

Supplemental Table 1. Quality assessment of studies from Newcastle-Ottawa scales

Reference	Newcastle-Ottawa Scale	Score
Annett & al. (2000)	Cohort	8/9
Black & al. (2017)	Cohort	7/9
Blumenfeld et al. (2016)	Modified cross-sectional	6/10
Cunningham & Cunningham (1996)	Cohort	6/9
De Castro-Maqueda & Amar-Cantos (2019)	Modified cross-sectional	4/10
Ellapen et al. (2012)	Modified cross-sectional	6/10
Elliott. J (1993)	Modified cross-sectional	7/10
Engebretsen et al. (2013)	Cohort	8/9
Forrester (2020)	Cohort	6/9
Galic (2018)	Modified cross-sectional	6/10
Galluccio & al. (2017)	Modified cross-sectional	7/10
Giombini & al. (1997)	Modified cross-sectional	4/10
Goes et al (2020)	Modified cross-sectional	6/10
Gradidge et al. (2014)	Modified cross-sectional	6/10
Hame et al (2004)	Cohort	7/9
Hams et al (2019) "Epidemiology..."	Cohort	8/9
Hams et al. (2019) "Shoulder internal..."	Cohort	9/9
Hams et al. (2019) "Reduced shoulder..."	Cohort	9/9
Hersberger et al. (2012)	Modified cross-sectional	9/10
Jerolimov & Jagger (1997)	Modified cross-sectional	5/10
Junge et al. (2006)	Cohort	8/9
Junge & al. (2009)	Cohort	8/9
Kim & Park (2020)	Cohort	7/9
Klein et al. (2014)	Modified cross-sectional	10/10
Langner et al. (2020)	Modified cross-sectional	9/10
Macintosh et al. (1972)	Cohort	8/9
McLain & Reynolds (1989)	Cohort	6/9
Melchiorri et al. (2011)	Modified cross-sectional	7/10
Mountjoy et al. (2010)	Cohort	7/9
Mountjoy et al. (2015)	Cohort	8/9
Mountjoy, Miller & Junge (2019)	Cohort	7/9
Mukhtyar et al. (2014)	Modified cross-sectional	3/10
Prien et al. (2017)	Cohort	8/9
Rugg et al. (2019)	Cohort	9/9
Sallis et al. (2001)	Cohort	9/9
Soligard et al. (2017)	Cohort	8/9
Toohey et al (2019)	Cohort	9/9
Wheeler et al. (2013)	Modified cross-sectional	6/10
Whiting et al. (1985)	Modified cross-sectional	8/10
Youn et al. (2008)	Cohort	7/9
Zamora-Olave et al. (2018)	Modified cross-sectional	6/10

Supplemental Table 2. List of all excluded articles with reason

Author	Year	Title	Reason for exclusion
Appleby, B	2012	The throwing shoulder: part 2. A review of the biomechanics and adaptation to overhead throwing	review
Barrenetxea-Garcia, J., Torres-Unda, J., Esain, I. & al	2019	Anthropometry and isokinetic strength in water polo: Are young players ready to compete on adult teams?	no injury data
Bassano, A.	1995	Traumatologie oculaire en natation et water-polo	no injury data
Biener, K. and Keller, W.	1985	Sportunfaelle beim Wasserballspiel. / Sport accidents during water polo matches	language
Brooks, J. M.	1999	Injuries in water polo	review
Carrasco, M., Romero, E., Martínez, I. & al	2012	Incidencia y diagnóstico de las lesiones en un equipo de waterpolo de división de honor valenciana. / incidence and diagnosis of injuries in a valencia honor first division water polo team	language
Cecchi, N. J., Monroe, D. C., Fote, G. M., & al	2019	Head impacts sustained by male collegiate water polo athletes	no injury data
Cecchi, N. J., Monroe, D. C., Phreaner, J. J. & al	2020	Patterns of head impact exposure in men's and women's collegiate club water polo	no injury data
Cecchi, N. J., Oros, T. J., Monroe & al	2019	The Effectiveness of Protective Headgear in Attenuating Ball-to-Forehead Impacts in Water Polo	no injury data
Chalmers, D. J. and Morrison, L.	2003	Epidemiology of non-submersion injuries in aquatic sporting and recreational activities	review
Chorley, J., Eccles, R. E. and Scurfield, A.	2017	Care of shoulder pain in the overhead athlete	review
Churchill, N. W., Hutchison, M. G., Graham, S. J. & al	2020	Neurometabolites and sport-related concussion: From acute injury to one year after medical clearance	no injury data
Colville, J. M. and Markman, B. S.	1999	Competitive water polo: Upper extremity injuries	review
Crowley, E., Harrison, A. J. and Lyons, M.	2017	The Impact of Resistance Training on Swimming Performance: A Systematic Review	review
Del Regno, C., Corona, K., Cerciello, S. & al	2014	Patello-femoral pain syndrome in water polo players	design

