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Selected Anthropometric and physical performance parameters related to throwing performance in youth male shot put athletes

Zhao, Y., Zhao, K.

CHINA INSTITUTE OF SPORT SCIENCE

INTRODUCTION:
Anthropometric and physical performance Variables including body mass, height, strength and power are considered crucial parameters in shot put. The purpose of this study was to investigate the characteristics of selected anthropometric and physical performance parameters in throwers for the Fitness assessment and Talent identification.
METHODS:
55 youth elite male shot put athletes (aged 16.15±1.09) from China participated in a total of sixteen Anthropometric and physical performance tests viz Body mass, height, Body mass index, Sit and Reach Flexibility, 30m sprint, 60m sprint, Standing long jump, Standing triple jump, Hexagon Agility Test, Balance cushion One leg stand, The Plank Fitness Test, Pull-Up Test, 2000m rowing ergometer; To avoid the effects of technique, we chose 5kg Overhead Medicine Ball Throw (forwards), 5kg Medicine Ball Throw(backwards) and Standing shot put test(5kg) to assess the throwing ability of athletes. The correlation analysis was made between throwing ability tests and other tests.
RESULTS:
5kg Overhead Medicine Ball Throw (forwards) was correlated with Sit and Reach Flexibility(r=0.688,p=0.000), 30m sprint(r=-0.370,p=0.005), 60m sprint(r=-0.623,p=0.000), 2000m rowing ergometer(r=-0.413,p=0.002) Pull-Up Test(r=0.702,p=0.000) The Plank Fitness Test(r=0.764,p=0.000), Balance cushion One leg stand(r=0.656,p=0.000), Standing long jump(r=0.290,p=0.032) and Standing triple jump(r=0.477,p=0.000). 5kg Medicine Ball Throw(backwards) was correlated with Sit and Reach Flexibility(r=0.704,p=0.000), 60m sprint(r=-0.619,p=0.000), 2000m rowing ergometer(r=-0.373,p=0.005), Pull-Up Test(r=0.722,p=0.000), The Plank Fitness Test(r=0.723,p=0.000), Balance cushion One leg stand(r=0.570,p=0.000) and Standing long jump(r=0.462,p=0.000). Standing shot put test(5kg) was correlated with Sit and Reach Flexibility(r=0.637,p=0.000), 60m sprint(r=0.639,p=0.000), 2000m rowing ergometer(r=-0.373,p=0.005), Pull-Up Test(r=0.755,p=0.000), The Plank Fitness Test(r=0.656,p=0.000), Balance cushion One leg stand(r=0.568,p=0.000), Hexagon Agility Test(r=-0.280,p=0.038) and Standing long jump(r=0.448,p=0.001).
CONCLUSION:
The test results show that flexibility, strength, speed, agility, aerobic ability are significantly related to the throwing ability of young shot put athletes. There is no correlation between height, weight, BMI and throwing ability These findings provide information for coaches that young shot putters need to develop their overall physical ability to promote their speciality. Project 22-23 Supported by the Fundamental Research Funds for the China Institute of Sport Science.

Topic: **Training and Testing**

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