

## ANALYSIS OF INJURY PATTERNS ON INTER COLLEGIATE SWIMMERS OF MUMBAI UNIVERSITY

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The objective of this study was to survey the pattern of injuries on inter collegiate swimmers of Mumbai university. A descriptive survey method was implemented with 94 inter collegiate male and female swimmers those were participated in inter collegiate swimming tournaments season of 2021-2022 participated in the organized inter collegiate competition held under the Mumbai university. A researcher administered questionnaire was used to obtain information pattern of injury on Swimmers. The type of injury observed for male and female Swimmers were shoulder/upper arm, back/neck, elbow/wrist/hand/finger, knee/leg, ankle/foot, concussion, hip/thigh, chest/abdomen respectively. Conclusion particular attention should be given to swimmers making the transition into collegiate level swimming. These data also suggest that injury surveillance and potential prevention strategies should focus on the shoulder for in-pool activities and the axial spine for cross-training activities.

**Keywords:** Inter collegiate Swimmers of Mumbai University, Pattern of Injuries

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Deepika A. Patil, Research Scholar, Department of Physical Education, Dr. Babasaheb Ambedkar Marathwada University, , Aurangabad, India. Email: <a href="mailto:deepikashishpatil@gmail.com">deepikashishpatil@gmail.com</a>	Deepika A. Patil, Hemant J. Verma, ANALYSIS OF INJURY PATTERNS ON INTER COLLEGIATE SWIMMERS OF MUMBAI UNIVERSITYv. IJEMS. 2023;12(02):180-183. Available From <a href="https://ijems.net/index.php/ijem/article/view/335">https://ijems.net/index.php/ijem/article/view/335</a>	

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## Introduction

Swimming is the movement of the body through water using arms and legs. People can swim in the sea, swimming pools, rivers and lakes. People swim for exercise, for fun, and as a sport. There are several styles of swimming, known as "strokes", including: front crawl, breaststroke, freestyle, butterfly, and backstroke. As swimming is a low-impact sport, most people think that the chances of getting injured are small. However, what many may now know is that putting joints through repetitive motion with poor stroke mechanics may cause an overuse injury. Most swimming injuries affect shoulders or knees, but it can affect hips or back as well, depending on the stroke. Taking part in strength and conditioning program can help improve muscular and cardiovascular endurance, leading to better and more consistent stroke mechanics and thereby decreasing the risk of injury.

### Common Swimming Injuries

The body part of shoulder/upper arm, back/neck, elbow/wrist/hand/finger, knee/leg, ankle/foot, concussion, hip/thigh, chest/abdomen injuries from swimming include:

- Irritation and inflammation in the shoulders
- Rotator cuff tendonitis or tears
- Shoulder impingement syndrome
- Tears in the cartilage around the shoulder socket
- Neck and low back pain

### Causes of swimming injuries

- Overtraining
- Not enough rest periods
- Poor stroke mechanics
- Poor breathing technique
- Poor flexibility or range of motion
- Poor core strength or stability
- Decreased hip muscle strength

## Material and Method

The present study was descriptive survey research method used with objective of this study was to survey the pattern of injuries on inter collegiate swimmers of Mumbai university.

A descriptive survey method was implemented with selected 94 inter collegiate male and female swimmers those were participated in inter collegiate swimming tournaments season of 2021-2022 participated in the organized inter collegiate competition held under the Mumbai university in age range of 18-22 years old was purposively selected subjects. Researcher administered questionnaire was used to obtain information of injury patterns of inter collegiate male and female swimmers. The researcher personal visit the every subjects and given to them instruction about the need, about the research study also provide explanation of questionnaire after the swimmers for research selected total number of 94 swimmers (male 44 swimmers and female 50 swimmers) those participated inter collegiate swimming tournaments season of 2021-2022 in the organized inter collegiate competition held under the Mumbai university from selected and implemented questionnaire for data collection. Analysis of the data by SPSS 21.0 version for software was used to compute descriptive statistics to describe and summarize the data.

## Results

The obtained results are present in following table into the form of descriptive statistics. According to analysis of selected total number of 94 swimmers (male 44 swimmers and female 50 swimmers) those participated inter collegiate swimming tournaments season of 2021-2022.

Table no. 1: Analysis of Descriptive Statistics on Swimmers Patter of Injury

*Enclosed as Annexure 01*

## Discussion

The injuries of variant body parts Shoulder/upper arm for male swimmers 11/28 similarly female swimmers 12/27, Back/neck for male swimmers 7/22 similarly female swimmers 5/16, Elbow/wrist/hand/finger for male swimmers 6/18 similarly female swimmers 1/6, Knee/leg for male swimmers 1/12 similarly female swimmers 5/13, Ankle/foot for male swimmers 2/4 similarly female swimmers 2/6, Concussion for male swimmers 3/3 similarly female swimmers 0, Hip/thigh for male swimmers 0/2 similarly female swimmers 3/5 and Chest/abdomen for male swimmers 1/1 similarly female swimmers 2/3 injuries faced.

**Conclusion**

On the basis of result obtained in study the researcher made the conclusion that show the particular attention should be given to swimmers making the transition into collegiate level swimming. These data also suggest that injury surveillance and potential prevention strategies should focus on the shoulder for in-pool activities and the axial spine for cross-training activities.

