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Assessment of the Q-angle in basketball players

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Introduction: The Q-angle is presented as an etiological factor for valgus stress in knee. Increasing the Q-angle leads to excessive lateral pulling of the patella and patellofemoral dysfunctions [1, 2, 3, 4]. Different starting positions for Q-angle measurement are tracked by Smith [5].

Objective purpose of this study was to measure the Q-angle in basketball players and to track the changes in its values after physiotherapy. **Participants and Methods:** During the period 2013 - 2016 were tested 65 healthy active basketball players from Basketball Club "Rilski sportist" – Samokov and National Bulgarian Basketball Team. The athletes were divided into 3 groups: 22 players in the first Control Group (CG) with average 20, 9 years; Working group 1 (1WG) with average 21, 7 years; 21 players in Working Group 2 (WG2) with average 15, 6 years. Q - angle was measured from a supine and standing positions. Physiotherapy with prevention targeting was applied at WG1 and WG2. **Results:** According to the comparative analysis the negative differences of the right leg in supine and of the left lower limb in standing (-0,3; -0,2) were statistically significant at the t-criterion over the critical ($t = 2,32$; $t = 2.16$) and a guarantee probability $P (t) > 95\%$. For the 1WG, the difference $d=0,4^\circ$ ($t=2,61$, $P (t) = 98 \%$) for the left lower limb in supine and the difference $d=0,9^\circ$ ($t= 3,36$, $P (t) = 99\%$) in standing were statistically significant. Similar results were seen in adolescents' basketball players. **Conclusions:** The results of the 1WG and 2WG at the final measurement are at the 12° limit for men, which proves that the use of physiotherapy for prevention has a positive effect on reducing and control the Q-angle in healthy basketball players.

Key words: basketball, Q-angle, physiotherapy

Recent publications

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