

Sport Specific Concomitant Injuries, Return To Sport Rates And Second ACL Injuries In Adolescents With ACL Reconstruction

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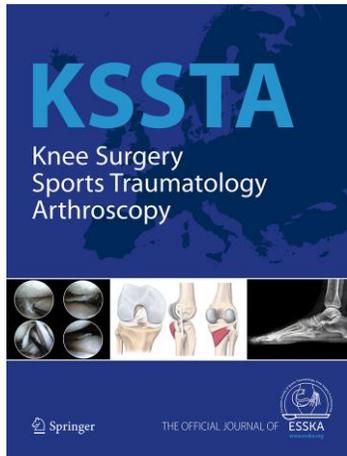


Disclosures

Philipp W. Winkler: Associate editor for Knee Surgery, Sports Traumatology, Arthroscopy (KSSTA).

Kristian Samuelsson: Member of the Board of Directors in Getinge AB.

Eric Hamrin Senorski: Assoc. editor of the Journal of Orthopaedics & Sports Physical Therapy.



“I never made it to the pros...” Return to sport and becoming an elite athlete after pediatric and adolescent anterior cruciate ligament injury—Current evidence and future directions

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Is it possible to participate in elite level sports after adolescent ACLR?

Objective

To evaluate differences in sport-specific concomitant injuries, clinical outcomes, return to sport (RTS) rates, and second ACL injuries after adolescent ACL reconstruction between the most popular sport disciplines and between females and males.

Hypothesis

Clinical outcomes, concomitant injuries, second ACL injuries and RTS rates after adolescent ACL reconstruction would vary by the type of sport.

Swedish Knee Ligament Register

Prospective data collection

>**90%** coverage for primary ACL reconstructions

Ahldén et al. AJSM. 2012.

Surgeon-related section

Patient-related section (KOOS subscales)

Inclusion

- 10-18 years at primary ACLR
- Autologous ACL graft
- Registered in the SKLR

Exclusion

- Fractures, nerve, blood vessel, or tendon injuries
- ACL repair
- >48 months between injury and ACLR



Study-specific Survey

Experts in the management of ACL injuries

Aim: To assess sport-specific variables (type of sport, level of sport, etc) and RTS rates

3 patient-specific questions and 30 knee-related questions

Successful Return to Sport:

Have you returned to the sport you were active in before your first ACL injury?

- **Yes**
- *No*

Elite Athlete

Which is the absolute highest level you have been competing in AFTER your ACL injury?

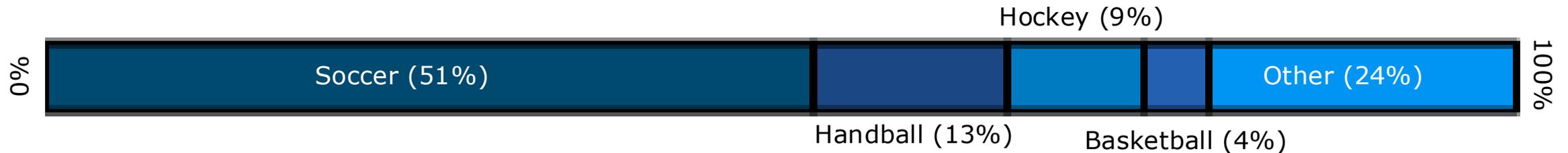
- **International competition; national team; world elite**
- **National elite (highest in your country)**
- **Elite (national classified leagues under the highest league / junior elite)**
- Active competition non-elite
- Motion and recreation

Statistical Analysis

- (1) Descriptive statistics
- (2) Preoperative vs. 1 and 2 years postoperative
- (3) Comparison between the most popular sport disciplines and between males and females.