**Annexure**

*Annexure 01*

Table no. 1: Analysis of Descriptive Statistics on Swimmers Patter of Injury

Body Part	Injuries of variant part of body on Swimmers		
	Male Swimmers (n = 44)	Female Swimmers (n = 50)	Total Swimmers (n = 94)
Shoulder/upper arm	11/28	12/27	23/55
Back/neck	7/22	5/16	12/38
Elbow/wrist/hand/finger	6/18	1/6	7/24
Knee/leg	1/12	5/13	6/25
Ankle/foot	2/4	2/6	4/10
Concussion	3/3	0	3/3
Hip/thigh	0/2	3/5	3/7
Chest/abdomen	1/1	2/3	3/4

**Reference**

Grote K, Lincoln TL, Gamble JG. Hip adductor injury in competitive swimmers. *Am J Sports Med.* 2004;32(1):104–108. [Crossref][Google Scholar]

Kennedy JC, Hawkins R, Krissoff WB. Orthopedic manifestations of swimming. *Am J Sports Med.* 1978;6(6):309–322. [Crossref][Google Scholar]

Keskinen K, Eriksson E, Komi P. Breaststroke swimmer’s knee: a biomechanical and arthroscopic study. *Am J Sports Med.* 1980;8(4):228–231. [Crossref][Google Scholar]

McFarland EG, Wasik M. Injuries in female collegiate swimmers due to swimming and cross training. *Clin J Sport Med.* 1996;6(3):178–182. [Crossref][Google Scholar]

McMaster WC, Troup J. A survey of interfering shoulder pain in United States competitive swimmers. *Am J Sports Med.* 1993;21(1):67–70. [Crossref][Google Scholar]

Singh, M. , Kadhim, M. M. , Turki Jalil, A. et al. A systematic review of the protective effects of silymarin/silibinin against doxorubicin-induced

Cardiotoxicity. *Cancer Cell Int* 23, 88 (2023). <https://doi.org/10.1186/s12935-023-02936-4> <https://cancer.ci.biomedcentral.com/articles/10.1186/s12935-023-02936-4> [Article][Crossref][Google Scholar]

Mandeep Singh Nathial, Analysis of set shot in basketball in relation with time to perform the course and displacement of center of gravity, *American Journal of Sports Science*, Vol. 2 Issue. 5 pp: 122-126 (2014). Retrieved from <https://www.sciencepublishinggroup.com/journal/paperinfo.aspx?journalid=155&doi=10.11648/j.ajss.20140205.13> [Crossref][Google Scholar]

Mandeep Singh (2010). Evaluation And Improvement Of Sports Techniques Through Biomechanical Updated Analyzing Technology, *University News, Journal of Higher Education Association of Indian Universities, Association of Indian Universities*, Vol:48:Issue. 05;2010 Pp45-57, 2010. [sciencepublishinggroup.com/journal/paperinfo.aspx?journalid=155&doi=10.11648/j.ajss.20140205.13](https://www.sciencepublishinggroup.com/journal/paperinfo.aspx?journalid=155&doi=10.11648/j.ajss.20140205.13) [Crossref][Google Scholar] [Crossref][Google Scholar]

McMaster WC. Shoulder injuries in competitive swimmers. *Clin Sports Med.* 1999;18(2):349–359, vii. [Crossref][Google Scholar]

NCAA Sports Sponsorship and Participation Rates Report 1981/82- 2005/06. Indianapolis, IN: National Collegiate Athletic Association; 2007. . [Crossref][Google Scholar] [Crossref][Google Scholar]

Richardson AB, Jobe FW, Collins HR. The shoulder in competitive swimming. *Am J Sports Med.* 1980;8(3):159–163. [Crossref][Google Scholar]

Rovere GD, Nichols AW. Frequency, associated factors, and treatment of breaststroker’s knee in competitive swimmers. *Am J Sports Med.* 1985;13(2):99–104. [Crossref][Google Scholar]

SINGH SIDHU, A. , & SINGH, M. (2022). KINEMATICAL ANALYSIS OF HURDLE CLEARANCE TECHNIQUE IN 110M HURDLE RACE. *International Journal of Behavioral Social and Movement Sciences*, 4(2), 28–35. Retrieved from [Article] [Crossref][Google Scholar]

Singh, A. , & Singh , D. M. (2013). PROMOTION OF RESEARCH CULTURE –ENHANCING QUALITY

IN HIGHER EDUCATION. *International Journal of Behavioral Social and Movement Sciences*, 2(2), 202–208. Retrieved from [Article][Crossref][Google Scholar]

SINGH, M. , & SINGH SIDHU, A. (2016). A COMPARATIVE STUDY OF BODY COMPOSITION AND RELATIVE HEALTH STATUS AMONG RESIDENT AND NON-RESIDENT STUDENTS IN DIFFERENT SCHOOLS OF J&K. *International Journal of Behavioral Social and Movement Sciences*, 5(3), 08–13. Retrieved from [Article][Crossref][Google Scholar]

Singh Nathial, D. M. (2012). ANALYZING THE CREDIT BASED SYSTEM IN PHYSICAL EDUCATION. *International Journal of Behavioral Social and Movement Sciences*, 1(3), 172–176. Retrieved from [Article][Crossref][Google Scholar]

SHARMA, N. P. , & SINGH, M. (2014). SENIOR AGE GROUP RELATIVE EXERCISES AND IMPACT ON THEIR LIFESTYLE. *International Journal of Behavioral Social and Movement Sciences*, 3(04), 78–82. Retrieved from [Article][Crossref][Google Scholar]

CHAND PURI, P. , MISHRA, P. , JHAJHARIA, B. , & SINGH, M. (2014). COORDINATIVE ABILITIES OF VOLLEYBALL IN DIFFERENT AGE GROUPS: A COMPARATIVE STUDY. *International Journal of Behavioral Social and Movement Sciences*, 3(3), 56–68. Retrieved from [Article][Crossref][Google Scholar]

Vizsolyi P, Taunton J, Robertson G, et al. Breaststroker's knee: an analysis of epidemiological and biomechanical factors. *Am J Sports Med*. 1987;15(1):63–71. [Crossref][Google Scholar]