ePoster #110

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Revision Hip Arthroscopy Shows Slower Time to Achievement of Clinically Significant Outcomes

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Disclosures

Michael J. Vogel, BS: Nothing to Disclose.

Alexander B. Alvero, BA: Nothing to Disclose.

Joshua Wright-Chisem, MD: Nothing to Disclose.

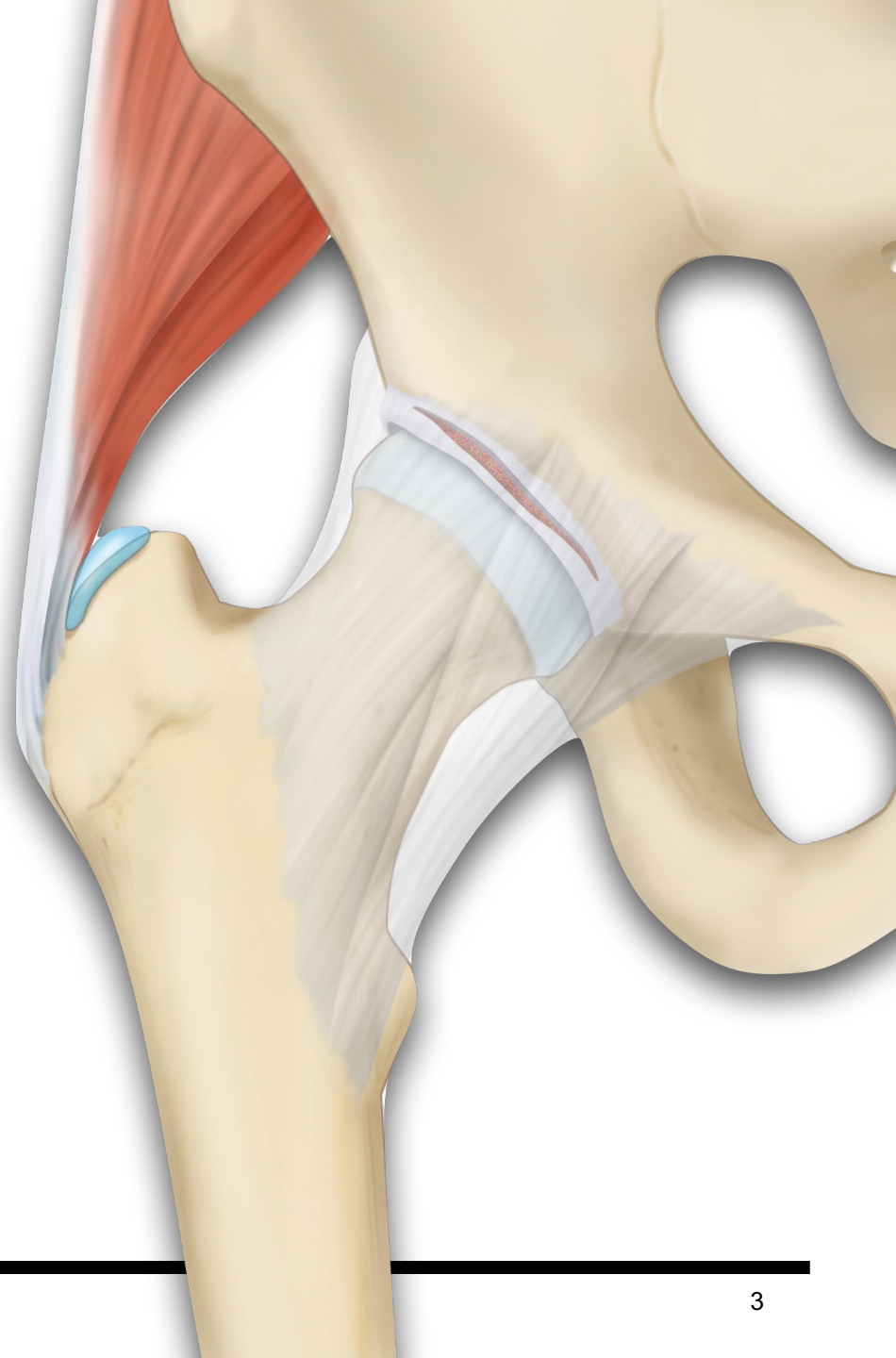
Shane J. Nho, MD, MS: AOSSM, Arthrex, AANA, Mitek, Ossur, Springer, Stryker.

