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### Effects of two different gluteal muscles training protocols on women

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**Aim:** Gluteal muscles are involved into a lot of daily life and sport movements. A review on the best exercises for gluteal muscles [1] suggests how to maximize the EMG activation of these muscles but does not offer any kind of information about the best way to train and about the effects of a training period of gluteal muscles on movement control. Aim of this study is to compare two different training protocols.

**Methods:** Fifteen volunteer women ( $36.6 \pm 5.5$  years;  $162.4 \pm 5.1$  cm;  $58.4 \pm 6.6$  kg) were divided in two homogeneous training groups. Each group was trained by the same instructor for 6 weeks, 2 time/w, 300 /session, the training volume and rest were the same for both groups. Three analytical exercises with emphasis on gluteus medius (Gm) and three integrated exercise with emphasis on gluteus maximum (GM) were performed in A-group and I-group respectively. Manual muscle test with hand held dynamometer (Lafayette Instrument, Sagamore Pkwy, US) and single leg squat video analysis (Freestep, Sensor Medica, Guidonia-RM, Italy) were performed pre and post the training period.

**Results:** Both Gm and GM strength significantly improved after both protocols (Gm : 26 and 40 %; GM : 78 and 90 % in A-group and I-group respectively). I-group showed highest values of improvement in comparison with A-group but there were only two significant differences (left Gm max strength and right GM mean strength). No significant differences were found in single leg squat control and deepness for any group.

**Conclusions:** Gluteal muscles training seems to be effective both with analytical and integrated exercises. The study does not show a strong significant difference between the groups in terms of strength improvement. Moreover, single leg squat control and deepness seems to be not connected with analytical or integrated gluteal muscles training.

#### Reference:

Reiman et al (2012) *Physiother Theory Pract* 28(4):257–268.