

Paraphrase of

Appropriate Physical Activity Intervention Strategies for Weight Loss and Prevention of Weight Regain for Adults

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Abstract

Overweight and obesity affects more than 66% of the adult population ... associated with a variety of chronic diseases.

Guidelines of the National Heart, Lung, and Blood Institute (NHLBI) encourage a 10% reduction in weight....

Physical activity (PA) is recommended as a component of weight management for prevention of weight gain, for weight loss, and for prevention of weight regain afterwards.

Evidence supports

- **Moderate-intensity PA between 150 and 250 min/week to be effective to prevent weight gain.** Moderate-intensity PA between 150 and 250 min/week will provide only modest weight loss.
- **Greater amounts of PA (>250 min/week) have been associated with clinically significant weight loss.**
- **Moderate-intensity PA between 150 and 250 min/week will improve weight loss in studies that use moderate diet restriction....**
- ... weight maintenance is improved with PA >250 min/week
- **Resistance training does not enhance weight loss but may increase fat-free mass and increase loss of fat mass and is associated with reductions in health risk.**
- ... endurance PA or resistance training without weight loss improves health risk.

... light-intensity activity is defined as 1.1 to 2.9 METS, moderate-intensity activity is 3.0 to 5.9 METS, and vigorous activity is ≥ 6 METS.

RATIONALE FOR WEIGHT MANAGEMENT

Overweight and obesity are defined by a body mass index (BMI) of 25 to 29.9 kg/m² and 30 kg/m² or greater, respectively. Together, overweight and obesity are exhibited by approximately 66.3% of adults in the US.

Both overweight and obesity are characterized by the accumulation of excessive levels of body fat and contribute to heart disease, hypertension, diabetes, and some cancers as well as psychosocial and economic difficulties.

The cost of treatment of weight reduction is now estimated to exceed \$117 billion annually.

... the beneficial effects of diminished weight and body fat in overweight and obese individuals. These beneficial effects include an improvement in CVD risk factors such as decreased blood pressure, decreased LDL-C, increased HDL-C, decreased triglycerides (TG), and improved glucose tolerance. Weight loss has also been associated with a decrease in inflammatory markers, such as C-reactive protein, which have also been associated with the development of CVD.

The NHLBI Guidelines recommend a minimum weight loss of 10%. ... beneficial improvements in chronic disease risk factors have been reported with as little as 2-3% of weight loss

PA Will Promote Clinically Significant Weight Loss.

A negative energy balance generated by PA will result in weight loss, and the larger the negative energy balance, the greater the weight loss.

... men and women who experienced a 500- to 700-kcal/d deficit for 12 week had weight loss of 7.5 kg (8%) and 5.9 kg (6.5%), respectively

It is likely that **any increase in PA has the potential for weight loss; however, it seems that**

PA <150 min/week results in minimal weight loss compared to controls,

PA > 150 min/week results in modest weight loss of ~2-3 kg, and

PA between 225 and 420 min/week results in 5- to 7.5-kg weight loss.

Thus, a dose effect is apparent for PA and weight loss, and higher doses are capable of providing 3% or greater weight loss from initial weight.

PA Will Prevent Weight Regain after Weight Loss.

It is **generally accepted that most individuals can lose weight but cannot maintain weight loss.** ... The CDC/ACSM recommendations for PA specified the accumulation of 30 min of moderate-intensity PA for most days of the week...**Minimum levels of 150 min/week (30 min/d, 5 d/week) of moderate-intensity PA** were also recommended... show very little weight regain in individuals who performed >200 min/week of moderate-intensity PA. ... individuals who achieved a weight loss of >10% of initial body weight at 24 months were participating in 275 min/week (approximately 1500 kcal/week) of PA activity above baseline levels.

... **weight maintenance (weight fluctuation <3%) is likely to be associated with ~60 min walking per day (~4 miles/d) at a moderate intensity.**

PA combined with energy restriction will increase weight loss.

... a reduction in energy intake plays a significant role in reducing body weight

... When the energy deficit imposed by diet-only and diet plus PA interventions are similar, weight loss and/or percent change in body weight are similar. ... the addition of PA to severe diet restriction may result in metabolic adaptations that diminish any additive effect of the energy expenditure from PA on weight loss.

In studies where energy restriction is not severe (i.e., 500-700 kcal), there is evidence that diet combined with PA is associated with significantly greater weight loss compared to diet alone. ...

...In summary, **PA and diet restriction provide comparable weight loss if they provide similar levels of negative energy balance. It seems PA will increase weight loss in combination with diet restriction if the diet restriction is moderate but not if it is severe.**