Introduction

Primary and revision hip arthroscopy for femoroacetabular impingement syndrome (**FAIS**) show **successful outcomes** at 2-year and 5-year follow-up.[1,2]

The **time to achievement** of minimal clinically important difference (**MCID**) and substantial clinical benefit (**SCB**) has been described after primary hip arthroscopy for FAIS.[3]

Limited studies compare time to achievement of MCID and SCB **between primary and revision patients**.



Objectives

1) To investigate the **time to achievement** of **MCID** and **SCB** after **primary and revision** hip arthroscopy for **FAIS**.
2) To identify **predictors** of delayed MCID and SCB achievement.

Hypotheses

1) Revision hip arthroscopy patients would show **slower time to MCID and SCB** achievement compared to primary patients.
2) Predictors of delayed MCID and SCB achievement would include demographic, **revision status**, and intraoperative characteristics.

Methods

Patient Selection

- Inclusion criteria:
  - Hip arthroscopy for FAIS between Jan. 2012 and June 2021.
  - Complete PROs: preop., 6-month, 1-year, and 2-year.
    - Hip Outcome Score - Activities of Daily Living (HOS-ADL).
    - Hip Outcome Score - Sports Subscale (HOS-SS).
- Exclusion criteria:
  - Connective Tissue Disorder (Ehlers Danlos Syndrome).
  - Concomitant hip procedures (Gluteus Repair).
  - Tönnis >1.
  - Developmental Hip Disorders (SCFE, LCP).
  - Lacking complete PROs.

Methods

Statistical Analysis

- Clinically Significant Outcomes (CSO): (MCID; SCB)
  - Primary Group: HOS-ADL (8.3; 93.3), HOS-SS (14.5; 84.4).
  - Revision Group: HOS-SS (7.0; 88.2), HOS-SS (13.1, 82.4).

- Kaplan-Meier Survival Analysis:
  - Time to Achievement of MCID and SCB.
  - Log-Rank Test Comparisons.

- Multivariate Cox Regressions:
  - Identify Independent Predictors of Delayed MCID and SCB Achievement.

