CONCLUSIONS: Our hypothesis was partly explained by the data. These data show that exercise bouts lasting less than 60 s deviate from the linear model of the power-duration relationship. However, time to exhaustion greater than 60 s can be predicted using the power-duration relationship. This suggests that mechanisms that may not have had a significant role at lower intensities become the limiting factor to exercise tolerance at intensities greater than ~170 %Peak (75 %1RM).

PurPOSE: The objective of the present study is to investigate the relationships between body composition, nutritional profile, muscular fitness (MF) and bone health in a sample of children and adolescents from Colombia.

METHODS: Participants included 1,118 children and adolescents (54.6% girls). Broadband ultrasound attenuation (BUA) was obtained by using quantitative ultrasound technique at the calcaneus as a marker of bone health. Body composition (fat mass and lean mass) was assessed using bioelectrical impedance analysis. Furthermore, height, weight, waist circumference and Tanner stage measured and body mass index (BMI) was measured. Standing long-jump and isometric handgrip dynamometry were used as indicators of lower and upper body muscular fitness, respectively. Also, a muscular index score was computed by summing up the standardised values of both standing long-jump and handgrip strength. Dietary intake and degree of adherence to the Mediterranean diet were assessed by a 7-day recall questionnaire for food frequency and the Mediterranean Adherence Verification Study (MAVS). Poor body health was considered using a Z-score cut off of ≤−1.5.

RESULTS: Once the adjustment was performed (by age and Tanner stage), the predisposing factors of having a c-BUA z-score ≤−1.5 SD included: included: being underweight [OR 2.30 (95% CI 1.53 to 1.69)], or being obese [OR 0.17 (95% CI 0.04 to 0.69)], having an unhealthy lean mass [OR 2.51 (95% CI 1.74 to 3.60)], unhealthy levels of fat mass [OR 0.46 (95% CI 0.29 to 0.74)], unhealthy SLJ performance [OR 1.55 (95% CI 1.09 to 2.19)], unhealthy handgrip performance [OR 3.77 (95% CI 2.29 to 6.20)], and unhealthy muscular index score [OR 2.22 (95% CI 1.42 to 3.47)].

CONCLUSIONS: In conclusion, body composition and MF influence bone health on a sample of children and adolescents from Colombia. Thus, promoting strength adaptation and preservation in Colombian youth will help to maximize bone health, an important protective factor against osteoporosis later in life.

Purposed: The purpose of this study was to calculate the HGS and the BC associated with the CR in the Students of Elective Course of Physical Activity and Sports (SECPAS) of the Pontificia Javeriana University (PJU) Bogota, D.C. Colombia.

METHODS: Descriptive correlation study, which 91 students aged an average of 22.5±4.5 years old, were assessed n=40 (44%) males and n=51 (56%) females. To determine the handgrip strength, the subjects completed a measurement of handgrip strength (HGS) in seated position using a dynamometer. The measurement of Hand Grip Strength (HGS) is one of the methods for evaluating the maximum isometric strength of the hand and forearm muscles, that is related to behavior adaptation and preservation in Colombian youth will help to maximize bone health, an important protective factor against osteoporosis later in life.

RESULTS: The measurement of Hand Grip Strength (HGS) is one of the methods for evaluating the maximum isometric strength of the hand and forearm muscles, that is related to predictive factors of health conditions of people. In addition, this is an indicator that relates the physical condition of young people with their Body Composition (BC), identifying Cardiovascular Risk (CR) factors in the university population.

Purposed: The purpose of this study is to relate the HGS and the BC associated with the CR in the Students of Elective Course of Physical Activity and Sports (SECPAS) of the Pontificia Javeriana University (PJU) Bogota, D.C. Colombia.

RESULTS: Values of HGS for RH and LH were compared, demonstrating that in the RH were higher than the LH for both genders. It was evidenced that the difference was 2.4% (4.5 kg). For 78% of students (n=71), are in an average classification of low HGS for the population. BC shows that the BF was classified as high, 24.2% (n=22) and very high, 35.2% (n=31) for both genders. It was evidenced that the BF of females 23.1% (n=21) was classified as very high in comparison to males, 12.1% (n=11). The SM, had a behavior classified as normal 65.9% (n=60), with a trend to the lower limit of SM with low level in males 62.5% (n=52), according to OMRON® parameters.

CONCLUSIONS: For males, was found a relation between HGS and BC, lower SM, greater BF and less HGS, become predisposing factors to develop CR. On the other hand, females showed a normal SM, higher BF and less HGS, it looks apparently normal, but hides a healthy appearance that prevents the CR control. Those indicators are useful to reorient the objectives of integral formation towards create healthy habits to SECPAS.

INTRODUCTION: Muscle biopsies have played a large role in the understanding of skeletal muscle physiology. While discomfort from the biopsy process is often reported, it is unknown if the activation of pain pathways and/or the administration of lidocaine during the procedure affects the motor control of the same muscle.

METHODS: Teenage (Age: 22 ± 2 years) underwent skeletal muscle biopsies of the VL of the right leg. Prior to and following the biopsy, subjects completed a maximal effort contraction. Four surface electromyographic signals were detected from the VL during the maximal contraction and decomposed into their constituent motor unit action potentials. The relationship between maximal motor unit firing rate (FRmax) and recruitment threshold (RT) were calculated for each subject pre- and post-hanging. Separate Paired-Samples T-Tests were run to examine for changes in slope coefficients and y-intercepts.

RESULTS: Our findings showed no significant change in slope (Pre: 0.40 ± 0.32; Post: -0.40 ± 0.21; p = 0.96) or y-intercept (Pre: 29.0 ± 7.3; Post: 30.8 ± 7.6; p = 0.26) following the biopsy process. Figure 1 below depicts the relationship between group mean FRmax (x-axis) and group mean RT (y-axis) both pre- and post-biopsy.

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