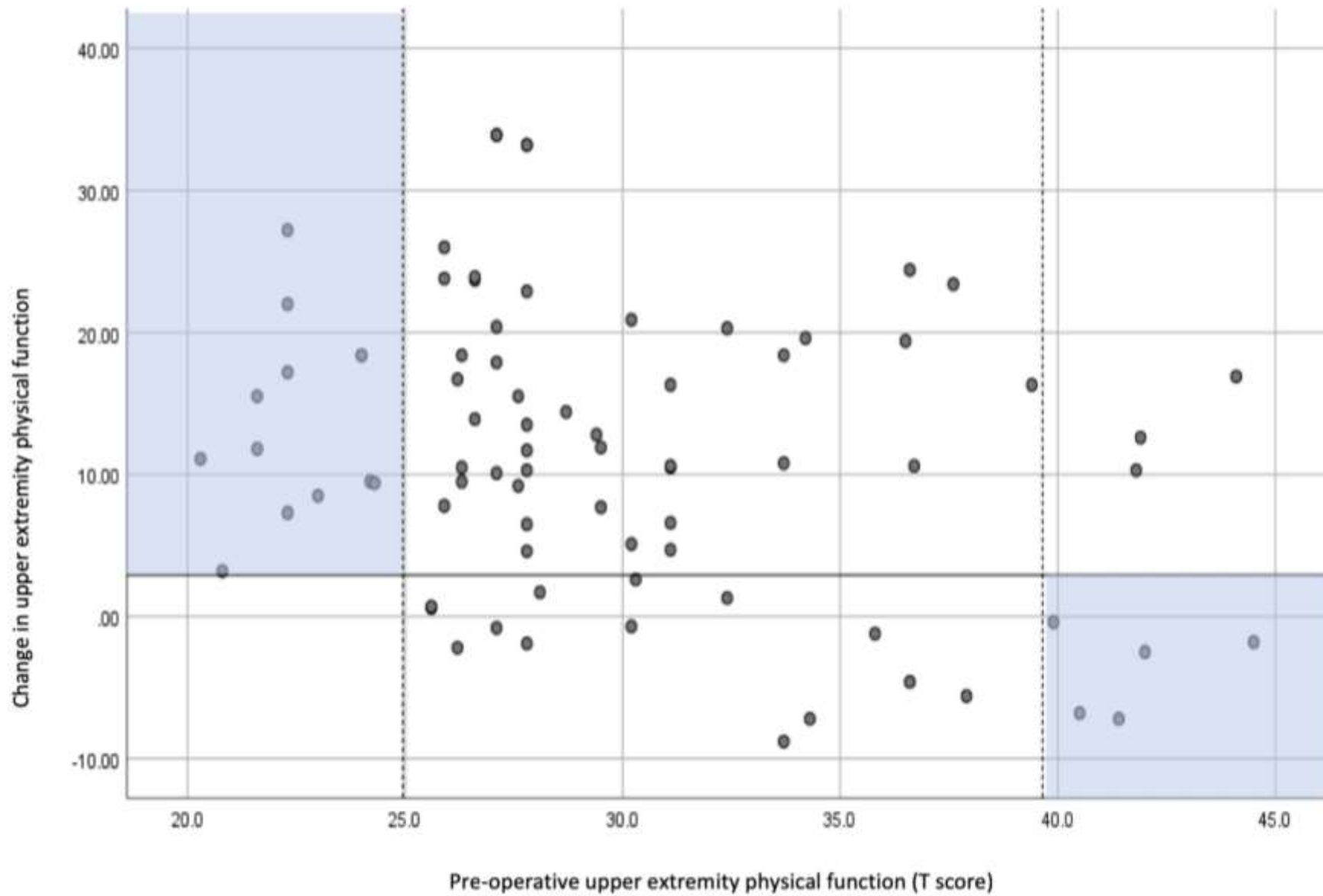|	Pre-operative	Post-operative	Change
Upper Extremity	29.88 ± 5.84	41.26 ± 10.14	+11.38
Pain	62.74 ± 4.51	50.34 ± 10.39	-12.40
Depression	47.25 ± 9.07	40.83 ± 10.63	-6.42

* Mean changes in each domain statistically significant (P<.01)

Prognostic cutoffs for those likely to achieve MCID

	Clinical Cutoff	Pre-cutoff Probability	Post-Cutoff Probability
Upper Extremity	<24.95	76.25%	100%
Pain	>65.65	88.75%	100%
Depression	>56.45	53.75%	90.90%