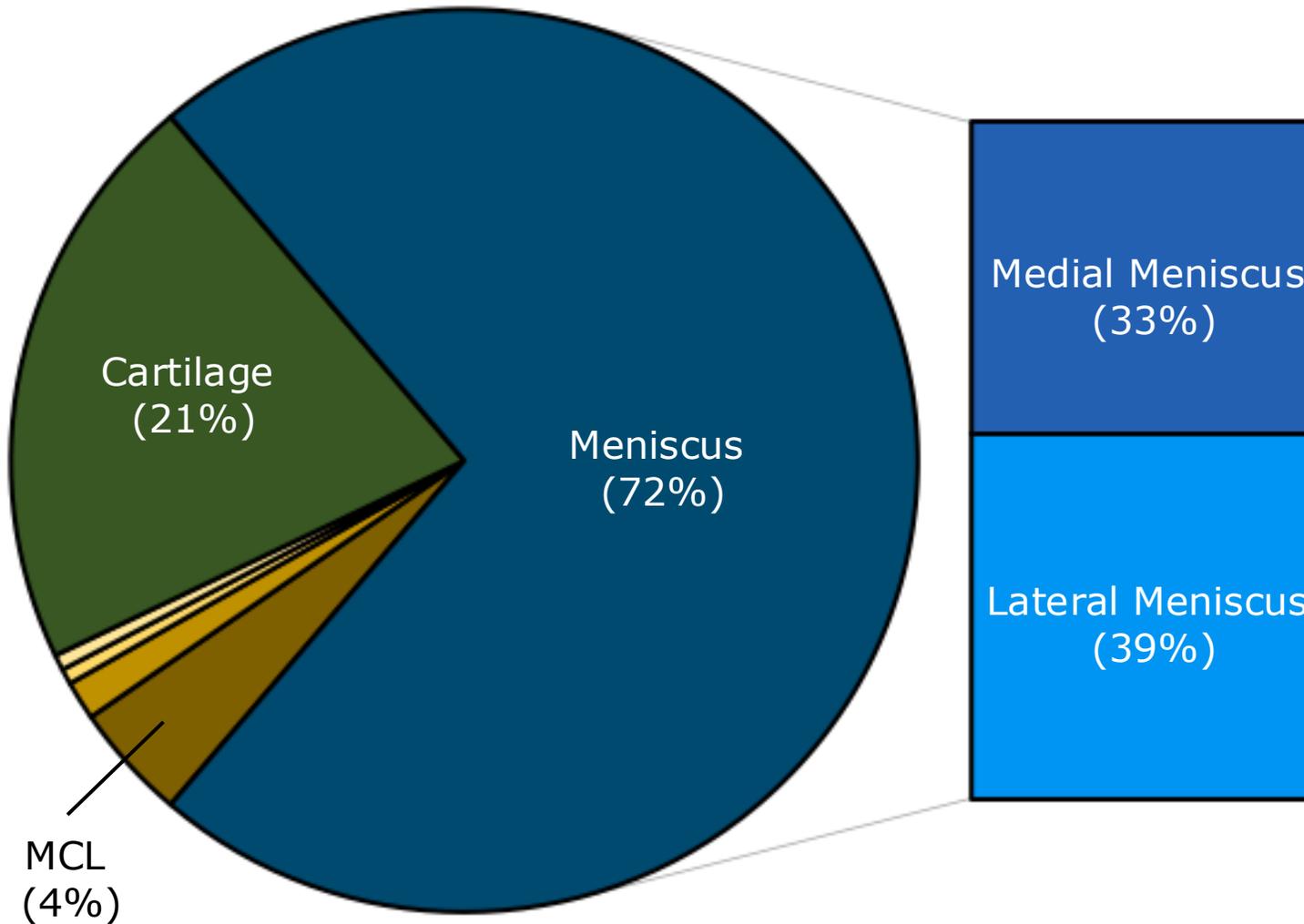
Demographic Data

	Total (n=1.392)	Soccer (n=712)	Handball (n=187)	Hockey (n=132)	Basketball (n=60)	Other (n=328)
Female, [%]	73%	71%	89%	69%	93%	66%
Age, [years]	16.4 ± 1.4	16.3 ± 1.4	16.3 ± 1.4	16.7 ± 1.1	16.2 ± 1.5	16.4 ± 1.5
Hamstring, [%]	94%	94%	95%	95%	95%	91%



