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Functional Lower Extremity Evaluation in Return-To-Sport Rehabilitation Protocol Following Hip Arthroscopy in Collegiate Athletes: A Preliminary Study

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- I have no disclosures.

Background:

- The Functional Lower Extremity Evaluation (FLEE) is a validated assessment tool comprising various functional tests designed to assess lower limb function and symmetry.

- Gap in knowledge in RTS testing following hip arthroscopy.

- Purpose:
  - Proof-of-concept study was to assess the utility of the FLEE in RTS rehabilitation protocols for collegiate athletes after hip arthroscopy and to evaluate lower limb symmetry using FLEE components.

Methods:

- Retrospective review of collegiate athletes who underwent hip arthroscopy for femoroacetabular impingement (FAI)
- Demographic and biometric data were recorded.
- The 8-task FLEE was administered post-operatively.
- Percent limb symmetry was calculated for each FLEE component.
- RTS, re-injury and re-operations rates were monitored.

Control sequence:
1. Timed lateral step-down
2. Timed leap and catch

Hop sequence:
3. Single-leg hop for distance
4. Single-leg timed hop
5. Single-leg triple hop for distance
6. Crossover hop for distance

Endurance sequence:
7. Square hop test
8. LEFT

Results:

- 4 collegiate athletes.
- 3 males, 1 female.
- Mean age – 19 years.
- RTS at a mean of 5.75 months ± 1.44 months.
- No re-injuries or re-operations occurred at a mean follow-up of 52.89 months.

Table 1: Subject Demographic Data	
Age (year)	19
Sex (n)	
Male	3
Female	1
Height (cm)	186.37
Weight (Kg)	87.86
Injured Limb	
Right	2
Left	2
Limb Dominance (n)	
Right	4
Left	0
Sport (n)	
Football	2
Basketball	1
Swimming & Diving	1

Results:

Table 2: FLEE Performance Data

FLEE Components	Uninvolved Side	Involved Side	% Limb Symmetry
Timed Lateral Step-Down (sec)	113.00	122.50	108.41
Timed Leap and Catch (# of lines missed)	8.00	0.00	N/A
Single-Leg Hop for Distance (cm)	196.00	192.08	98.00
Single-Leg Timed Hop (sec)	1.71	1.67	97.95
Single-Leg Triple Hop for Distance (cm)	552.40	554.78	100.43
Crossover Hop for Distance (cm)	483.75	489.20	101.13
Square Hop Test	67.25	74.00	110.04
Lower Extremity Functional Test	109.40	110.80	101.28

- Athletes demonstrated improvements in all FLEE components following rehabilitation,
- Limb symmetry ranged from 97.95% to 110.04% across FLEE components.

Conclusions:

- The FLEE appears to be a valuable instrument for assessing lower extremity function and symmetry in college athletes undergoing RTS rehabilitation after hip arthroscopy.

- The findings in this pilot study suggest that the FLEE may aid in guiding individualized rehabilitation programs and monitoring progress towards RTS goals.

- Further research with larger cohorts, longitudinal follow-up and comparative studies is warranted to validate these findings.

References:

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