data were collected when the children were aged 3 and 5 years, using the same protocol. The subjects were divided into 2 groups, the improvement group and maintain or no-improvement group, based on the change in guardians' consciousness of children's PA. The difference in the amount of PA between these groups was examined using an independent t-test.
RESULTS: The amount of PA increased on weekdays and decreased on weekends from 3 years old to 5 years old. The amount of PA increased significantly in the improvement group based on the consciousness that "playing outside, exercise, and sports are very important" and "the guardian sometimes takes a walk with the child". Regarding daily lifestyle items, "the frequency of playing using the whole body" was the only item that showed a significant difference in PA. Although statistical significance was not confirmed, PA increased in the improvement group based on "the duration of watching TV/videos" and "duration of playing video games".
CONCLUSIONS: It was suggested that guardians' consciousness regarding playing outdoors, and engaging in exercise and sports is very important for children's PA. Further, it is necessary to control the duration of watching TV/videos and of playing video games in order to increase children's PA.

3759 Board #206 June 3 8:00 AM - 9:30 AM

Vertical Jump Performance Predicts Selection Of Young Talented Volleyball Players For the Junior National Team

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(No relationships reported)

PURPOSE: To determine whether anthropometric measurements and fitness test results can discriminate between selected and non-selected junior volleyball players.
METHODS: Forty three male junior volleyball players (age: 15.0±0.7 yrs) took part in training camp and underwent a selection procedure by coaches of the junior national team. Anthropometric data (body height, body mass and body height with extended arm) and fitness tests results (countermovement jump (CMJ), block jump, spike jump, 10m sprint and 505 agility test) were obtained. Four expert volleyball coaches of the national team evaluated and graded the players in a scale from 0 to 100 during their participation in a volleyball tournament. The coaches selected the best 23 players on the basis of their score (selected players; n=23, height: 186±5 cm, body mass: 72±10 kg) (non-selected; n=20, height: 188±3 cm, body mass: 69.5±7.5 kg). A linear discriminant analysis was conducted on the selected and non-selected groups to determine if the anthropometric and fitness test data could predict the coaches' selection. Anthropometric and fitness test data of the two groups were compared using independent samples t-tests. Statistical significance was set at $p<0.05$.
RESULTS: Selected players had higher coaches' scores compared to the non-selected (83.9±7.2 vs. 65.3±7.5, $p<0.05$). There were significant differences between selected and non-selected in only in vertical jumps (CMJ: 40.5±6.7 vs. 34.4±3.6 cm, block jump: 43.6±6.9 vs. 36.9±3.5 cm, spike jump: 72.8±10.3 vs. 63.4±3.8 cm, all $p<0.05$), but not in any other anthropometric or fitness test parameter. The multivariate analysis yielded a discriminant function (Wilk's lambda= 0.69, χ^2= 15.12, p=0.001, η^2=0.12). CMJ was the main test result that highly loaded the discriminant function (r=0.85). Cross validation results showed that selection was correctly predicted in 31 out of the 43 selected athletes (predictive accuracy: 72.1%).
CONCLUSIONS: Vertical jumping ability may be used as an important parameter that largely determines success, since it may discriminate between selected and non-selected junior volleyball players.

3760 Board #207 June 3 8:00 AM - 9:30 AM

Comparison Of Cardiorespiratory Fitness Testing Measures In Young Children

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(No relationships reported)

Laboratory and field methods of assessing cardiorespiratory fitness in young children provides valuable information to assess the effectiveness of intervention strategies designed to improve overall health outcomes.
PURPOSE: To compare peak oxygen uptake (VO2peak; $ml \cdot kg^{-1} \cdot min^{-1}$) and maximal heart rate (MHR; $beats \cdot min^{-1}$), from the FitnessGram Progressive Aerobic Cardiovascular Endurance Run (PACER) test to a maximal graded exercise test (GXT; treadmill) in 17 (9 boys) young (10-11 yr old) children. In addition, VO2peak from the PACER test was compared (mean ± SD) to the estimated VO2peak using the Topend Sports Beep Test Score Calculator (Topend) equation.
METHODS: Subjects completed the PACER and GXT in a randomized order 1 week apart while wearing a heart rate monitor and a portable oxygen analyzer.
RESULTS: The PACER test VO2peak (30.4 ± 4.6) was not significantly different from the GXT VO2peak (32.1 ± 5.5) however, MHR GXT (194.8 ± 9.4) and MHR PACER (173.7± 20.9) were significantly ($p < 0.05$) different. Topend VO2peak (23.8± 2.9) was significantly ($p < 0.05$) lower than the PACER VO2peak. Both the GXT and the Topend VO2peak were significantly ($p <0.05$) correlated with the PACER (r=0.75 and 0.62, respectively). There was no significant correlation between the PACER and GXT MHR (r=0.40).
CONCLUSIONS: The PACER elicits a similar VO2peak response, however the Topend estimation equation should be used with great caution to estimate the cardiorespiratory fitness of young children.
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3761 Board #208 June 3 8:00 AM - 9:30 AM

Comparison of Health Related Fitness Variables between Male and Female Youths in Singapore

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Physical fitness encompasses health-related fitness (HRF) variables such as cardiovascular fitness (CF), lumbar and lower limb flexibility (LLLF), muscular strength (MS) and body fat percentage (BF%). To date, no large study has been conducted on HRF variables among Singaporean youths.
PURPOSE: To compare HRF variables between male and female Singaporean youths.
METHODS: One thousand four hundred and fifty-six youths (762 males: age: 13.63 ± 1.35 years, height: 158.36 ± 8.75 cm, weight: 53.82 ± 14.39 kg, BF%: 17.64 ± 10.73 %; and 694 females: age: 13.34 ± 1.21 years, height: 160.73 ± 8.68 cm, weight: 48.82 ± 10.9 kg, BF%: 25.74 ± 7.87 %) from Singapore schools participated in this study. Body Mass Index (BMI) was calculated using standard methods and BF% was measured with a Tanita BC-581 FitPlus Innerscan Scale and Body Composition Monitor. CF, LLLF, and MS were tested using the 15m youth Progressive Aerobic Cardiovascular Endurance Run test (PACER), one-legged sit-and-reach test (SRT), handgrip strength test (HS), and 1-minute sit-up test (SUT) respectively.
RESULTS: 76.65% of the youths (males: 77.82%, females: 82.56%) were in the healthy BMI range according to the Health Promotion Board of Singapore. Significant differences were found between males and females for all variables (BF %: Males: 17.64 ± 10.73 %, Females: 25.74 ± 7.87 %, $p <0.005$; SRT: Males: 52.97 ± 10.04 cm, Females: 55.53 ± 10.03 cm, $p <0.005$; HS: Males: 28.35 ± 7.98 kg, Females: 20.77 ± 4.11 kg, $p <0.005$; SUT: Males: 43.26 ± 11.29, Females: 33.24 ± 9.16, $p <0.005$;