

# **Abstract**

## **Title**

Ball flight control with wedges in amateur golf players

## **Objectives**

The aim of the study was to determine level of ball's flight distance control and its relationship to the current and long-term performance of the elite amateur golfers.

## **Methods**

The research sample was consisted of 10 selected right-handed golfers of the elite amateur level (age =  $22 \pm 3$  years, height  $186 \pm 13$  cm, weight  $81 \pm 20.5$  kg, HCP  $1,2 \pm 3,4$ ). Probands task was to hit 15 strokes. At each of the tested distances (45 m, 55 m, 65 m, 75 m and 85 m) the player played three strokes. The TrackMan 4 3D Doppler Radar (TrackMan, Denmark) was used to determine tested parameters. The results were recorded in individual protocols and then processed in Microsoft Excel, which was also used to obtain basic statistics: mean, standard deviation, variation range, and percentage deviation from the target. Percentage deviation from target was calculated as a percentage of total deviation from target distance. We used program R v3.5.2 (Vienna, Austria) for statistical evaluation of the relationship between ball distance control and performance. The relationship between the parameters was evaluated using the Pearson correlation coefficient.

## **Results**

In the research it was found that players with lower handicap are mainly achieving better results in measuring the total deviation from a distance of 45 m. Between the total deviation from the target and the handicap, the correlation of magnitude 0.81 was released at the level of significance even lower than 1 % , namely 0.5 %. Between the score of the first day and the total deviation, a correlation of 0.76 size at the level of significance lower than 2 %. In finding the relationship between the total deviation and the total score in the tournament, a correlation of 0.75 size at the significance level below 5% has been achieved. In our research, we also

found the relationship between handicap and overall score, when correlation of 0.72 size was detected at the level of significance lower than 5 %. In view of the deviation distances, the most significant relations were found between the total deviation from the target from the distance of 45 m and the results from the first day and the total score. Here, between the distance deviation from the target and the score of the first day, a correlation of 0.72 size at the level of significance below 2 % and between the deviation from the target and the total correlation score of 0.77 at a level of significance below 3 %. In the search for the relationship between the directional deviation and the performance parameters, there was a significant relationship only at the distance of 55 m with a total score in the tournament, when a correlation of size 0.82 was detected at the significance level lower than 2%.

**Key words**

Short game, golf, shortened strokes, golf swing, performance