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## Assessment of the Q-angle in basketball players

Tasheva Rumiana and Mitrev Georgi

National Sports Academy "Vassil Levsky"- Sofia, Bulgaria Physical Therapy Department

**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].

**The 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  $12^\circ$  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

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### Biography

Rumiana Tasheva is Assoc. Prof. of Physical Therapy at the National Sports Academy (NSA). The Chairperson of the Bulgarian Organization for Sports Physiotherapy, which she founded in 2000. The core group member and a researcher in the European Sports Physiotherapy For All project. PhD thesis with the subject "Physiotherapy after Arthroscopic Reconstruction of the Anterior Cruciate Ligament". Educated in 23 courses with national and international lecturers. Clinical experience in orthopedic, traumatology and neurological diseases since 33 years. During the period 1984-1993 the regional coordinator for treatment and prevention of spinal, chest and foot deformities. Over 40 publications in the field of physiotherapy.

rumiana\_tasheva@yahoo.com