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## **Weight Control Strategies and Diet Quality**

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# Weight Control Strategies and Diet Quality

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## INTRODUCTION

Obesity and overweight have increased over last several decades and are associated with non-communicable disease and mortality in the United States.

-- In 2007-8, 34% of American adults (20+ years old) were obese (BMI  $\geq 30$ ) and another 34% were overweight ( $25 \leq \text{BMI} < 30$ ) (Flegal *et al.*, 2010)

-- Obesity and overweight have many health, social, psychological, and economic consequences. In particular, medical expenditures attributable to obesity and overweight were \$86 billion - \$147 billion, accounting for more than 9% of US medical expenditures in 1998 (FDA 2011)

The Dietary Guidelines for Americans recommend people manage their weight by eating a healthy diet and being physically active. Specifically, the 2000 Guidelines recommended:

- (1) choosing a healthful assortment of fruits and vegetables, grains, skim milk, fish, lean meat, poultry or beans low fat, low calorie foods
- (2) choosing foods low in fat and added sugars
- (3) eating a sensible portion size, and
- (4) being physically active

From a public health point view, it is important that individuals do not trade the quality of their diet for the goal of weight management. Otherwise, their overall health and economic welfare may not improve and the Nation's economic burden may increase.

Previous research shows people use a variety of weight management strategies, some are consistent with the Guidelines and others are not (e.g., Weiss *et al.*, 2006; Serdula *et al.*, 1999). Previous research also shows that different strategies are associated with different patterns of dietary intakes (e.g., Neumark-Sztainer *et al.*, 2000). Yet, there is little knowledge about how different weight control strategies may influence dietary quality.

## OBJECTIVES AND HYPOTHESES

### Objectives

- reports prevalence of weight control strategies among respondents to the 2003-2004 National Health and Nutrition Examination Survey
- examines influences of the use of specific weight control strategies on dietary quality

### Hypotheses

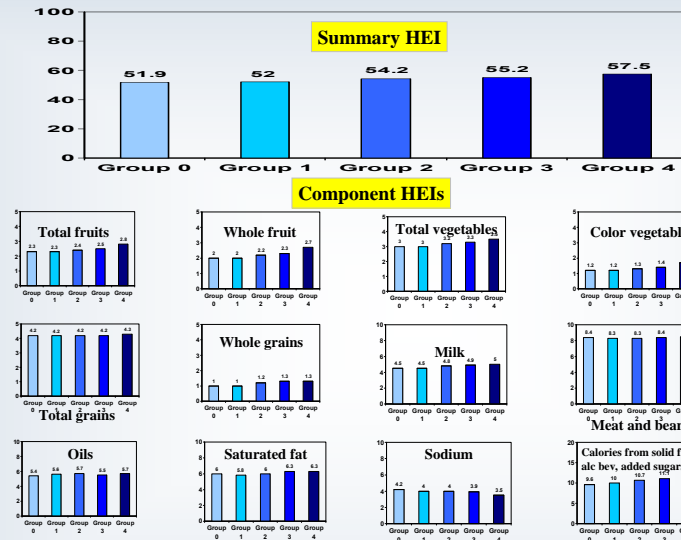
1. HEIs of “controllers” and “non-controllers” are differ
2. The more recommended strategies a “controller” use, the higher his/her HEI is

## RESULTS

Group 0 = no weight control (50% of respondents); Group 1 = used  $\geq 1$  non-recommended methods (10%);

Group 2 = used 1 of 3 recommended methods (23%); Group 3 = used 2 of 3 recommended methods (8%);

Group 4 = used only all 3 recommended methods (9%)



## Regression Estimates – Groups of Controllers Relative to Non-controllers

HEI score ( min – max )	Group 1	Group 2	Group 3	Group 4
Summary ( 0 – 100 )	n.s.	1.86 *	2.87 *	4.80 *
Total fruit ( 0 - 5 )	n.s.	0.18 **	0.37 *	0.68 *
Whole fruit ( 0 – 5 )	n.s.	0.34 *	0.59 *	1.30 *
Total vegetables ( 0 – 5 )	n.s.	n.s.	0.16 **	0.30 *
Dark green & orange vegetables, legumes ( 0 – 5 )	n.s.	n.s.	n.s.	0.49 *
Total grains ( 0 – 5 )	n.s.	n.s.	n.s.	0.21 *
Whole grains ( 0 – 5 )	0.17 **	0.44 *	0.67 *	0.60 *
Milk ( 0 – 10 )	n.s.	0.31 *	0.46 *	0.36 **
Meat and beans ( 0 – 10 )	n.s.	- 0.24 **	n.s.	n.s.
Oils ( 0 – 10 )	n.s.	n.s.	n.s.	n.s.
Saturated fat ( 0 – 10 )	n.s.	0.33 *	0.60 *	0.70 *
Sodium ( 0 – 10 )	n.s.	n.s.	n.s.	- 0.60 *
SoFAAS ( 0 – 20 )	n.s.	0.91 *	1.67 *	2.61 *

\*  $\alpha < 0.001$ , \*\*  $\alpha < 0.05$ , \*\*\*  $\alpha < 0.10$

## DATA AND METHODOLOGY

### Data

-- 2003-2004 National Health and Nutrition Examination Survey (NHANES) by the Centers for Disease Control and Prevention

-- Study sample (N = 4,199): Respondents who were 20+ years old, were not pregnant, and reported two 24-hour and reliable dietary intakes

-- **Group of weight control strategies:**

0 = Did not report trying to lose weight or to not gain weight in the past year (“non-controllers”)

1 = “Controllers” who used at least one method other than the three recommended methods (less fat, fewer calories, and exercise)

2 = “Controllers” who used one of the three recommended methods

3 = “Controllers” who used two of the three recommended methods

4 = “Controllers” who used all three of the recommended methods (less fat, fewer calories, and exercise)

-- **Measures of dietary quality:** USDA’s Healthy Eating group (HEI) – 2005 (USDA 2009)

-- summary score of 12 components (0 to 100)

-- each of 12 component scores (ranges vary from 0 to 5, 10, or 20)

### Econometric Models

Weighted LS regression of summary HEI, weighted two-limit Tobit regression of each component HEIs

Controlled for demographics, life styles, other dietary behaviors, body weight perceptions

## CONCLUSIONS

-- Hypothesis 1 is not rejected mostly; HEI of those who used one or more weight control methods that were not one of the recommended methods was not different from those who did not try to lose weight or to not gain weight

-- Hypothesis 2 is not rejected; the more recommended strategies a “controller” use, the higher his/her HEI is

-- These exploratory results are encouraging; yet, more detailed research needed to understand the complex relationships between weight control methods and dietary quality

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