

STRENGTH TRAINING AND VOLUME OF REPS FOR WEIGHT LOSS: A SYSTEMATIC REVIEW

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INTRODUCTION

Overweight and obesity according to World Health Organization⁽¹⁾, overweight and obesity together are the main cause of many systemic diseases representing the fifth overall risk of death killing about 2.8 million adults per year. How treatment of obesity, weight reduction is your most common goal, achieved by reducing the intake and increased energy expenditure, and the expenditure is enhanced with physical exercise⁽²⁾. Several exercises have been suggested to enhance weight loss, both aerobic and anaerobic, or even a combination of these⁽³⁾. This exercise helps in weight loss by raising the basal metabolic rate (BMR), and strength training (ST) has proved beyond higher than this aerobic training and various other aspects⁽⁴⁾ effectively. However, although the TF contributes to weight loss, the handlings of their variables are not clearly described in the literature. Therefore the aim of this study was to investigate the scientific evidence concerning the number of repetitions (NR) used in the studies that used the ST toward weight loss.

METHODS

Design: This was a systematic review, which followed the recommendations PRISMA. Being held in databases: SciELO, PubMed, and Google Scholar search (GS) site for having some national magazines are not available in the above bases. **Search Articles:** began with the search for key terms in the Health Sciences Descriptors "DESC", and the Medical Subject Headings (MeSH), selecting the terms in English and Portuguese (Treino de Força/Strength Training, Treinamento Resistido/Resistance Training; Número de Repetições/Number of reps; Perda de Peso/Wight Loss). There was the proper insertion of the Boolean operators "AND" to separate the Terms and "OR" to separate the synonyms, and the survey took place between Dec/2013 Jan/2014. **Inclusion criteria:** we included only trials with independent variable strength training and the dependent variable slimming, and disbelieve the number of replicates used in the intervention. **Eligibility criteria:** when selected the title, relied on the technique suggested by Lakatos; Marconi (2003), read the summary, and if met the criteria, performed to read the full article. **Statistical analysis:** was verified the mean and standard deviation of replicates studies found through the software (IBM ® SPSS ® Statistic, vs 21, New York / USA, 2012).

RESULTS AND DISCUSSION

Met 17 studies, 09 national and 08 international, where 16 of the studies showed the ST to weight loss (<% BF), and mean and standard deviation of the minimum repetitions (9.59 ± 2.47) and maximum (12.47 ± 2.83), the data are presented in Table 1.

As for the NR used, only lies guidelines aimed at maintaining health, as the guidelines American College of Sports Medicine (ACSM) and the American Heart Association (AHA)⁽⁵⁾, recommending between (8-12) repetitions for maintenance health. However, as the objective ST is specifically weight loss, we note a gap, and NR end up being handled according to expertise and / or experience of each researcher. The studies that showed off the medium as, at first, it was about people with liver problems, which may have led to a low intensity use with larger of repetitions, in the second, the strength training intervention was justifying a lower number of repetitions. It may be

noted that there is some similarity enters recommendations for maintaining health⁽⁵⁾, and the average number of repetitions voted for weight loss found in studies (8-12) and (9±2 to 12±2) respectively. Contradicting a myth that persists between the gyms and fitness centers, where many professionals suggest that ST for weight loss should contain minor (lower load), and lower volumes (number of repetitions) intensities. For, among the 17 (100%) studies found only 01 (3.89%) did not find significant results in the reduction of fat, making it clear that besides the ST be an effective form of intervention for weight loss⁽³⁾, and its number of repetitions should be used in (9±2 and 12±2) repetitions.

Table 1 - Outcome of the studies found

N°	Studies	< N° Rep	>N° Rep	Upshot
1	Kraemer et al. (1997)	5	10	<% G
2	Prabhakaran et al. (1999)	8	8	<% G
3	Santos et al. (2002)	8	12	N<% G
4	Janssen et al. (2002)	8	12	<% G
5	Layman et al. (2005)	12	12	<% G
6	Varela et al. (2007)	15	15	<% G
7	Batista et al. (2008)	10	15	<% G,
8	Veloso; Freitas. (2008)	8	12	<% G
9	Macedo; Silva. (2009)	12	15	<% G
10	Rezende et al. (2009)	6	15	<% G
11	Goncalves et al. (2010)	8	12	<% G
12	Wycherley et al. (2010)	8	12	<% G
13	Chinen et al. (2011)	10	10	<% G
14	Fisher et al. (2011)	10	10	<% G
15	Willis et al. (2012)	10	12	<% G
16	Monteiro et al. (2013)	15	20	< % G
17	Sanal et al. (2013)	10	10	<% G
Minimum & Maximum		(5 – 15)	(8 – 20)	
Mean - Standard Deviation		(9,59 ± 2,47)	(12,47 ± 2,83)	

Legend: <N° Rep.: Fewest repetitions; >N° Rep: Increased number of repetitions; <% G: Decreased fat percentage; N<G%: Not reduced the percentage of fat.

CONCLUSION

In conclusion that the prescription of the number of repetitions in strength training focused on weight loss, based on the literature should be around between 9 and 12 repetitions.

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