



U.S. Department  
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Center for  
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# Screen Time and Body Weight: A Review of the Evidence

## Nutrition Insight 47

### BACKGROUND

Maintaining a healthy body weight is vital for good health. However, many Americans are overweight or obese, indicating that they consume more calories from foods and beverages than they expend through normal bodily function and physical activity.

A growing body of research has investigated the impact of various behaviors, such as screen time, on body weight. Screen time, or time spent watching television, using the computer, and/or playing video games, has been suggested to result in decreased physical activity. Screen time may also impact dietary intake due to the influences of food advertising or passive overconsumption of food while engaging in screen time. These behaviors may, therefore, contribute to current trends in obesity rates.

This *Nutrition Insight* provides an overview of the systematic reviews on the relationship between screen time and body weight in children and adults conducted by the 2010 Dietary Guidelines Advisory Committee (DGAC) and the USDA Nutrition Evidence Library (NEL) to support the development of the *Dietary Guidelines for Americans, 2010*.

### REVIEW OF THE EVIDENCE

The 2010 DGAC conducted two systematic reviews examining the relationship between screen time and body weight in children and adults using a rigorous, transparent, and reproducible methodology (Spahn, J.M., Lyon, J.M.G., Altman, J.M. et al., 2011). The 2010 DGAC report can be accessed at [www.dietaryguidelines.gov](http://www.dietaryguidelines.gov), and information on search terms, databases queried, evidence abstraction and analysis, and criteria for study quality can be accessed at [www.nutritionevidencelibrary.gov](http://www.nutritionevidencelibrary.gov).

#### *Children*

The 2005 DGAC reviewed evidence related to children's television viewing and weight status. They concluded that reducing sedentary behaviors, including television- and video-viewing time, may be an effective way to treat or prevent overweight among children and adolescents (Dietary Guidelines Advisory Committee, 2005).

#### USDA NUTRITION EVIDENCE LIBRARY

The USDA Nutrition Evidence Library (NEL) specializes in conducting systematic reviews to inform Federal nutrition policy and programs. The Library is a key resource for making food and nutrition research accessible to all Americans.

[www.NEL.gov](http://www.NEL.gov)

Therefore, the 2010 DGAC chose to include only systematic reviews and meta-analyses published since the 2005 DGAC review (2004 to 2009) in their systematic review on screen time and body weight in children.

The 2010 DGAC systematic review included one meta-analysis that examined the relationship between screen time and body fatness. The meta-analysis was rated positive quality and included 30 studies, with a total of 44,707 subjects under 18 years of age, published since 1985. The results of this study found a small, significant positive relationship between television viewing and body fatness, noting that much of the variance in body fatness could be explained by factors other than television viewing. In addition, the study found no association between body fatness and video game or computer use.

#### *Adults*

The relationship between screen time and body weight in adults was not addressed by the 2005 DGAC. Therefore, the 2010 DGAC included all studies (with the exception of narrative reviews and cross-sectional studies) published between 2000 and 2009 in their systematic review.

The NEL systematic review conducted to investigate the relationship between screen time and body weight in adults included eight prospective cohort studies. All eight studies were rated positive quality. The studies were conducted in the United States, the United Kingdom, and New Zealand. Studies ranged in sample size from 902 to 50,277 subjects. Most studies included both men and women; one study included only men and two studies

included only women. The duration of the studies ranged from 1 year to 45 years.

All eight studies examined television viewing only and did not examine other types of screen time. Measures of body weight included risk of obesity, waist circumference, and changes in body weight or body mass index (BMI).

The results from all eight studies reviewed found that increased time spent viewing television was significantly associated with increased body weight in adults.

## CONCLUSIONS AND FUTURE RESEARCH

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The 2010 DGAC concluded that strong and consistent evidence in both children and adults shows that screen time is directly associated with increased overweight and obesity. The strongest association is with television screen time.

In addition, the 2010 DGAC indicated that additional research is needed to better understand how dietary intake-related behaviors, such as screen time, impact eating practices, physical activity, and body weight.

## FROM RESEARCH TO RECOMMENDATIONS

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The conclusions from the 2010 DGAC report, including those on the relationship between screen time and body weight, formed the basis for the recommendations made in the *2010 Dietary Guidelines for Americans* (DGA) (U.S. Department of Agriculture and U.S. Department of Health and Human Services, 2010).

The 2010 DGA encourage individuals to select a healthy eating pattern that meets nutrient needs at an appropriate calorie level over time in order to achieve these goals. The following are the key recommendations from the 2010 DGA related to balancing calories to manage weight:

- Prevent and/or reduce overweight and obesity through improved eating and physical activity behaviors.
- Control total calorie intake to manage body weight. For people who are overweight or obese, this will mean consuming fewer calories from foods and beverages.
- Increase physical activity and reduce time spent in sedentary behaviors.
- Maintain appropriate calorie balance during each stage of life—childhood, adolescence, adulthood, pregnancy and breastfeeding, and older age.

In order to achieve energy balance and maintain a healthy weight, the 2010 DGA highlights several behaviors, including screen time, that have been shown to impact body weight. The 2010 DGA includes the following guidance related to screen time:

**Limit screen time.** In children, adolescents, and adults, screen time, especially television viewing, is directly associated with increased overweight and obesity.

- Children and adolescents are encouraged to spend no more than 1 to 2 hours each day (American Academy of Pediatrics, 2001) watching television, playing electronic games, or using the computer (other than for homework).
- Avoid eating while watching television, which can result in overeating.

## REFERENCES

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