Body composition and muscular fitness in overweight and obese adolescents: Evasyon Study


Aim. Physical fitness has been considered a powerful marker of health, in childhood and in adulthood, independent of physical activity. A low fitness status during childhood and adolescence is associated with important health-related outcomes, such as increased future risk for obesity and cardiovascular diseases, impaired skeletal health. Moreover, the main objectives of weight loss intervention in children and adolescents are to decrease fat mass while maintaining fat-free mass. The aim was to assess the relationship between body-fat changes and strength performance in obese adolescents after 13 months in a multidisciplinary intervention.

Methods. Multi-intervention approach: Dual X-ray absorptiometry; Fat mass loss programme; Muscular fitness; Handgrip strength

Results. After controlling for age and Tanner stage, the body-fat during the EVASYON programme was significantly correlated with handgrip strength changes in females (r = -0.438, p = 0.022). Moreover, in males body-fat changes was correlated with standing broad jump changes (rho = -0.407, p = 0.058).

Conclusions. We found handgrip strength would be a good predictor of body-fat composition changes in females and standing broad jump in males. However, more researches are needed to find the best physical fitness predictor to body composition changes.

http://dx.doi.org/10.1016/j.ramd.2014.10.021

Effects of Pilates on the volume of iliopsoas muscles: a longitudinal MRI study

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Aim. The purpose of the present study was to analyze the effects of Pilates on the volume of iliopsoas muscles.

Methods. Magnetic resonance imaging (MRI) was used to determine the volume of gluteal muscles in 9 non-active healthy women, before and after 36 wk of a standardized Pilates training program (50 min/session, 2 session/wk). The MRI images (L1-L2 intervertebral disc to pubic symphysis), were used to calculate the volume iliopsoas. Pre- and posttraining comparisons were carried out using the paired Student’s t-test. Significant differences were assumed when P < 0.05.

Results. Before Pilates, the volume of iliopsoas was similar in the dominant and in the non-dominant side (248.4 ± 43.4 vs. 251.8 ± 31.8 cm³, P = 0.4). Compared to pre-training, after Pilates the volume of iliopsoas was similar in the dominant (248.4 ± 43.4 vs 256.5 ± 31.8 cm³, respectively, P = 0.4) and in the non-dominant side (251.8 ± 31.8 vs 258.1 ± 34.0 cm³, respectively, P = 0.4). The degree of asymmetry in muscle volume between the dominant and the non-dominant side was also similar before and after Pilates (1.3 ± 4.4 vs. 0.6 ± 1.7%, respectively, p = 0.7).

Conclusion. This study shows that 36 wk of Pilates do not increase the volume of the iliopsoas muscle group in physically non-active healthy women. The iliopsoas muscles play a secondary role in lumbo-pelvic control during a standardized Pilates training program.

http://dx.doi.org/10.1016/j.ramd.2014.10.022


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Aim. To study the independent and combined effects of self-rated health (SRH), self-rated physical activity (SRPA) and...