



INTERNATIONAL SOCIETY  
FOR HIP ARTHROSCOPY

# Patient-Reported Outcome Score Utilization in Arthroscopic Hip Preservation: We're All Doing It Differently, If At All

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# Background

Why is outcome score collection important?

- Patient-reported outcome (PRO) scores can be categorized as:
  - Joint-specific
  - Limb-specific
  - Disease-specific
  - Activity-based
  - General health quality of life
  - Pain-based
- There currently exists much debate surrounding the “best” PRO for patients with non-arthritic hip diagnoses
- In Hip Preservation Surgery, PRO surveys provide an informative glimpse into the practice patterns of clinicians who are advancing a specialty with no clear gold standards

# Background

## Current Challenges to Outcome Score Collection

Issue	Challenge	What is needed?
Which scores should be collected?	No perfect score exists – Over one dozen are frequently used in arthritic and non-arthritic conditions	Scores with optimal psychometric properties – development, reliability, responsiveness, validity
When should scores be collected?	Must be frequent enough to properly monitor but not be overly burdensome to patient, induce fatigue, and decrease compliance	Non-redundant, convenient, and quick questionnaires that may be given frequently enough pre- and post-operative, in order to increase the amount of data, but not so frequent that compliance drops
Who is responsible for collecting scores?	For PROs, clinician involvement introduces bias, takes a significant amount of time to collect, may require other staff to collect	Automated reminders that may be completed at patient's convenience so office involvement is minimal
What is the best platform for collecting scores?	Storage and analysis of paper forms are logistically sub-optimal. Electronic platforms may be costly, inaccessible to select patient populations	Inexpensive, secure, user-friendly, universally accessible electronic databases integrated in the medical record

# Objectives

- With regards to outcome scores utilized by hip preservation surgeons worldwide, the purpose of this investigation was to determine:
  1. Which scores are being used?
  2. When are the outcome scores administered?
  3. By whom are the outcome scores administered?
  4. Via what platform are the scores administered?

# Methods

## Subject selection

- Seven-question, IRB-exempt, HIPAA-compliant, cross-sectional survey was conducted via E-mail using SurveyMonkey<sup>®</sup>
- E-mailed to hip preservation surgeons identified via one of four methods:
  1. Members of ISHA
  2. Members of ANCHOR
  3. Members of MAHORN
  4. PubMed search of authors identified via “hip arthroscopy” algorithm
- 155 total surgeons were contacted

# Methods

## SurveyMonkey Questionnaire

Question	Survey Prompt
#1	How many years have you been in practice?
#2	How many arthroscopic hip surgeries do you perform per year?
#3	How many open hip surgeries do you perform per year?
#4	Which hip outcome scores do you collect? Please select all that apply. SF-12 SF-36 Harris Hip Score Modified Harris Hip Score VAS (Visual Analog Scale) Oxford Hip Score HOOS (Hip Disability and Osteoarthritis Outcome Score) HOS (Hip Outcome Score - Sports, Activities of Daily Living) HAGOS (Copenhagen Hip and Groin Outcome Score) WOMAC (Western Ontario and McMaster University) iHOT-12 (International Hip Outcome Tool) iHOT-33 (International Hip Outcome Tool) NAHS (Non-Arthritic Hip Score) Oswestry Disability Index Low-back Outcome Score Zung Depression Index Beck Depression Index Tegner Activity Scale Marx Activity Score UCLA Activity Score AAOS Hip & Knee Outcome Score Hamstring Outcome Score MACTAR (McMaster Toronto Arthritis Patient Preference Disability Questionnaire) AIMS (Arthritis Impact Measurement Scale) FJS-12 (Forgotten Joint Score 12) Lower Extremity Function Scale GROC (Global Rating of Change) Vail Hip Score VR-12 (Veteran Rand 12 Item General Health Survey) VR-33 (Veteran Rand 33 Item General Health Survey) Euroqol EQ5D-3L Euroqol EQ5D-5L None Other (please specify)

Question	Survey Prompt
#5	When do you collect your hip outcome scores? Please select all that apply. Annually New Patient Visit Pre-operatively 2 Weeks Post-operatively 4 Weeks Post-operatively 6 Weeks Post-operatively 3 Months Post-operatively 6 Months Post-operatively 9 Months Post-operatively 12 Months Post-operatively Other (please specify)
#6	How do you collect your hip outcome scores? Please select all that apply. Paper Records Electronic Medical Records Electronic Research Database Other (please specify)
#7	Who collects your hip outcome scores? Please select all that apply. Research Assistant Patient gets automated reminders and completes them on their own Nurse Doctor Fellow/Resident/Student Physician Assistant Other (please specify)

- Descriptive statistics were calculated for each question
- Continuous variable data reported as “mean  $\pm$  standard deviation”
- Categorical data reported as frequencies with percentages
- Heterogeneity of outcome score utilization assessed using  $I^2 (Q-dF)/(Q) \times 100$ , where Q is the chi-squared statistic
  - $I^2$  75-100% represented considerable heterogeneity



