



National Academy of Sports Medicine

NASM Weight Loss Literature Review

Executive Summary

A majority of U.S. adults report that they are actively attempting to either lose weight or maintain their current weight. Most individuals seeking to either lose weight or maintain their weight do so through less than optimal strategies (e.g., not incorporating enough exercise, not reducing calorie intake). Studies consistently show that diet alone is more effective than exercise alone for weight loss. However, due to exercise's association with maintained weight loss, incorporation of and adherence to an exercise program becomes critical. Compared to diet alone, individuals combining diet and exercise lose less muscle mass and have a better chance of maintaining their weight loss. Research has further demonstrated that individuals seeking to lose weight through exercise alone (i.e., no active dieting) lose twice the amount of weight when assisted by a personal trainer (compared to exercise alone without a personal trainer). Another benefit of personal trainers is their demonstrated ability to increase exercise program adherence. Additionally, personal trainers have been found to effectively help individuals move from an action to maintenance phase of exercise. This collection of research can be synthesized to suggest that personal training, when combined with diet, can increase both current weight loss efforts as well as increase the likelihood of maintaining any weight loss achieved.

1. What are the obstacles to maintaining weight loss?

- a. Weight loss during the active phase of treatment averages about 10-20 kg. Approximately 40-60% of this weight loss is regained within 1 year and a complete return to initial body weight tends to occur within 5 years (NIH, 1992; McGuire et al., 1999).
- b. More than 2/3 of US adults are trying to lose or maintain weight. Only 1/5 of those trying to lose weight are doing so through the recommended combination of diet and exercise (i.e., 150 minutes/week) (Serdula, et al., 2012).
 - i. Of the 2/3 of US adults trying to lose or maintain weight, only 1/2 report using exercise as part of this strategy (Serdula, et al., 2012).
 1. Based on findings from Pronk & Wong (1994), this would suggest that the majority of adults will fail to maintain any weight loss achieved (See research summarized in 2b below).
- c. Of the 2/3 of US adults trying to lose or maintain weight, 35% of the men and 40% of the women report no alteration in caloric intake (only a reduction in food's fat content) (Serdula, et al., 2012).
 - i. Said another way, many people trying to lose weight through diet are doing so in ineffective ways.

- d. U.S. Men report an average desired weight loss of 9kg (19.8lbs), whereas women report an average desired weight loss of 11.3kg (24.9lbs) (Serdula, et al., 2012).
- e. There are mixed findings regarding the dangers of increased exercise during weight loss. Some research warns that increased exercise will lead to further hunger and potential compensatory overeating. Other research does not find that increased exercise is associated with increased caloric consumption (Donnelly, et al., 2003).
- f. Examination across multiple studies indicates that an expenditure of 1500 – 2000 calories per week through exercise is associated with increased weight maintenance (Fogelhom & Kukkonen-Harjula 2000).

2. Is diet more effective than exercise?

- a. Exercising without dieting leads to only 1/5 the weight loss benefits of just dieting alone (Miller & Hamilton, 1997).
- b. People incorporating both diet + exercise (vs. just diet or just exercise) maintain their weight loss at a higher rate after 1 year (Miller & Hamilton, 1997; Pronk & Wong, 1994).
 - i. Of people maintaining their weight loss for 2 years, 90% reported engaging in regular exercise at least 3 days a week for at least 30 minutes (Kayman, Bruvold, Stern, 1990; Pronk & Wong, 1994).
 - ii. Frequent monitoring of weight (via scale) is also predictive of long-term weight loss maintenance (McGuire, Wing, Klem, & Hill, 1999).
- c. Diet plus exercise results in less fat free mass (i.e., muscle) loss compared to diet alone. These findings are consistent for both men and women (Ballor & Poehlman, 1994).
 - i. Exercise intensity needed to achieve these results is fairly modest (approximately 3 times per week of low to moderate intensity exercise).

3. How does personal training impact weight loss?

- a. Personal training results in a greater level of commitment from clients. 73% of participants in personal training moved up a stage (e.g., contemplation to action; action to maintenance) (McClaran, 1996).
- b. Individuals assigned a personal trainer (vs. no trainer) adhered to exercise program at a higher rate (84% compared to 64%) over a 24 month timeframe (Wing, et al., 1996).

- c. Use of personal trainers doubled the rate at which people attended exercise sessions (compared to a behavioral therapy comparison group) (Jeffery, et al., 1998).
- d. Although typically smaller than diet related weight loss, the weight loss associated with an exercise only approach to weight loss is doubled when conducted by a supervising professional (e.g., personal trainer) (Nicolai, et al., 2009).
- e. In person & remote weight loss coaches appear to be of comparable effectiveness (Appel, et al., 2011).

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