

# Physical Activity

## Rationale

A search of the *Physical Activity Guidelines for Americans* Scientific Database identified 126 research articles on the effect of physical activity on weight loss and weight stability. Additionally, pertinent reviews available through a MEDLINE search were considered.

## Cross-Sectional Studies

Twenty-four cross-sectional studies were identified that examined the association between physical activity and body weight. Of these 24 studies, 23 reported results suggesting an inverse relationship between physical activity and body weight and/or body mass index (BMI) (1-23). These studies tended to illustrate a dose-response relationship between physical activity and body weight or BMI. For example, Giovannucci and colleagues (2) reported that when 0.9, 4.8, 11.3, 22.6, and 46.8 MET-hours per week were used to define quintiles of physical activity, corresponding BMI values were 25.4, 25.3, 25.1, 24.7, and 24.4 kg/m<sup>2</sup>, respectively. More recently, Kavouras and colleagues (3) reported that individuals participating in physical activity that is consistent with the current consensus public health recommendations of at least 30 minutes per day on 5 days a week had a significantly lower BMI (25.9 kg/m<sup>2</sup>) when compared to the BMI (26.7 kg/m<sup>2</sup>) of less active individuals (Figure G4.1). Thus, based on these findings, it appears that levels of physical activity that are consistent with a range of 30 to 60 minutes per day on at least 5 days per week (150 to 300 minutes per week) is sufficient to maintain and/or significantly reduce body weight.

## Prospective Studies

Nine prospective studies were identified that reported on the benefits of physical activity to prevent weight gain and/or result in weight loss (24-32). Three studies, which had a follow up period of 1 to 3 years, all reported a favorable association between physical activity and weight-related outcomes (24;25;27). The remaining 6 studies, which had a follow-up period of 6.5 years or greater, also reported a favorable association between physical activity and weight-related outcomes (26;28-32). Berk and colleagues (31) found that individuals who initially reported less than 60 minutes per week of physical activity and increased to 134 minutes per week of physical activity had an increase in BMI of 0.4 kg/m<sup>2</sup> across a 16-year follow-up period, but this was not significantly different from the 0.9kg/m<sup>2</sup> increase observed for individuals who remained sedentary (less than 60 minutes per week) at both assessment periods. These data suggest that less than 150 minutes per week of physical activity will result in a non-significant blunting of weight gain compared to individuals who remain sedentary. However, individuals who were classified as active at both assessment periods were participating in 261 minutes per week of physical activity, and had a significantly smaller change in BMI compared to individuals who were initially active (more than 60 minutes per week) at baseline but became inactive at follow-up (less than 60 minutes per week). This supports the need to maintain a physically activity lifestyle to manage body weight long-term.

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Excerpted from: Physical Activity Guidelines for Americans. Accessed 1/21/10.