Dion, J.L, Padilla, R. and Piccininni, P.	2006	Diving into good dental health	no injury data
Drew, M. K. and Finch, C. F.	2016	The Relationship Between Training Load and Injury, Illness and Soreness: A Systematic and Literature Review	review
Dugas, J., Chronister, J., Cain, E. L. & al	2014	Ulnar collateral ligament in the overhead athlete: A current review	review
Edmonds, E. W. and Dengerink, D. D.	2014	Common conditions in the overhead athlete	review
Eraslan, L., Yildiz, T. I., Tok, D. & al	2015	Assessment of two different pectoralis minor length measurements in relation with scapular kinematics in elite waterpolo players: Pilot study	no injury data
Feltner, M. E. and Taylor, G.	1997	Three-dimensional kinetics of the shoulder, elbow, and wrist during a penalty throw in water polo	no injury data
Fourre, J. M.	1977	Traumatologie du sport: water-polo	review
Franic, M., Ivkovic, A. and Rudic, R.	2007	Injuries in water polo	review
Freiwald, H. C., Schwarzbach, N. P. and Wolowski, A.	2021	Effects of competitive sports on temporomandibular dysfunction: a literature review	no injury data
Gkrilias, P., Matzaroglou, C., Kaloudis, A. & al	2019	Musculoskeletal disorders among Greek competitive water polo athletes	design
Jobe, F. W., Giangarra, C. E., Kvitne, R. S. & al	1991	Anterior capsulolabral reconstruction of the shoulder in athletes in overhand sports	design
Liang, M.	2008	Investigation and Research into the Injury and Disease of National Women's Water Polo Players	language
Lupo, C., Capranica, L. and Tessitore, A.	2014	The validity of the session-RPE method for quantifying training load in water polo	no injury data
McMaster, W. C., Long, S. C. and Caiozzo, V. J.	1991	Isokinetic torque imbalances in the rotator cuff of the elite water polo player	no injury data
Merinu, J. A., Dragan, I., Escalas, F. & al	1981	Traumatic lesions in swimming, water polo and diving	review
Miller, A. H., Evans, K., Adams, R. & al	2018	Shoulder injury in water polo: A systematic review of incidence and intrinsic risk factors	review

Miller, J. W.	1999	Injuries and considerations in masters aquatics sports	review
Monroe, D. C., Cecchi, N. J., Gerges, P. & al	2020	A Dose Relationship Between Brain Functional Connectivity and Cumulative Head Impact Exposure in Collegiate Water Polo Players	no injury data
Morrison, J.	1987	The current involvement of sports medicine with the Australian mens water polo team	no injury data
Mota, N. and Ribeiro, F.	2012	Association between shoulder proprioception and muscle strength in water polo players	no injury data
Mountjoy, M. and Junge, A.	2011	Preventing injuries in water polo: have we scored?	design
Mountjoy, M., Junge, A., Slysz, J. & al	2019	An Uneven Playing Field: Athlete Injury, Illness, Load, and Daily Training Environment in the Year Before the FINA (Aquatics) World Championships, 2017	review
Nichols, A. W.	2015	Medical Care of the Aquatics Athlete	review
Oliveira, N. and Sanders, R. H.	2017	Effects of knee action phase and fatigue on Rectus Femoris and Biceps Femoris co-activation during the eggbeater kick	no injury data
Oliveira, N., Saunders, D. H. and Sanders, R. H.	2016	The Effect of Fatigue-Induced Changes in Eggbeater-Kick Kinematics on Performance and Risk of Injury	no injury data
Olivier, N. and Daussin, F.	2019	Isokinetic torque imbalances of shoulder of the french women's national water polo team	no injury data
Olivier, N. and Daussin, F. N.	2018	Relationships Between Isokinetic Shoulder Evaluation and Fitness Characteristics of Elite French Female Water-Polo Players	no injury data
Pacelli, L. C.	1991	Water polo's benefits surface	no injury data
Pashby, T.	1985	Eye injuries in sport	design
Ramos, N., Youssefzadeh, K., Gerhardt, M. & al	2020	Results of hip arthroscopy in elite level water polo players with femoroacetabular impingement: return to play and patient satisfaction	no injury data
Rodineau, J.	2020	First anterior shoulder dislocation: Leading anatomic lesions?	review
Sepet, E., Aren, G., Dogan Onur, O. & al	2014	Knowledge of sports participants about dental emergency procedures and the use of mouthguards	no injury data
Shea, K. P. and Folcik, M.	1989	Water sports injuries	review
Spittler, J. and Keeling, J.	2016	Water Polo Injuries and Training Methods	review
Stanford, A. and Lilley, D.	2007	Water polo	design
Stromberg, J. D.	2017	Care of water polo players	review

