IJCIH
Converging Healthcare & Technology

INTERNATIONAL JOURNAL OF CONVERGENCE IN HEALTHCARE

Published by
IJCIH & Pratyaksh Medicare LLP www.ijcih.com

Interpretation of Normative Score of Isokinetic Peak Torque of Hamstring and Quadriceps among Healthy Teenagers: A Protocol Study

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Abstract

The isokinetic evaluation usually includes a comparison between the tested muscle length and its power. Isokinetic testing serves to assess the peak torque of the quadriceps and hamstrings muscles by determining the magnitude of generated torque. To the best of our knowledge till now the normality reference score of peak torque among teenagers has not been established. The aim of the study is to evaluate the normative reference score of isokinetic peak torque of hamstring and quadriceps muscles among healthy teenagers from age group 13-17 years. This study involves enrolling 60 healthy participants from renowned secondary schools. They will be brief on the research procedure by demonstration method. Participants will receive an assent form, and parental informed consent will be secured. Anthropometric details will be taken into account prior to the study. The research will focus on assessing quadriceps and hamstring peak torque using the BioMat Easy isokinetic dynamometer®. The protocol will include calculation of peak torques of knee flexors and extensors. The collected data will be analyzed using the Statistical Package of Social Science (SPSS, Version 20.0 Inc, Chicago, IL). Normality of the collected data will be established by Kolmogorov-Smirnov test of normality. After the completion of the study, reference values of hamstrings and quadriceps peak torque will be generated. This will be beneficial as a diagnostic tool for the evaluation of sports injuries.

Keywords: *Torque, Teenagers, Healthy Participants, Social Science, Sports injury, Parental, Informed Consent.*