

# COMPARING THE EFFECTS OF LOW AND HIGH LOAD RESISTANCE EXERCISE TO FAILURE ON ADAPTIVE RESPONSES TO RESISTANCE EXERCISE IN YOUNG WOMEN



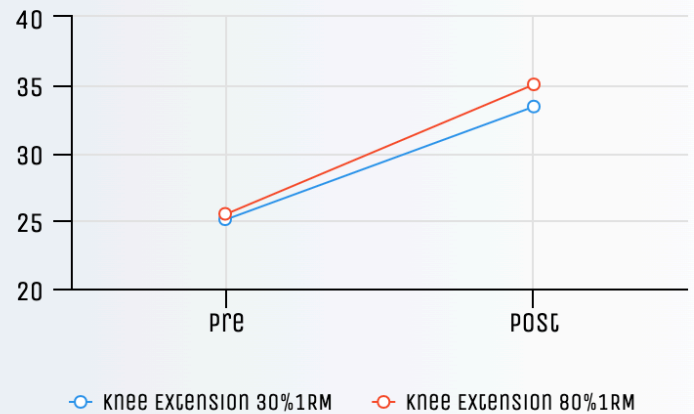
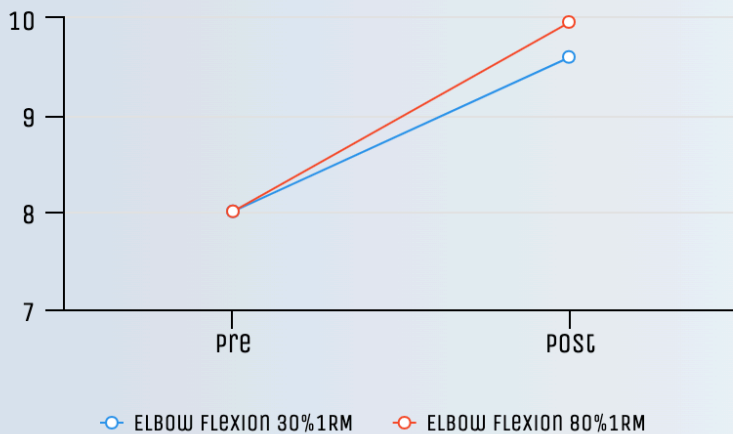
## Study Objectives

To compare the effect of 6 weeks of resistance training to volitional failure at low (30% 1 repetition maximum (RM) or high (80%1RM) loads on gains in muscle size and strength in young women.

## Measurements

Thirteen women (age:  $29.7 \pm 4.7$  years; height  $166.7 \pm 6.4$  cm; weight  $64.2 \pm 12.2$  kg) completed 2 training sessions per week for 6-weeks and muscle strength (1RM), muscle thickness (ultrasound) were measured before and after training. Training comprised 1 set to volitional failure of unilateral leg extensions and bicep curls with each limb randomly assigned to train at either 80% 1RM or 30% 1RM.

## Results



For the knee extension there was a main effect of time ( $P < 0.01$ ) but no group ( $P = 0.77$ ) or interaction ( $p = 0.66$ ) effects. Increases in strength [arms:  $15.4 \pm 12.2\%$  (30% 1RM),  $18.26 \pm 12.2\%$  (80% 1RM) and legs:  $25.30 \pm 18.4$  (30% 1RM),  $27.20 \pm 14.5$  (80% 1RM)] were not statistically different between 30% vs 80% loads.

## Conclusions

The study has demonstrated that when women performed 1-set to failure of resistance exercises, the training load (30% 1RM and 80%1RM) or the training volume, do not determine the magnitude of the increase in muscle size and strength.

**Click for link:** Stefanaki, D.G.A., Dzulkarnain, A. and Gray, S.R., 2019. Comparing the effects of low and high load resistance exercise to failure on adaptive responses to resistance exercise in young women. *Journal of sports sciences*, 37(12), pp.1375-1380.