Results

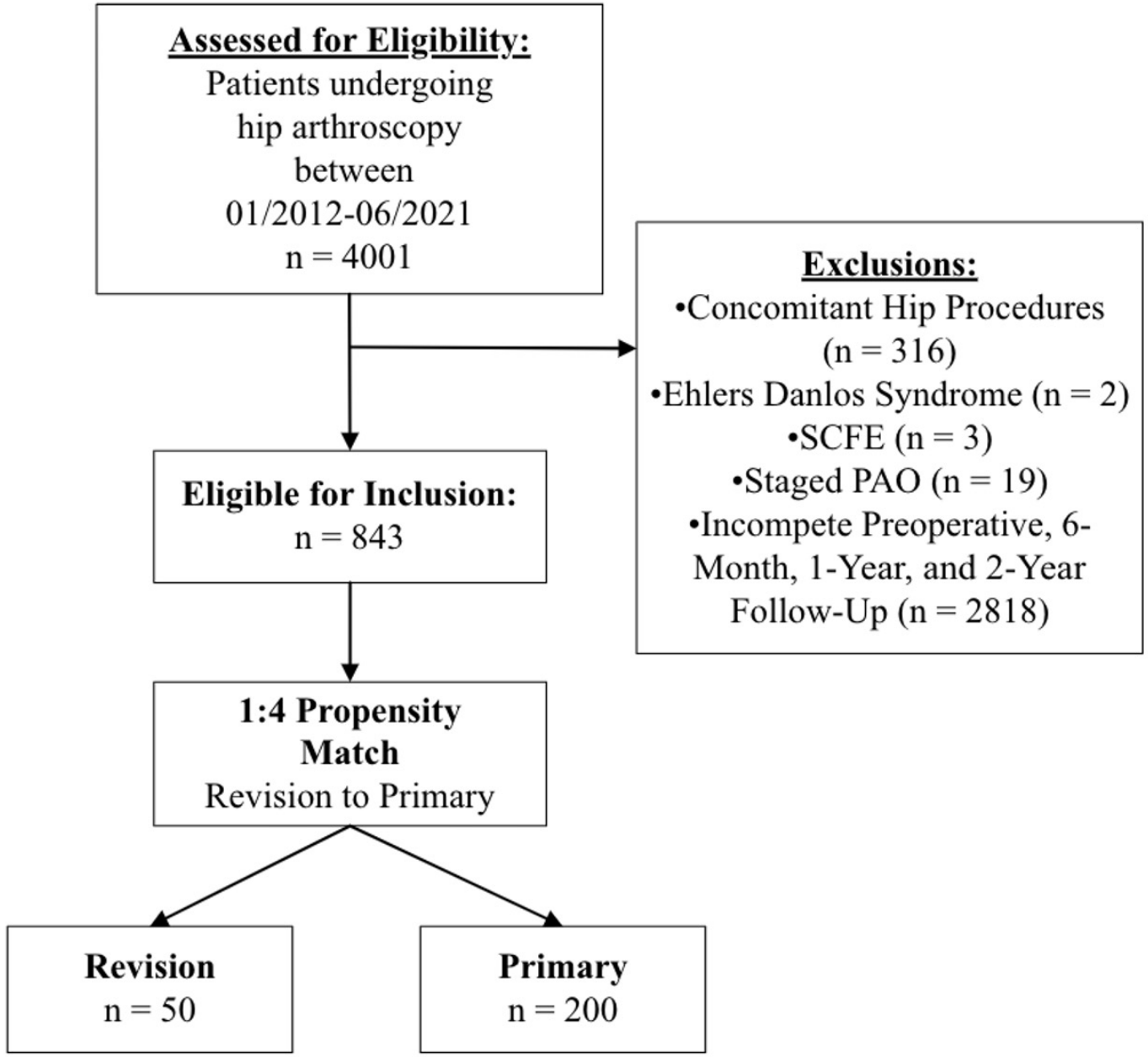
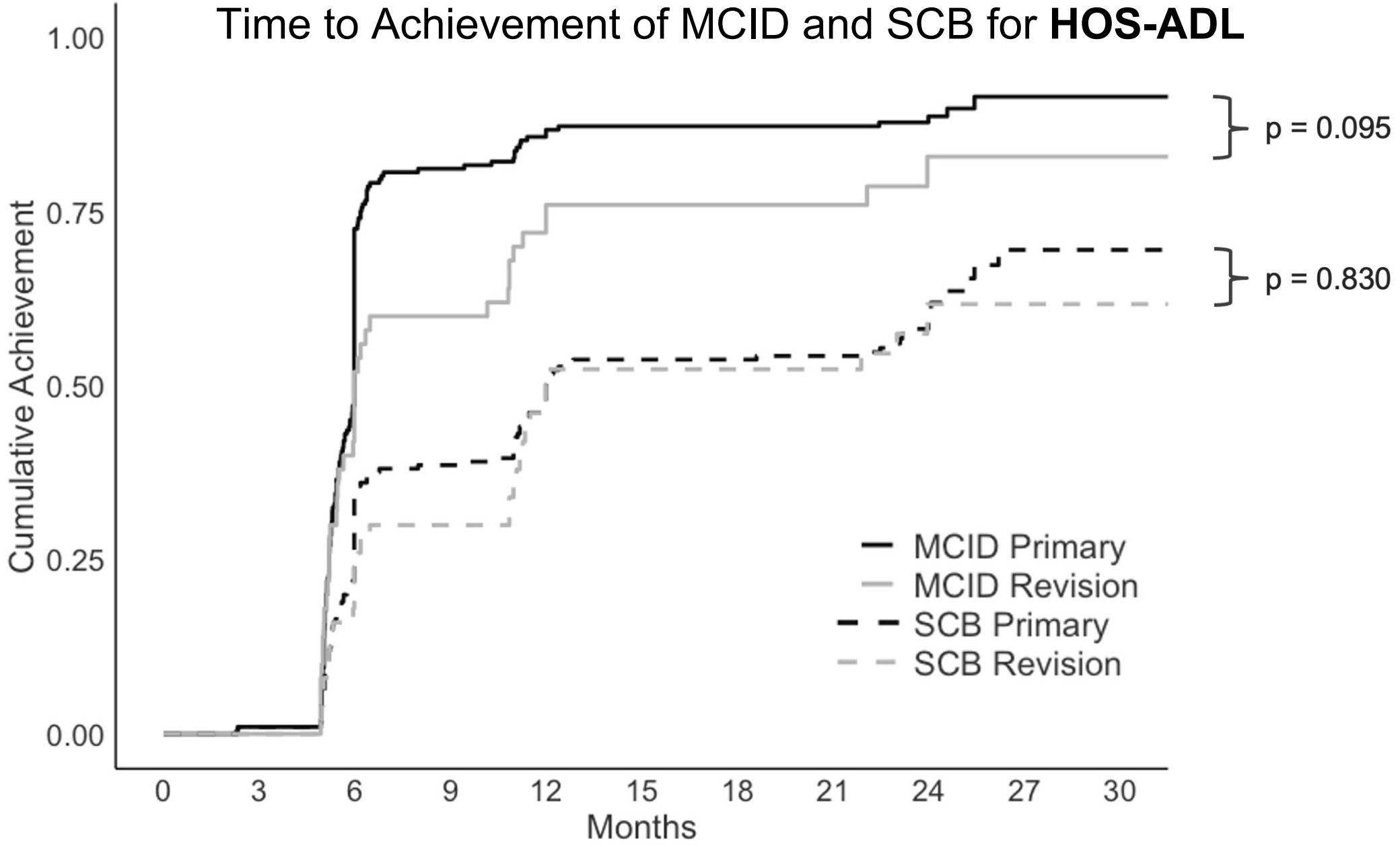

