Coached and Periodized Exercise Training Yields Superior Improvements in Lean Body Mass Compared with Self-Directed Training in Health Club Members

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Abstract

A wide variety of exercise training methods are used for improving health and performance-related fitness among personal trainers working with private clients or within a health/fitness club setting as well as by individuals who self-train. However, there are few published data to suggest that goals for improved body composition, muscle performance or aerobics fitness are achieved in these settings even when exercise training is conducted by personal trainers. We had the opportunity to study members of a local health/fitness club, part of an international chain, that uses individually designed exercise programming templates developed from evidence-based recommendations (1) and scientifically supported methods (2). There are no data however, that indicate whether this specific method or any method conducted by personal trainers is superior to training that is self-directed and self-regulated in a defined fitness club setting.

Subjects

- Male health club members aged 18-60 years, N = 34
- Randomized to SELF after 6 weeks of thrice weekly training.
- TRAINED (N=17) SELF-TRAINED (N=17)
- Lost to follow-up in SELF (N=1)

RESULTS

Table 1. Changes from baseline in lean body mass and other measures of body composition, mean (SD)

<table>
<thead>
<tr>
<th>Measure</th>
<th>TRAINED</th>
<th>SELF</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lean body mass (kg)</td>
<td>4.25 (2.97)</td>
<td>-0.18 (2.24)</td>
<td>0.029</td>
</tr>
<tr>
<td>Percent body fat (%)</td>
<td>2.05 (4.40)</td>
<td>0.59 (2.42)</td>
<td>0.046</td>
</tr>
<tr>
<td>Fat mass (kg)</td>
<td>1.02 (0.86)</td>
<td>-0.08 (1.10)</td>
<td>0.029</td>
</tr>
<tr>
<td>Skeletal muscle mass (kg)</td>
<td>0.03 (1.28)</td>
<td>-0.06 (0.92)</td>
<td>0.029</td>
</tr>
</tbody>
</table>

Table 2. Muscle strength and power changes after 12 weeks of exercise training, mean (SD)

<table>
<thead>
<tr>
<th>Measure</th>
<th>TRAINED</th>
<th>SELF</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chest Press 1-RM (kg)</td>
<td>36.8 (8.1)</td>
<td>33.6 (9.2)</td>
<td>0.029</td>
</tr>
<tr>
<td>Leg Press 1-RM (kg)</td>
<td>250.0 (56.3)</td>
<td>257.2 (60.5)</td>
<td>0.031</td>
</tr>
<tr>
<td>Leg Power (watts) Peak</td>
<td>662.0 (186.6)</td>
<td>708.7 (208.6)</td>
<td>0.001</td>
</tr>
<tr>
<td>Leg Power (watts) Average</td>
<td>478.2 (136.6)</td>
<td>521.5 (161.5)</td>
<td>0.001</td>
</tr>
</tbody>
</table>

METHODS

- Personal Trainers
  - Using pre-structured degrees in exercise science or related disciplines.
  - One or more nationally recognized fitness trainer certifications (NSCA, ACSM, etc).
  - At least 25 hours in house supervised/training.
  - Each designed ‘Tag Team’.
- Assessments
  - Baseline and post-exercise training - DXA scanning was administered by one of the investigators (JT) at the UCLA Health clinical research center.
  - Three days of testing in the health club setting; FFA levels were measured at the start and 5 minutes after. In their planned sessions plus an additional group average of 3 days per week of training that was outside of the specified training.

CONCLUSIONS

Significant increases in LBM are more probable when fitness club members exercise with experienced personal trainers using a well-conducted periodized exercise training program compared with members who choose to train on their own. Other measures of fitness including muscle strength and power and some measures of aerobic functional fitness were not significantly different after the intervention.

PRACTICAL APPLICATIONS

- Health/fitness club members wishing to improve one or more domains of fitness should seek qualified and experienced personal trainers to guide their training as opposed to training by self-direction.
- Personal trainers should continually expand their knowledge on the most effective training methods using evidence-based recommendations where appropriate.

REFERENCES