Time between ACLR and survey completion: **9.7 ± 4.2 years**

Concomitant Injuries



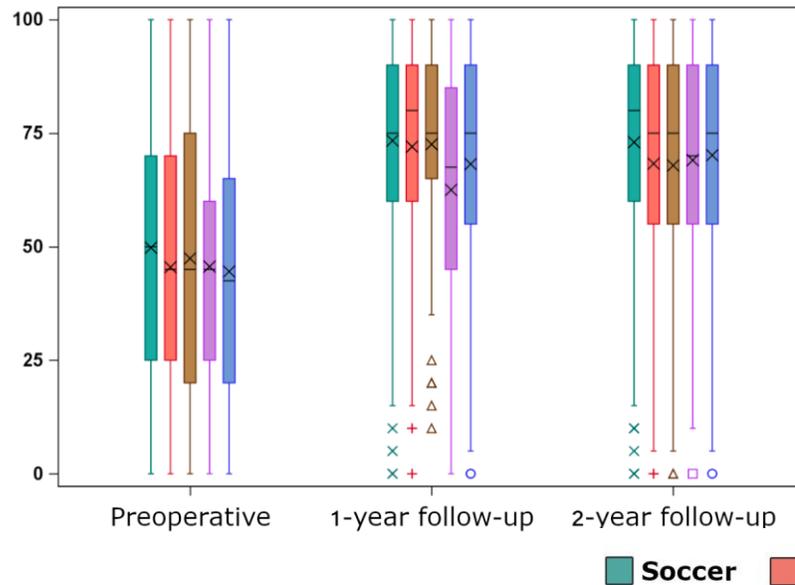
Any concomitant injury: **71%**

Significantly more MCL injuries in handball and other sports compared to soccer (6% and 6% vs. 2%, $p=0.002$).

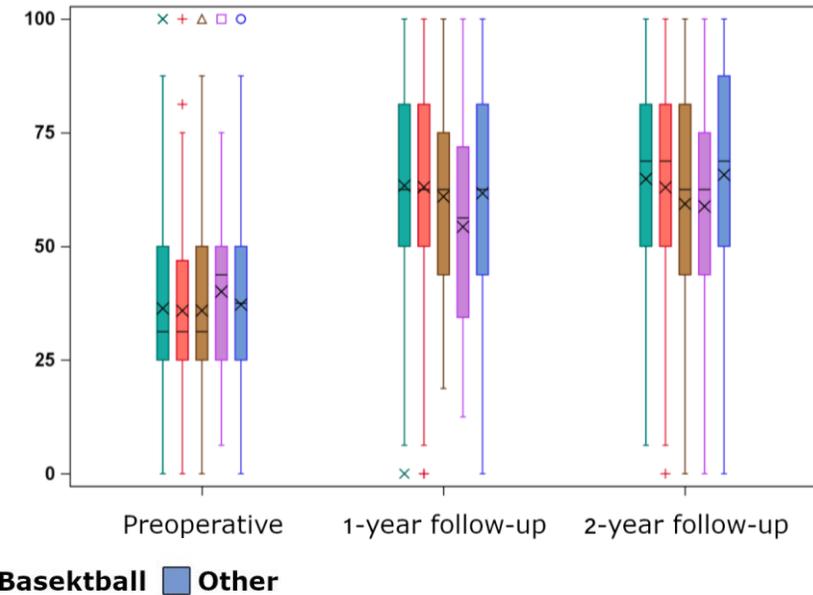
More males suffered lateral meniscus injuries in soccer (37% vs. 24%, $p=0.003$) compared to females.

