

# Disconnect between Healthy Attitudes and Behaviors for Type 2 Diabetes Patients

Debra D. Bazata, RD, MA, CDE,<sup>1</sup> and Andrew J. Green, MD<sup>2</sup> for the SHIELD Study Group  
<sup>1</sup>St. Luke's South Primary Care, Overland Park, KS; <sup>2</sup>Midwestern Endocrinology, Overland Park, KS

## BACKGROUND

- The number of Americans diagnosed with diabetes more than doubled from 1980 to 2005<sup>1</sup> (5.8 million to 13 million people)
- An estimated 97 million US adults are overweight or obese, and approximately 75% have minimal physical activity,<sup>2</sup> which may lead to diabetes since obesity and physical inactivity are the main non-genetic determinants of the disease<sup>3</sup>
- Several large studies have demonstrated the benefits of lifestyle modification programs on the prevention or delay of diabetes and its complications<sup>3-5</sup>
- However, it is unclear if patients with the appropriate knowledge and healthy attitudes translate this information into healthy behaviors
- Little is known about current patterns of diet, exercise and health-related behaviors and attitudes of the US population diagnosed with diabetes or at risk for developing diabetes

## OBJECTIVE

- Determine if there is a gap between the knowledge of T2D respondents, their attitudes and behavior toward diabetes and its management

## METHODS

### Study Design

- Cross-sectional analysis of health knowledge, attitudes and behaviors among SHIELD respondents with T2D
- SHIELD is a 5-year longitudinal population-based survey conducted to better understand the burden of illness of people living with diabetes and those at risk for its development

### Study Population

- Respondents were 18 years of age or older who reported a diagnosis of T2D

## METHODS (Continued)

### KNOWLEDGE, ATTITUDES and BEHAVIORS ASSESSMENT

Respondents answered the following survey questions to assess their attitudes and behaviors toward diabetes

Knowledge Questions	Attitude Questions	Health Behaviors
In the past 12 months, has a health professional recommended that you increase the amount that you exercise?	Type 2 diabetes is not as serious as type 1 diabetes.	What is the total number of visits to all health professionals that you had in the past 12 months?
Has a health professional recommended in the past 12 months that you change what you eat or reduce the amount you eat?	Obesity can aggravate or contribute to onset of chronic diseases.	Currently exercise regularly in last 6 months.
	I prefer taking medications for my health problems rather than changing my lifestyle (such as exercising more or changing what I eat).	Currently do not exercise.
	Are you seriously considering trying to lose weight to reach your goal in the next 6 months?	Did vigorous physical activity during the last 7 days.
	Do you try to make healthy food choices about what you eat?	Did moderate physical activity during the last 7 days.
		Follow an eating plan prescribed by a physician, nutritionist or dietician
		During the last 12 months, have you tried to lose weight?
		During the last 12 months, have you done anything to keep from gaining weight?
		Have you maintained your desired weight for more than 6 months?

### Statistical Analysis

- The proportion of T2D respondents answering each knowledge, attitude and behavior question was reported
- Proportion of T2D respondents with knowledge of healthy behaviors and those with healthy attitudes and behaviors were computed

## RESULTS

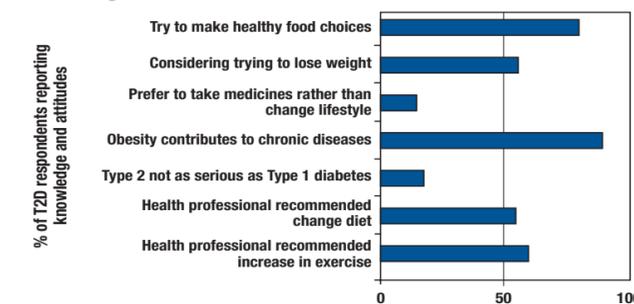
- Total of 3867 T2D respondents provided information on their knowledge, attitudes and behaviors

Table 1. Baseline characteristics of SHIELD T2D respondents

Characteristics	T2D (N=3867)
Age, years, mean (SD)	60.2 (13.1)
Women, %	58
Race, % white	85
Education, % with some college or higher	64
Income, % ≥\$40,000/year	47
Geographic region, %	
Northeast	20
North central	24
South Atlantic	21
South central	17
Mountain	6
Pacific	12
BMI ≥ 30 kg/m <sup>2</sup> , % obese	62