Szekely, G.	1996	A "Sydney 2000" programban reszt vevő sportolók klinikai vizsgálat. / Clinical check-up of young athletes participating in "Sydney 2000" program	language
Tate, A., Turner, G. N., Knab, S. E. & al	2012	Risk factors associated with shoulder pain and disability across the lifespan of competitive swimmers	no injury data
Tooth, C., Gofflot, A., Schwartz, C. & al	2020	Risk Factors of Overuse Shoulder Injuries in Overhead Athletes: A Systematic Review	design
Turgut, E., Yildiz, T. I., Demirci, S. & al	2018	Shoulder kinematics and mobility adaptations in water-polo players	no injury data
Turgut, E., Yildiz, T. I., Tok, D. & al	2015	Dynamic scapular position during arm abduction in water polo players	no injury data
Wallis, M. and Drew, M.	2014	Subsequent injury in women's water polo	design
Wang, D., Rugg, C. M., Mayer, E. & al	2015	Predictors of orthopaedic surgery in NCAA athletes	design
Webster, M. J., Morris, M. E. and Galna, B.	2009	Shoulder pain in water polo: A systematic review of the literature	review
Witwer, A. and Sauers, E.	2006	Clinical measures of shoulder mobility in college water-polo players	no injury data
Yaghoubi, M., Esfehiani, M. M., Hosseini, H. A. & al	2015	Comparative electromyography analysis of the upper extremity between inexperienced and elite water polo players during an overhead shot	no injury data
Zaremski, J.L., Zeppieri Jr, G. and Tripp, B.L.	2019	Sport Specialization and Overuse Injuries in Adolescent Throwing Athletes: A Narrative Review	review
Segawa, E., Komori, Y. & Hojo, T.	2017	The relationship between shoulder injuries and flexibility, shoulder range of motion characteristics in elite male Japanese water polo players	language

Supplemental Figure 1. Example of a search conducted in Medline

Ovid® Support & Training Feedback Logged in as Felix Croteau at McGill University Close

Database(s): Ovid MEDLINE(R) ALL 1946 to February 03, 2021

Search Strategy:

#	Searches	Results
1	waterpolo.mp.	15
2	water polo.mp.	329
3	1 or 2	342
4	pain.mp. or exp Pain/	828834
5	exp "Wounds and Injuries"/	920894
6	exp Athletic Injuries/	28047
7	(injury or injuries).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	1202343
8	exp "Sprains and Strains"/	19142
9	(sprain or sprains).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	8971
10	(strain or strains).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	1023730
11	exp Brain Concussion/	9414
12	(concussion or concussions).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	13696
13	exp Eye Injuries/	22707
14	(eye injury or eye injuries).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	15849
15	exp Facial Injuries/	44579
16	exp Maxillofacial Injuries/	17012
17	(facial injury or facial injuries).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	7519
18	exp Tooth Injuries/	10430
19	(tooth injury or teeth injuries).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	222
20	shoulder.mp. or exp Shoulder Dislocation/ or exp Shoulder Joint/ or exp Shoulder/ or exp Shoulder Impingement Syndrome/ or exp Shoulder Fractures/ or exp Shoulder Pain/	81028
21	scapula.mp. or exp Scapula/	11089
22	rotator cuff.mp. or exp Rotator Cuff/	14083
23	femoroacetabular impingement.mp. or exp Femoroacetabular Impingement/	3080
24	4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23	3287027
25	3 and 24	116

Supplemental Figure 2. Newcastle-Ottawa Scale

**1 Newcastle-Ottawa Scale adapted for cross-sectional studies**

**Selection: (Maximum 5 stars)**

1) Representativeness of the sample:

- Truly representative of the average in the target population. \* (all subjects or random sampling)
- Somewhat representative of the average in the target population. \* (non-random sampling)
- Selected group of users.
- No description of the sampling strategy.

