

**38 THE EFFECTS OF 8 WEEKS PLYOMETRIC TRAINING ON KNEE PROPRIOCEPTION**

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The incidence of sports injuries is particularly great in athletes, with sprains and strains of the knee being the most frequent injurers. Proprioceptive system plays a critical role in maintenance of joint stability, including sensation of both position and movements of joint, under dynamic conditions. Muscle and joint receptors are main source for proprioception. The aim of this study was to determine the effect of plyometric training on knee proprioception. Thirty male college students without injury history in lower extremities and head participated in this study. They were randomly divided into two groups (N= 15 experimental group, N= 15 control group). All subjects' knee proprioception was assessed at the baseline and then the experimental group took part in 8 weeks plyometric training programme but control group did not receive any exercise. Knee proprioception measurements were done for both groups after 8 weeks. In this test, first subject is asked to repeat the first angle position actively or passively. Biodex System 3 Pro Isokinetic Dynamometer was used for the calculation of

knee proprioception sense. Subjects were asked to reproduce the fixed knee angle (30°, 45°, 60°) that was actively positioned. Absolute angular error values were obtained for every angle. A significant difference ( $p < 0.05$ ) was found between active absolute angle error values between before and after 8 weeks training for experimental group at 30° ( $4.02 \pm 1.58$  vs  $3.33 \pm 1.12$ ), 45° ( $4.68 \pm 2.21$  vs  $4.06 \pm 1.56$ ) and 60° ( $4.16 \pm 1.18$  vs  $3.47 \pm 0.84$ ) angles. For the control group, no significant differences ( $p > 0.05$ ) were observed at 30° ( $4.2 \pm 1.36$  vs  $3.99 \pm 1.44$ ), 45° ( $4.77 \pm 1.59$  vs  $4.72 \pm 1.70$ ) and 60° ( $3.96 \pm 1.24$  vs  $3.71 \pm 1.31$ ) angles. In conclusion, significant improvement was detected in knee proprioception following plyometric training. Since proprioception is very important for preventing undesired joints, it plays a protective role in injuries.