

## **Abstract**

**Title:** Assessment of development of sports performance in swimming based on split times peak performance.

**Objectives:** The aim of the work is to identify and compare development of performance split times in individual swimming disciplines for category women and men at the beginning of the 21st century.

**Methods:** The data was obtained from secondary internet data sources. Data was presented using summarization tables and bar charts. The work used quantitative research using methods of summarization, compilation, comparative description and evaluation of results.

**Results:** In the survey were included 13 disciplines for category men and women. A total of 4320 split times from three World Championships were 8 years apart in the survey. In each discipline, split times were judged separately for performances at 1-8. place and at 9.-16. place for men and women. These results from the survey. The average performance time for men and women improved in each discipline. The analysis of split times also showed a trend. Out of the total number of 90 evaluated average split times in both groups between 2003 and 2019, men deteriorated four times compared to 2003, i.e, a 95.5 % improvement in average split times was recorded. In contrast, only one worsened average split time was found in the women swimmers, i.e, improvement in 98.8% of split times. In men, the resulting time was most pronounced in the discipline of 100 m breaststroke, where they recorded a progress of 4.30 %. In the resulting time, women also had the best improvement in the 100 m breaststroke, where the percentage increase was 4.06 %. The improvement in swimming split times between men ranged from -1.74 % to 5.78 %, while for women it ranged from -1.25 % to 7.38 %.

**Keywords:** swimming, performance, swimming performance, split time, swimming stroke