# Results

Survey respondent characteristics

- 56 surgeons responded to the survey (36% response rate)
- Average of 169  $\pm$  131 (range 0-700) arthroscopic hip procedures per year
- Average of 65  $\pm$  109 (range 0-500) open hip procedures per year
- Average of 13  $\pm$  9 (range 1-35) years of experience in the field
- 87% of respondents utilized *at least* one or more hip-specific, leg-specific, generalized quality of life, or activity level measurement outcome score
- 7 out of 56 responses came from outside the US: Canada (2), UK (2), Switzerland (1), Germany (1), and Australia (1)

# Results

Hip Outcome Score Questionnaires used by respondents

Hip Joint-Specific Outcome Scores	n(max =56)	% response
<b>Modified Harris Hip Score</b>	<b>26</b>	<b>46.4</b>
iHOT-12 (International Hip Outcome Tool)	23	41.1
HOS (Hip Outcome Score)	21	37.5
NAHS (Non-arthritis Hip Score)	10	17.9
Harris Hip Score	9	16.1
iHOT-33 (International Hip Outcome Tool)	8	14.3
WOMAC (Western Ontario and McMaster University)	7	12.5
HOOS (Hip Disability and Osteoarthritis Outcome Score)	7	12.5
Vail Hip Score	5	8.9
Oxford Hip Score	2	3.6
HAGOS (Copenhagen Hip and Groin Outcome Score)	1	1.8
FJS-12 Hip (Forgotten Joint Score)	1	1.8
AAOS Hip & Knee Outcome Score	0	0.0
Lower Extremity Limb-Specific Outcome Scores	n	%
<b>LE CAT (Lower Extremity Computerized Adaptive Tool)</b>	<b>1</b>	<b>1.8</b>
Lower extremity function scale	0	0.0
Hamstring outcome score	0	0.0
AAOS Hip and Knee Outcome Score	0	0.0
Disease-Specific Outcome Scores	n	%
MACTAR (McMaster Toronto Arthritis Patient Preference Disability Questionnaire)	0	0.0
AIMS (Arthritis Impact Measurement Scale)	0	0.0

General Health, Quality of Life, Pain, and Psychological Outcome Scores	n(max =56)	% response
<b>Visual Analog Scale</b>	<b>24</b>	<b>42.9</b>
SF-12 (Short Form 12)	17	30.4
SF-36 (Short Form 36)	10	17.9
EuroQol EQ5D-5L	5	8.9
VR-12 (Veteran Rand 12 Item General Health Survey)	2	3.6
Beck Depression Index	1	1.8
EuroQol EQ5D-3L	1	1.8
Zung Depression Index	0	0.0
GROC (Global Rating of Change)	0	0.0
VR-33 (Veteran Rand 33 Item General Health Survey)	0	0.0
Activity Scores	n	%
<b>Tegner Activity Scale</b>	<b>6</b>	<b>10.7</b>
<b>UCLA Activity Score</b>	<b>6</b>	<b>10.7</b>
Marx Activity Score	2	3.6
HSAS (Hip Sports Activity Score)	1	3.6
Spine Outcome Scores	n	%
<b>Low back outcome score</b>	<b>1</b>	<b>1.8</b>
Oswestry Disability Index	0	0.0
Do not collect hip outcome scores	7	12.5%

# Results

## Hip Outcome Score Collection Methods

When do you collect your hip outcome scores?	n(max =56)	% response
Annually	18	32.1
New Patient Visit	26	46.4
<b>Pre-Operatively</b>	<b>33</b>	<b>58.9</b>
2 weeks Post-Operatively	9	16.1
4 Weeks Post-Operatively	0	0.0
6 Weeks Post-Operatively	11	19.6
3 Months Post-Operatively	25	44.6
6 Months Post-Operatively	30	53.6
9 Months Post-Operatively	3	5.4
12 Months Post-Operatively	34	60.7
Other	10	17.9

  

How do you collect your hip outcome scores?	n	%
<b>Paper records</b>	<b>26</b>	<b>46.4</b>
Electronic Medical Records	13	23.2
Electronic Research Database	20	35.7
Other	9	16.1

  

Who collects your hip outcome scores?	n	%
<b>Research Assistant</b>	<b>19</b>	<b>33.9</b>
Patient gets automated reminders and completes on their own	17	30.4
Nurse	11	19.6
Physician	16	28.6
Fellow/Resident/Student	6	10.7
Physician Assistant	10	17.9
Other	14	25.0

# Conclusions

- This international survey investigation showed that most hip preservation surgeons collect PROs (87%)
- Considerable heterogeneity amongst the outcome scores utilized
  - 12 out of 13 available hip-joint specific questionnaires utilized by at least one surgeon
  - mHHS most frequently used hip score (46%); iHOT-12 (41%); HOS (38%)
  - SF-12 most frequently used general health score (30%)
  - Tegner (11%) and UCLA (11%) most frequently used activity scores
- Paper (46%) was most common collection platform
- Dedicated research assistant (34%) most common collector
- Recommend iHOT-12 or HOOS (or HAGOS) as the international standardized tool to be used for collecting hip outcome scores due to ease of use, reliability, validity, and responsiveness

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