

## AN EPIDEMIOLOGY PUBLICATION OF THE OREGON DEPARTMENT OF HUMAN SERVICES

### PERCEIVED RISK OF DEVELOPING DIABETES AMONG HIGH-RISK OREGONIANS: WHAT YOU DON'T KNOW CAN HURT YOU

**D**IABETES PREVALENCE is growing all too quickly, both in Oregon and in the United States. Nationally, the frequency of diabetes among adults has increased almost 60% during the past decade, from 3.2 to 5.1%. In Oregon, things are moving even faster, with diabetes rates increasing from 4% in 1995 to 6.5% in 2004. Given its potentially devastating complications, (end-stage renal disease, lower limb amputation, blindness, and cardiovascular disease, to name a few<sup>1</sup>) you might think that people at risk would sit up and take notice. Interestingly enough, this isn't always the case.

In this issue of the *CD Summary*, we examine how worried Oregonians at highest risk of diabetes actually are about their chances of developing the disease. We'll also look at the frequency with which they discuss these concerns with their health care providers, and review some implications of these findings for clinical practice.

The information in this issue comes from questions on the 2003 Behavioral Risk Factor Surveillance Survey (BRFSS). Specifically, the questions addressed whether Oregon adults at highest risk for diabetes 1) believed that they were at risk for developing diabetes in the future, 2) had talked with a health care professional about diabetes, and 3) had been tested for the disease.

#### WHO'S AT RISK?

Risk factors for developing diabetes include older age, obesity, family history of diabetes, prior history of gestational dia-

betes, history of bearing an infant weighing nine pounds or more at birth, physical inactivity, and pre-diabetes, a condition in which blood glucose levels are elevated, although not enough to meet the diagnostic criteria for diabetes. The pre-diabetes category includes the people with either impaired fasting glucose (fasting plasma glucose >100 mg/dl but <126mg/dl) or impaired glucose tolerance (blood glucose >140 mg/dl but <199 mg/dl after a two-hour glucose tolerance test). In addition, type 2 diabetes is more common among African Americans, Latinos, American Indians, Pacific Islanders, and some Asian Americans than it is among non-Hispanic whites.<sup>2</sup>

Recently there has been growing recognition of populations at particularly high risk for developing pre-diabetes as well (see *CD Summary*, Dec. 2, 2003). People who are both overweight (body mass index [BMI]  $\geq 25.0$  kg/m<sup>2</sup>) and aged  $\geq 45$  years fall in this category.<sup>3</sup> In fact, it's estimated that almost one-fourth of overweight adults aged 45 to 74 years – 12 million people nationwide – have pre-diabetes.<sup>4</sup> Based on this estimate and on data from the Oregon BRFSS, as many as 152,000 people in Oregon who are  $\geq 45$  years and are overweight may have pre-diabetes. While pre-diabetes clearly ups the ante in the diabetes risk department (in the Finnish Diabetes Prevention study, 43% of a control group with pre-diabetes had developed overt disease within 6 years<sup>5</sup>), this progression is by no means inevitable. Two large studies

demonstrated that progression to type 2 diabetes can be reduced by almost 60% with modest (4-5kg) weight loss and as little as 30 minutes of moderate exercise, five days a week.<sup>5,6</sup> This evidence that diabetes can be forestalled or prevented makes it well worth knowing if an individual patient has pre-diabetes or not. The proven efficacy of medical management in decreasing diabetes complications is a strong argument for early diagnosis of overt diabetes.

Do Oregonians at high risk for diabetes or pre-diabetes *recognize* that they're at risk? Not as often as you might think. . .

#### OREGONIAN'S PERCEPTIONS OF DIABETES RISK

Data reveal a large gap between Oregonians' *perceived* risk for developing diabetes and their *actual* risk of getting it. Although respondents with more risk factors (i.e., those with three or four risk factors) tended to be more aware of their risk for diabetes than those with fewer risk factors, even in the highest risk group (those with three or four of the above risk factors), less than one-third (31%) reported being concerned about developing diabetes in the next ten years. Further, only one-fifth (21%) reported discussing their risk with a health professional in the past year. Respondents who were overweight and aged  $\geq 45$  years (a group at particularly high risk of developing pre-diabetes) were no more likely to be concerned about their risk for diabetes (10% expressed such concern) than other respondents (15%). This high-risk group was also no more



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likely to have reported discussing diabetes risk with a health care provider; only about 10% in each group had done so. Other studies in the general population also suggest that individuals tend to underestimate their risk for developing diabetes.<sup>7</sup> It's possible that some people in these high-risk categories had recently been screened for diabetes or glucose intolerance, had normal results, and felt less concern about their risk of diabetes on that basis. Overall, though, in our survey, only 35% of people who were aged  $\geq 45$  and overweight reported having any kind of "test for diabetes" in the past year. (The survey did not specify the kinds of tests that qualified, so this might have been a fasting glucose, but could as easily have been a urine glucose dipstick.) In any case,

many Oregonians at risk don't feel that they're at risk, even in the absence of reassuring test results.

**TAKE-HOME MESSAGE FOR CLINICIANS**

Bottom line: If you can recognize a patient with diabetes at an early stage, you can help that patient by developing a medical management plan with them that will prevent or forestall complications. If you identify patients with pre-diabetes, you can give them straightforward advice on physical activity and weight management that can forestall or even prevent diabetes. The first step in diagnosing these conditions is to recognize who is at higher risk for them. Consider discussion of diabetes risk (and possibly testing for glyce-mic control with a fasting plasma glucose) in patients who:

- Have a body mass index  $\geq 25\text{kg}/\text{m}^2$ , particularly if they are age 45 and older,
- Have a positive family history for diabetes, and
- Are physically inactive.

The need to be more physically active, eat more healthfully, and lose weight are sensitive topics for many patients. Shame and stigma associated with obesity are likely to hamper patients' ability to address their problems in these areas.

If you're looking for an effective way to start the conversation about diabetes risk and how to address it, the Oregon Diabetes Program has a publication that might be helpful for you and your patients. It's called "Small Steps, Big Rewards", and it contains helpful materials that walk through, step by step, how patients can make lifestyle changes to decrease their risk of diabetes. For copies of these materials, contact Carrie Washburn of the Oregon Diabetes Program at 971-673-0984.

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Number of risk factors for developing diabetes and worry about developing diabetes in next 10 years among Oregonians without diabetes, 2003 Behavioral Risk Factor Surveillance System		
# of Risk Factors	% of Sample with this # Risk Factors	Worried About Developing Diabetes in Next 10 Years
0 risk factors	32%	8%
1 risk factor	38%	12%
2 risk factors	22%	22%
3 or 4 risk factors	8%	31%

Risk factors include: ages 45 years and older, obesity (BMI  $\geq 30.0\text{ kg}/\text{m}^2$ ), a family history of diabetes, and inactivity (less than 10 minutes of moderate-intensity physical activity during leisure time in a usual week). Respondents who reported they were "very" or "somewhat" worried.