KOOS Subscales

KOOS - Sport and recreation function

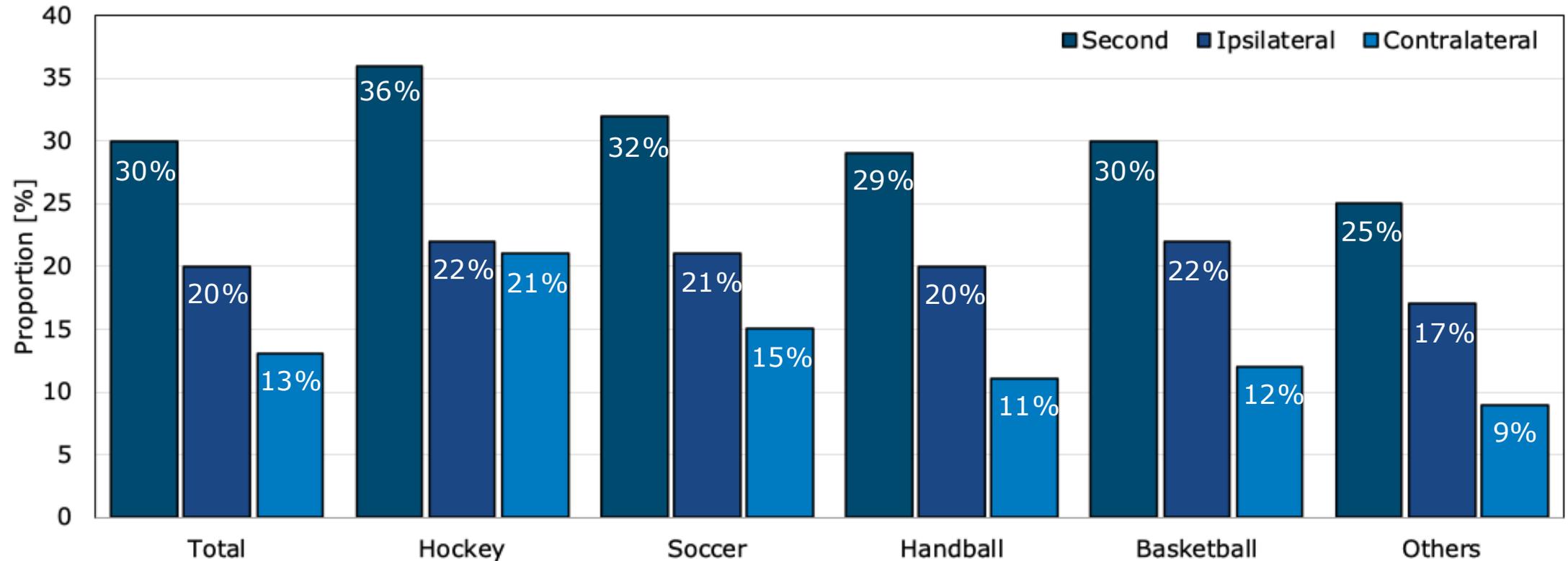


KOOS - Knee-related quality of life



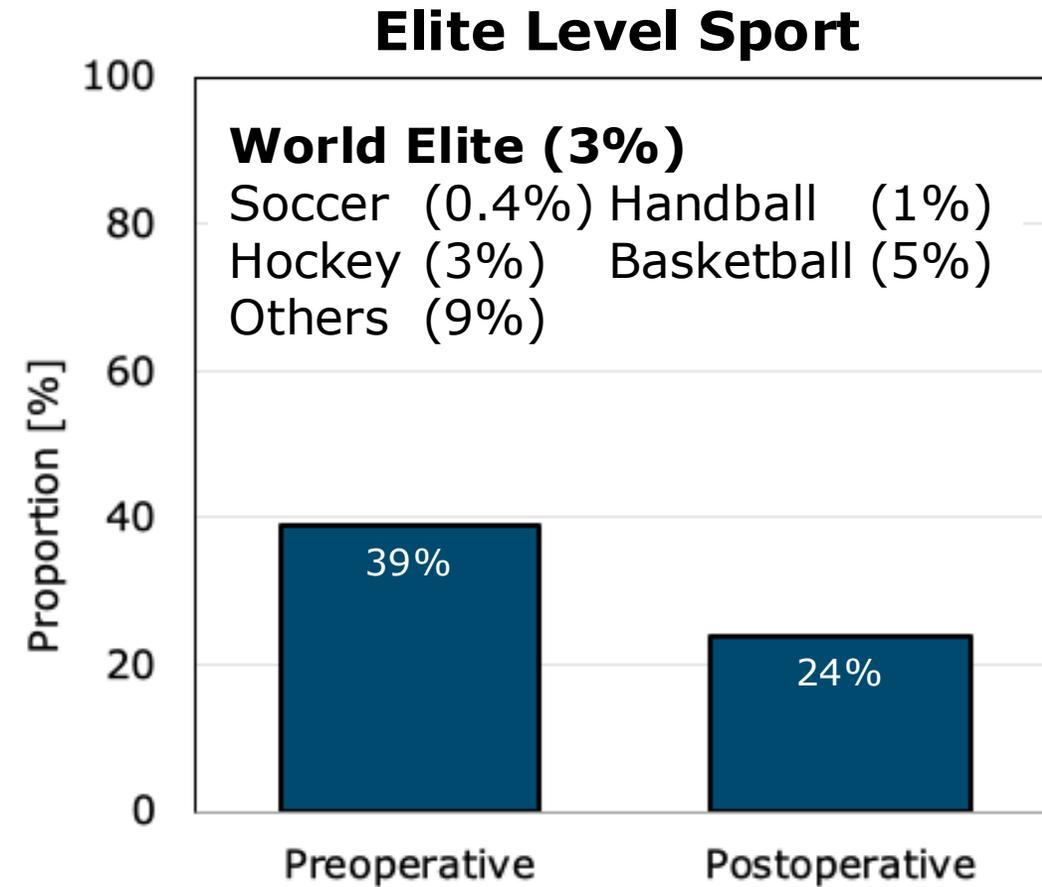
