

# MEDICINE AND SCIENCE IN SPORTS AND EXERCISE

## H-21F FREE COMMUNICATION/POSTER TRAINING - CHILDREN AND ADOLESCENTS

### 1855 ASSOCIATION BETWEEN ANTHROPOMETRIC, STRENGTH, AND POWER INDEXES AND PERFORMANCE TASKS IN BOYS

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The purpose of this study was to evaluate the relationship between anthropometric, strength and power indexes and performance of 50-m, 100-m sprints, vertical (VJ) and long jumps (LJ). Thirty six, healthy non-athletic boys (age =  $14.7 \pm 1.5$  yr.) were measured for ht, wt, skinfolds at subscapular, triceps (sf-tri), thigh (sf-thi), and calf (sf-cal), calf, mid- (MTG) and distal (DTG) thigh girths, and limb length (LL). Also, all subjects were tested for VJ, LJ, 50 m, 100 m sprints, flexibility, and grip strength (GS), isokinetic peak torque (PT) and reciprocal muscle ratio (RR) at three speeds (60, 180, 300°/s) during dominant knee concentric muscle actions using Cybex Norm, and peak (5-s) (PP) and mean (30-s) power (MP) using Wingate test. Hours of physical activity per week (PA) were reported by means of interview. Results revealed statistically significant ( $p < .05$ ) correlation coefficients between time of 50-m sprint and MP (-.64), PP (-.47), age (-.54), PA (-.52), PT at 60°/s (-.55), PT at 180°/s (-.50), PT at 300°/s (-.44), sf-thi (.62), sf-tri (.53), sf-cal (.40), GS (-.41), or ht (-.39), and between time of 100-m sprint and MP (-.46), PA (-.41), PT at 60°/s (-.35), sf-thi (.40), or sf-tri (.41), and between distance of VJ and MP (.79), PP (.74), age (.69), PA (.39), PT at 60°/s (.71), PT at 180°/s (.69), PT at 300°/s (.61), sf-thi (-.62), sf-tri (-.60), sf-cal (-.49), GS (.58), LL (.39), or ht (.56), and between distance of LJ and MP (.64), PP (.49), age (.61), PA (.42), PT at 60°/s (.52), PT at 180°/s (.52), PT at 300°/s (.52), sf-thi (-.59), sf-tri (-.48), sf-cal (-.35), GS (.37), or ht (.36). A stepwise regression analysis indicated that a linear combination of MP and sf-thi significantly accounted for 50% of the variance of 50-m time while MP alone significantly accounted for 15% of the variance of time of 100-m. A linear combination of MP, PT at 60°/s, and sf-tri explained 70% of the variance of distance of VJ, whereas a linear combination of MP, RR at 60°/s, and MTG explained 60% of the variance of distance of LJ. Among all the variables evaluated in the present study, mean power on the Wingate test seemed to be the best predictor of sprint and jump ability.