International Journal of Applied Exercise Physiology
2322-3537 www.ijaep.com
Vol.8 No.3

The Relationshıp Between Strength, Speed, Flexibility, Agility, and Anaerobic Power in Elite Athletes

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ARTICLE INFORMATION
Original Research Paper
Doi: 10.26655/IJAEP.2019.9.9
Received July. 2019
Accepted September. 2019

Keywords:
Agility
Anaerobic Power
Flexibility
Speed
Strength.

ABSTRACT
The aim of this study was to determine whether there is a relationship between strength, speed, flexibility, agility, and anaerobic power in elite athletes. In various sport branches 29 active male athletes participated in this study with an average age of 21.14±1.98 years who without any health problems. Back and leg strength were measured by dynamometer (Takei), speed was measured by 20 meters test, agility was measured by T test, flexibility was measured by sit and reach test, vertical jump sit-reach test by Jumpmeter (Takei) anaerobic power was calculated by the Lewis formula. The data were analyzed in SPSS 22.0 for Windows package program. Bivariate - Pearson Correlation test was used to determine the relationship between strength, speed, flexibility, agility, and anaerobic power. The results were interpreted as .05 significance level. We were found positive and significant relationships between the back and leg force, between anaerobic power and vertical jumping, between anaerobic power and back force, between anaerobic power and leg strength, and between flexibility and vertical jumping. And also, there was a negative and significant relationship between flexibility and agility, between speed and vertical jump, and between agility and vertical jump. In this study, it was concluded that strength, vertical jump and anaerobic power was related both each other and the other. For this reason, we recommend that the trainings cover all motoric characteristics.

1. Introduction

The basic motoric features grouped as strength, speed, endurance, flexibility (mobility) and skill (coordination) are "the features, one or several of which are used to make a movement happen, that can be improved and vary from one person to another" (1). Strength is the tension that occurs during muscle contraction (2) and it is the contraction or resistance of muscles that are exposed to any resistance for a certain period of time (3). Strength is one of the motoric features that play a role in the formation of sportive skills (1). Speed is the ability of an athlete to move from one place to another in the fastest way or to perform the movement as fast as possible (4). Durability is the ability of the organism to resist the load which affects it (5). It is examined in different ways, most commonly as aerobic and anaerobic endurance. Aerobic endurance, also known as aerobic power, is the performance capacity in long-term exercises (6). Anaerobic endurance, on the other hand, is to maintain fast, rhythmic, dynamic, and maximal exercises at the anaerobic level (4). According to Agirbas (2019), sportive endurance is the capacity to perform skill-demanding movements for a longer duration or with more repetitions in aerobic or anaerobic processes (1). Flexibility is the ability to perform the