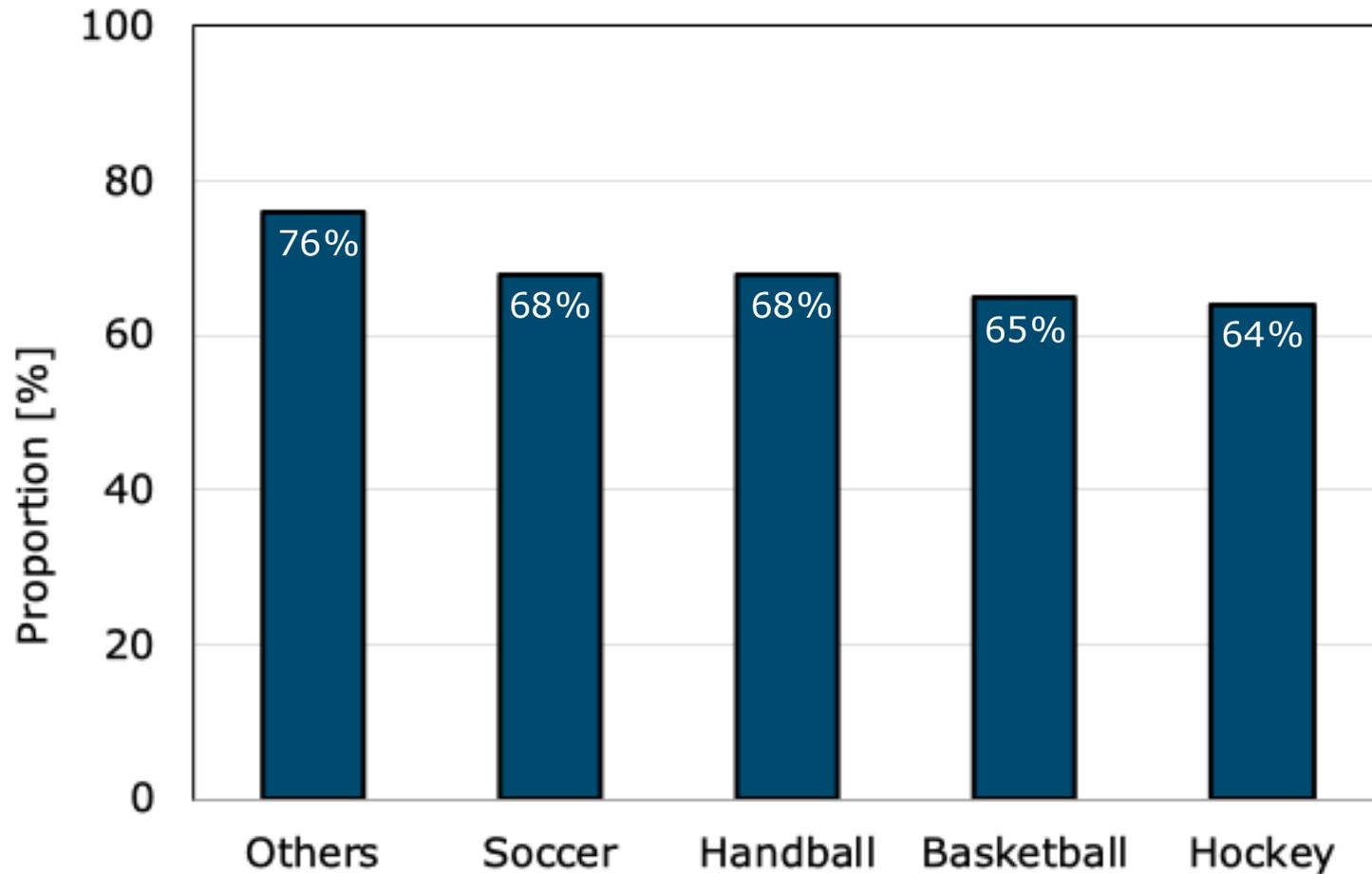
For all sports, statistically significant improvements could be observed in all KOOS subscales between baseline and the 1 and 2 years follow-ups ($p < 0.001$).