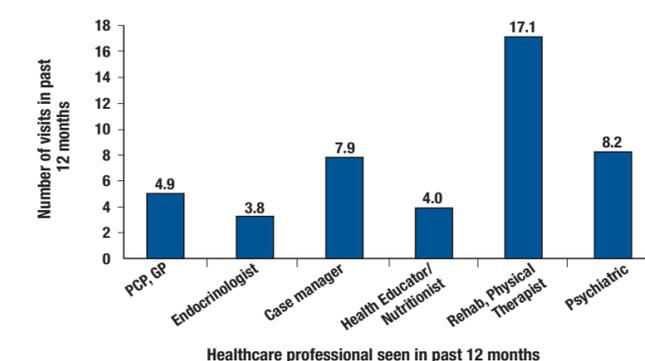
- A large proportion of the T2D respondents were women and white
- Average age was 60 years, and 64% had at least some college education

Figure 1. Proportion of T2D respondents reporting health knowledge and attitudes



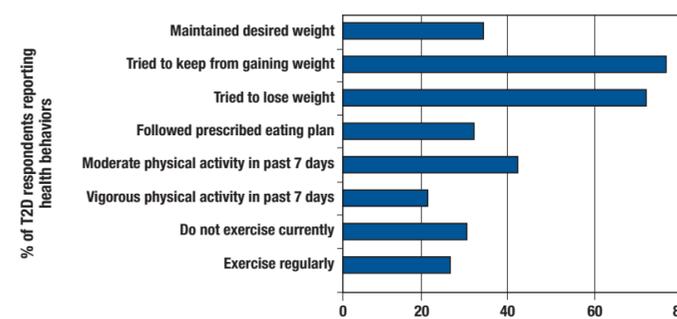
- SHIELD T2D respondents were very likely to receive recommendations to change their lifestyle habits
  - 56% advised to change diet
  - 63% advised to exercise more
- Majority of respondents had healthy attitudes
  - 87% agreed that obesity aggravates or contributes to the onset of chronic conditions
  - 78% try to make healthy food choices
  - Only 17% agreed that they prefer to take medications rather than change their lifestyle
- Most respondents were knowledgeable about diabetes, with only 22% agreeing that T2D was not as serious as type 1 diabetes

Figure 2. Mean number of healthcare professional visits in past 12 months for T2D respondents



- Respondents did seek care from multiple healthcare professionals
  - Average of 11 visits in past year
  - 3-4 visits per year to endocrinologist
  - 4 visits per year to nutritionist/dietician/health educator

Figure 3. Proportion of T2D respondents reporting health behaviors



- Majority of respondents did not translate the knowledge and healthy attitudes into healthy behaviors
  - Only 26% exercise regularly and 21% performed vigorous activity in the past 7 days
  - 33% followed a prescribed eating plan
  - 70% tried to lose weight, but only 34% actually maintained desired weight

## LIMITATIONS

- Household panels, included in the SHIELD study, may be under-representative of the very wealthy and very poor segments of the US population and do not include military or institutionalized individuals

## SUMMARY/CONCLUSIONS

- A large percent of T2D respondents reported making efforts toward healthier lifestyle with regard to diet, exercise and weight loss
- Small proportion of T2D respondents actually reported observable healthy behaviors (eg, regular exercise, prescribed eating plan or weight maintenance)
- The majority of respondents disagreed with taking medications rather than changing their lifestyle, but only a minority of them (26%-34%) were exercising regularly and following a prescribed eating plan
- SHIELD findings showed that respondents know and understand that improving diet or increasing exercise will affect their health, but the majority have not translated this knowledge and understanding into healthy behavior
- Increased access to a registered dietician and/or certified diabetes educator may improve the transition to healthy behavior
- Based upon the gap between attitudes and behavior among respondents, physicians and other healthcare professionals should negotiate with their patients in setting weight, exercise, and medication goals with specified timelines

## Abbreviations

Abbreviation	Definition
SHIELD	Study to Help Improve Early evaluation and management of risk factors Leading to Diabetes
T2D	Type 2 diabetes mellitus

## References

- Senemari B. Caring 2005;24:6-12
- US Department of Health & Human Services 1996
- Tuomilehto J, et al. N Engl J Med 2001;344:1343-50
- Pan XR, et al. Diabetes Care 1997;20:537-44
- Knowler WC, et al. N Engl J Med 2002;346:393-403