Assessed for Eligibility:
Patients undergoing hip arthroscopy between 01/2012-06/2021
n = 4001
Exclusions:
•Concomitant Hip Procedures (n = 316)
•Ehlers Danlos Syndrome (n = 2)
•SCFE (n = 3)
•Staged PAO (n = 19)
•Incompete Preoperative, 6-Month, 1-Year, and 2-Year Follow-Up (n = 2818)
Eligible for Inclusion:
n = 843
1:4 Propensity Match
Revision to Primary
Revision
n = 50
Primary
n = 200

Table 1. Patient Characteristics

	Primary	Revision	P-value
	n = 200	n = 50	
		Demographics	
Age (years)	29.7 ± 11.4	30.1 ± 11.6	0.816
Female	84%	86%	0.83
BMI (kg/m^2)	25.9 ± 14.1	25.4 ± 3.7	0.806
Regular Physical Activity	87.4%	58.5%	**< 0.001***
Pain Duration ≥ 2 Years	25.0%	31.1%	0.453
		Radiographics	
Pre. Alpha Angle	55.0 ± 13.5	52.7 ± 13.9	0.357
Post. Alpha Angle	38.4 ± 4.3	38.6 ± 7.0	0.837
LCEA	30.7 ± 6.3	29.7 ± 6.4	0.355
Tönnis Angle	6.75 ± 4.77	6.76 ± 4.48	0.989
Tönnis Grade			1.000
0	90.5%	88.0%	
1	9.5%	12.0%	
		Preoperative PRO Scores	
HOS-ADL	60.4 ± 18.2	64.5 ± 17.1	0.142
HOS-SS	41.6 ± 21.0	37.9 ± 23.5	0.289
		Intraoperative Findings	
Ace. Defect (Beck 3-4)	14.0%	16.0%	0.660
Fem. Defect (ICRS 3-4)	2.5%	2.0%	1.000

BMI, Body mass index; LCEA, lateral center edge angle; PRO, Patient-reported outcome.