Second ACL Injuries



Contralateral ACL injuries were more common in hockey compared with other sports (21% vs. 9%, $p=0.002$), and with handball (21% vs. 11%, $p=0.036$).

Return to Pre-Injury Level of Sport



Limitations

Risk of selection bias

Registry study

Elite athlete \neq Elite athlete

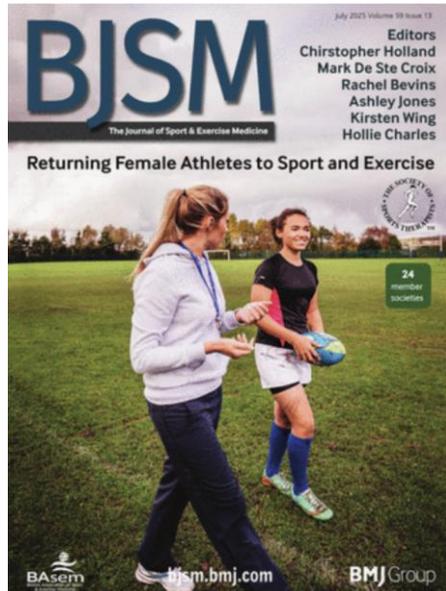
Adolescent ACLR

Significant and clinically relevant improvements in KOOS subscales

High rate of concomitant injuries (71%)

High rate of second ACL injuries (30%)

Minor but existing sport-specific and gender-specific differences



Keep pushing!

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