Prognostic cutoffs for those unlikely to achieve MCID

	Clinical Cutoff	Pre-cutoff Probability	Post-Cutoff Probability
Upper Extremity	>39.65	32.75%	37.50%
Pain	<54.35	11.25%	75.00%
Depression	<39.35	46.25%	56.78%

Change in upper extremity physical function

Pre-operative upper extremity physical function (T score)

DISCUSSION

- Rotator cuff repair successful in improving physical function, pain and mental health
- Outcomes reporting adds to clinical decision making
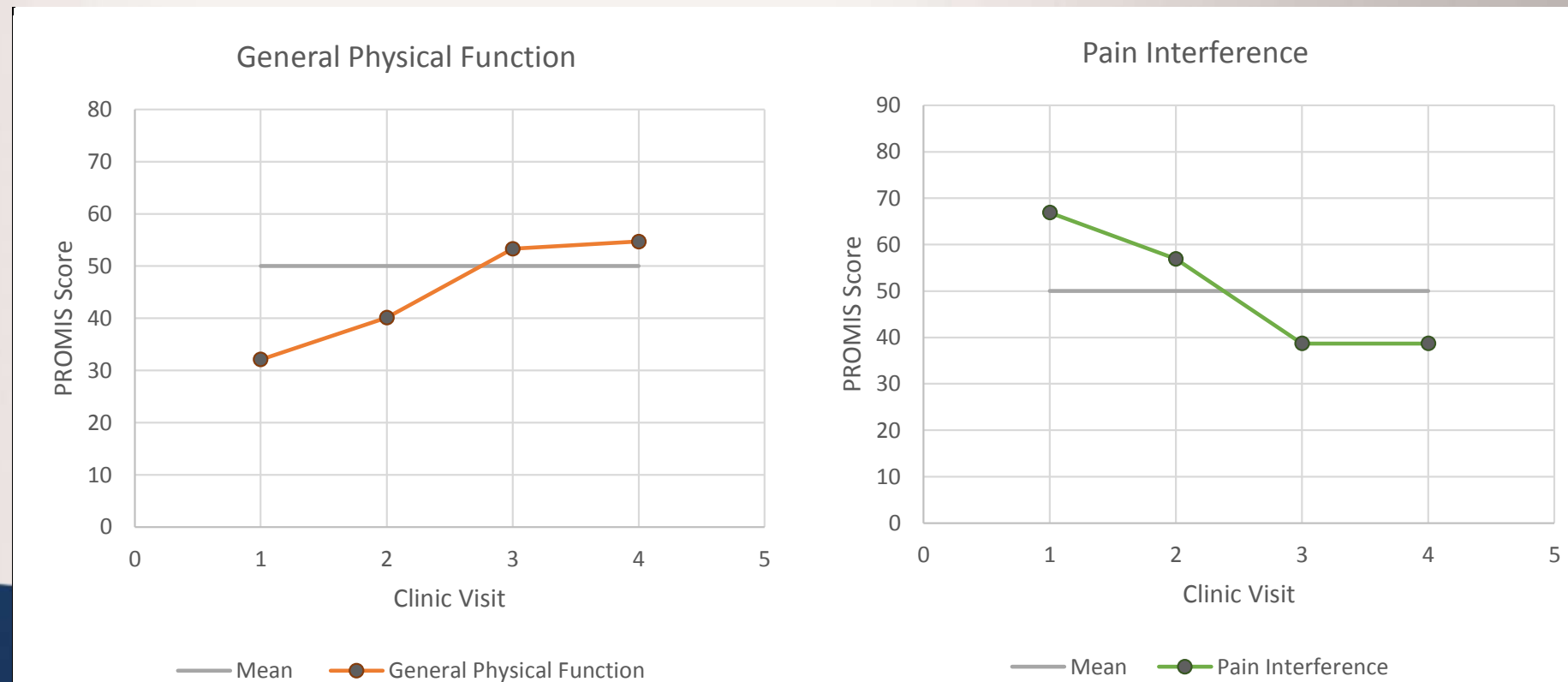
Conclusions

- Patients undergoing rotator cuff repair showed significant improvements in all PROMIS domains exceeding MCID

- Applying cutoffs increased likelihood of achieving MCID

- PROMIS is an additional assessment tool for clinical decision making

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