Time to Achievement of MCID and SCB for **HOS-ADL**



Time to Achievement of MCID and SCB for **HOS-SS**

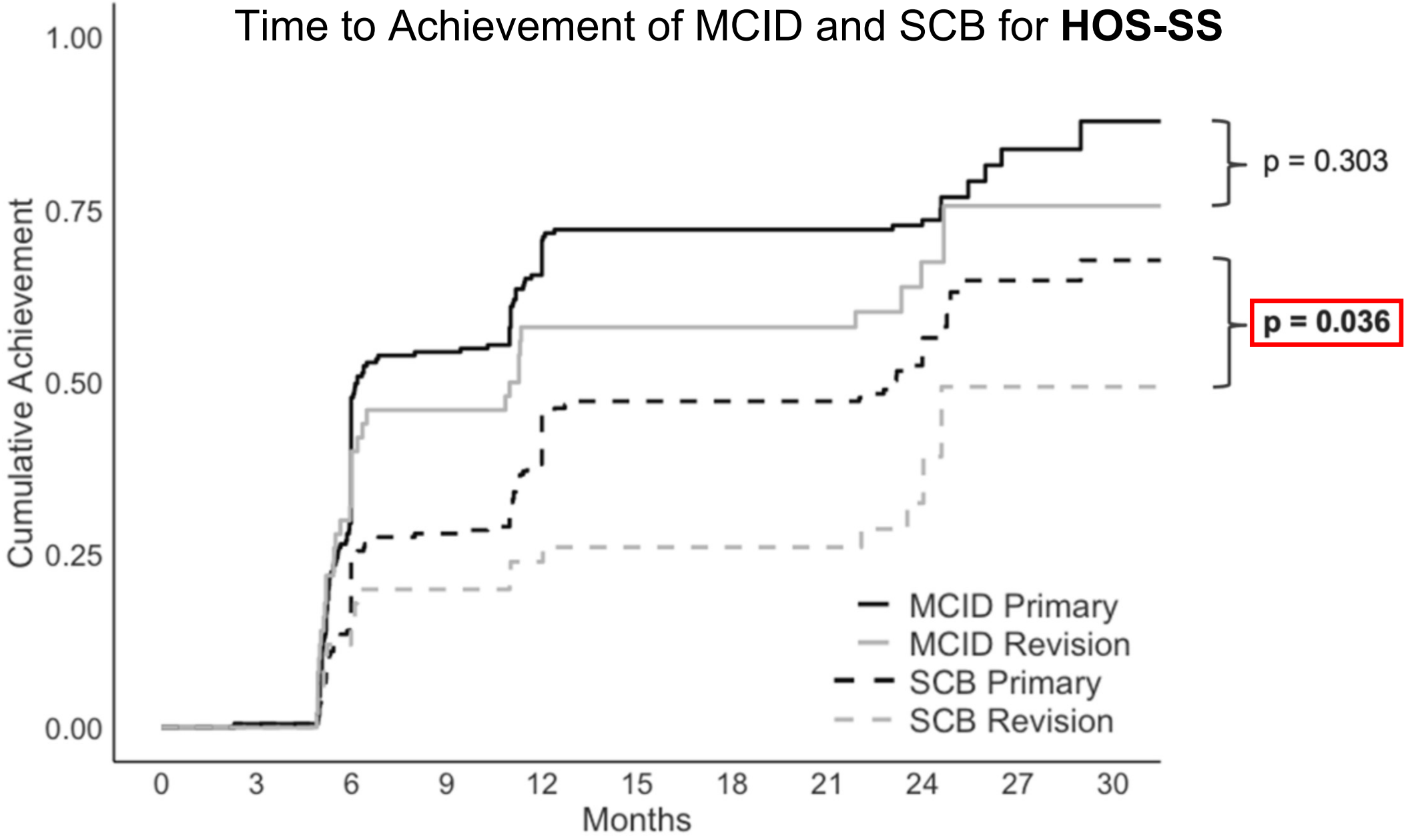


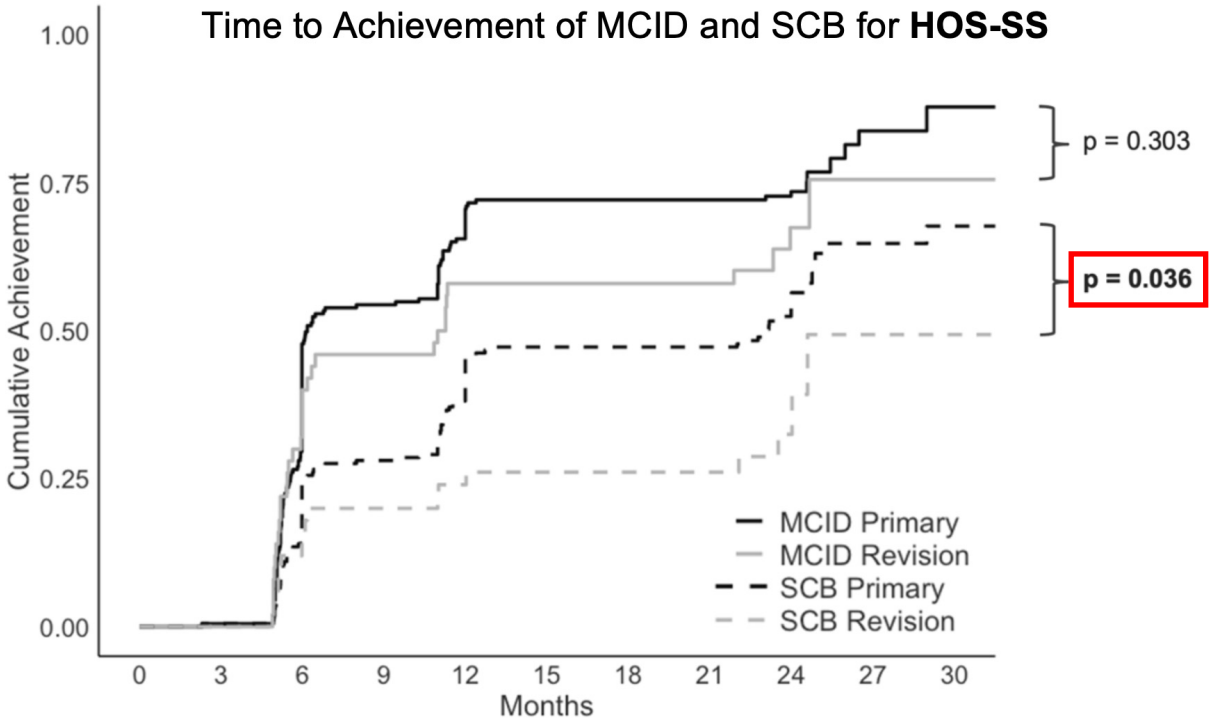
Table 2. Independent Predictors of Delayed MCID and SCB Achievement.

	Hazard Ratio	95% CI	P-value
		MCID *for HOS-ADL*	
Physical Activity	0.65	0.44 – 0.96	**0.032**
Preoperative HOS-ADL	1.02	1.01 – 1.03	**<0.001**
		SCB *for HOS-ADL*	
Preoperative HOS-ADL	0.98	0.97 – 0.99	**<0.001**
		MCID *for HOS-SS*	
Preoperative HOS-SS	1.01	1.01 – 1.02	**<0.001**
		SCB *for HOS-SS*	
Age	1.02	1.01 – 1.04	**0.047**
BMI	1.04	1.01 – 1.09	**0.041**
Revision Status	1.82	1.06 – 3.13	**0.028**
Preoperative HOS-SS	0.99	0.98 – 0.99	**0.002**

Significant independent predictors from multivariate cox regression list.

Conclusion

1. Revision hip arthroscopy patients showed **delayed achievement** of SCB for HOS-SS compared to primary patients.
2. Preoperative scores, age, BMI, physical activity, and **revision status** were **independent predictors** of **delayed CSO achievement**.



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References

1) Jan, Kyleen, Thomas W. Fenn, Daniel J. Kaplan, and Shane J. Nho. “Patients Maintain Clinically Significant Outcomes at 5-Year Follow-Up After Hip Arthroscopy for Femoroacetabular Impingement Syndrome: A Systematic Review.” *Arthroscopy: The Journal of Arthroscopic & Related Surgery: Official Publication of the Arthroscopy Association of North America and the International Arthroscopy Association* 39, no. 8 (August 2023): 1869-1881.e1. https://doi.org/10.1016/j.arthro.2023.04.021.

2) Maldonado, David R., Cynthia Kyin, Philip J. Rosinsky, Jacob Shapira, Samantha C. Diulus, Ajay C. Lall, and Benjamin G. Domb. “Minimum 5-Year Outcomes for Revision Hip Arthroscopy With a Prospective Subanalysis Against a Propensity-Matched Control Primary Group.” *The American Journal of Sports Medicine* 49, no. 8 (July 1, 2021): 2090–2101. https://doi.org/10.1177/0363546521013006.

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