



## **SUMMARY DOCUMENT OF THE LEGMASTER VS. TRADITIONAL STRENGTH TRAINING STUDY**

### Rationale:

There are numerous pieces of exercise equipment in the fitness domain, whose manufacturers claim that training with their product can lead to reductions in body fat and improvements in fitness. There is a paucity of empirical research that exists to test the claims of these manufacturers. The present study was designed to test the efficacy of one piece of commercially available equipment-The LegMaster (Designer-Neil Summers).

### Aim:

The primary aim of the study was to assess the efficacy of 6-weeks of traditional strength training vs. 6-weeks of an alternative strength training approach (LegMaster) in changing body composition (% body fat) in a group of recreationally active college-aged females.

### Hypothesis:

Strength training (in the traditional Gym Workout) will produce greater increases in muscle tone and greater reductions in body fat levels compared to the LegMaster.

### Methods:

14 college-age females, who were deemed recreationally active, participated in the study. They were randomly assigned to either a traditional strength training group (twice a week strength training in a gym, low weights, multiple repetitions) or the LegMaster training group (6days per week, following the manufacturer's guidelines)). Both groups had the muscles of the lower limbs tested and skinfold thickness (this can be used as a surrogate of percent body fat levels) measured at selected sites, both prior to and following the 6 week training period. All subjects were encouraged to maintain their normal diets.

Results:

Skinfold results (Part 1):

As expected, the traditional two day per week strength training study resulted in significant reductions in skinfold thickness of the: mid-thigh, medial calf, mid-calf, triceps and suprailliac.

However, significant reductions in skinfold thickness were also noted for: mid-thigh, medial calf, mid-calf, triceps and suprailliac with the Legmaster. **In the case of mid-thigh, the reduction in skinfold thickness was greater with the LegMaster than noted for traditional strength training.**

**One other interesting finding is that reductions in upper body skinfold thickness were noted (triceps, suprailliac) for both groups, even though the prescribed training focused only on the lower limb.**

Skinfold results (Part 2):

**There was a significant reduction in the subscapular skinfold thickness in the LegMaster group training group. This reduction in subscapular skinfold thickness was not seen in the GYM training group. These results indicate that the LegMaster conferred benefits on upper body fat percentage that were not seen in the GYM group.**

Muscle mass:

As anticipated, the Gym training group generated an increase in muscle mass that was significantly greater than the Leg Master. **However, there were increases in total body muscle mass in the LegMaster group also.**

Percent muscle mass:

As anticipated, the Gym training group generated an increase in percent muscle mass that was significantly greater than the Leg Master. **However, there were increases in percent muscle mass in the LegMaster group also.**

Implications of findings:

As was hypothesised at the outset of the study, 6-weeks of strength training in the gym resulted in: significant reductions in lower limb body fat levels, improved muscle tone and increased muscle mass. **However, there was evidence that LegMaster training also resulted in significant reductions in lower limb body fat levels and increased muscle mass.** With regard to the mid-thigh skinfold measurement, the LegMaster training group resulted in reductions in skinfold thickness that were in excess of that seen in the GYM group. This means simply that the use of the Legmaster is more effective at slimming the thighs than a traditional gym weighted work out.

One surprising finding was the reduction in sub-scapular and triceps skinfold thickness noted in the LegMaster group, this could have been a product of gripping the central support pillar of the LegMaster throughout the training and this isometric contraction resulting in increased muscle tone in the subscapular and triceps regions. Equally, the increase in total body muscle mass may have resulted in an increase in metabolic rate and a decrease in body fat in regions not specifically targeted by the LegMaster.

Limitations:

It is possible to speculate that if the LegMaster training protocol incorporated a greater recovery time period and training sets that exceed one, it is possible that greater improvement in muscle tone could also be generated by the LegMaster.

**Conclusion:**

**The LegMaster does appear to be a piece of fitness equipment that can reduce body fat levels and increase muscle mass in recreationally active college aged females. Considering the short duration of the training program, these benefits are extremely encouraging and with appropriate adjustment to the intensity and frequency of training, the LegMaster can make a significant contribution to increased health and fitness in women.**

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