2) Sample size:

- Justified and satisfactory. \*
- Not justified.

3) Non-respondents:

- Comparability between respondents and non-respondents characteristics is established, and the response rate is satisfactory. \*
- The response rate is unsatisfactory, or the comparability between respondents and non-respondents is unsatisfactory.
- No description of the response rate or the characteristics of the responders and the non-responders.

4) Ascertainment of the exposure (risk factor):

- Validated measurement tool. \*\*
- Non-validated measurement tool, but the tool is available or described.\*
- No description of the measurement tool.

**Comparability: (Maximum 2 stars)**

1) The subjects in different outcome groups are comparable, based on the study design or analysis. Confounding factors are controlled.

- The study controls for the most important factor (select one). \*
- The study control for any additional factor. \*

**Outcome: (Maximum 3 stars)**

1) Assessment of the outcome:

- Independent blind assessment. \*\*
- Record linkage. \*\*
- Self report. \*
- No description.

2) Statistical test:

- The statistical test used to analyze the data is clearly described and appropriate, and the measurement of the association is presented, including confidence intervals and the probability level (p value). \*
- The statistical test is not appropriate, not described or incomplete.

This scale has been adapted from the Newcastle-Ottawa Quality Assessment Scale for cohort studies to perform a quality assessment of cross-sectional studies for the systematic review, "Are Healthcare Workers' Intentions to Vaccinate Related to their Knowledge, Beliefs and Attitudes? A Systematic Review".

We have not selected one factor that is the most important for comparability, because the variables are not the same in each study. Thus, the principal factor should be identified for each study.

In our scale, we have specifically assigned one star for self-reported outcomes, because our study measures the intention to vaccinate. Two stars are given to the studies that assess the outcome with independent blind observers or with vaccination records, because these methods measure the practice of vaccination, which is the result of true intention.

Supplemental Figure 3. Newcastle-Ottawa Scale for Cohort Studies

<b>NEWCASTLE - OTTAWA QUALITY ASSESSMENT SCALE COHORT STUDIES</b>	
<b>Note:</b> A study can be awarded a maximum of one star for each numbered item within the Selection and Outcome categories. A maximum of two stars can be given for Comparability	
<b>Selection</b>	
1) <u>Representativeness of the exposed cohort</u>	
a) truly representative of the average water polo players in the community *	
b) somewhat representative of the average water polo players in the community *	
c) selected group of users eg nurses, volunteers	
d) no description of the derivation of the cohort	
2) <u>Selection of the non exposed cohort</u>	
a) drawn from the same community as the exposed cohort *	
b) drawn from a different source	
c) no description of the derivation of the non exposed cohort	
3) <u>Ascertainment of exposure</u>	
a) secure record (eg surgical records) *	
b) structured interview *	
c) written self report	
d) no description	
4) <u>Demonstration that outcome of interest was not present at start of study</u>	
a) yes *	
b) no	
<b>Comparability</b>	
1) <u>Comparability of cohorts on the basis of the design or analysis</u>	
a) study controls for the most important factor *	
b) study controls for any additional factor * (This criteria could be modified to indicate specific control for a second important factor.)	
<b>Outcome</b>	
1) <u>Assessment of outcome</u>	
a) independent blind assessment *	
b) record linkage *	
c) self report	
d) no description	
2) <u>Was follow-up long enough for outcomes to occur</u>	
a) yes (select an adequate follow up period for outcome of interest) *	
b) no	
3) <u>Adequacy of follow up of cohorts</u>	
a) complete follow up - all subjects accounted for *	
b) subjects lost to follow up unlikely to introduce bias - small number lost -> ____ % (select an adequate %) follow up, or description provided of those lost) *	
c) follow up rate < ____ % (select an adequate %) and no description of those lost	
d) no statement	