

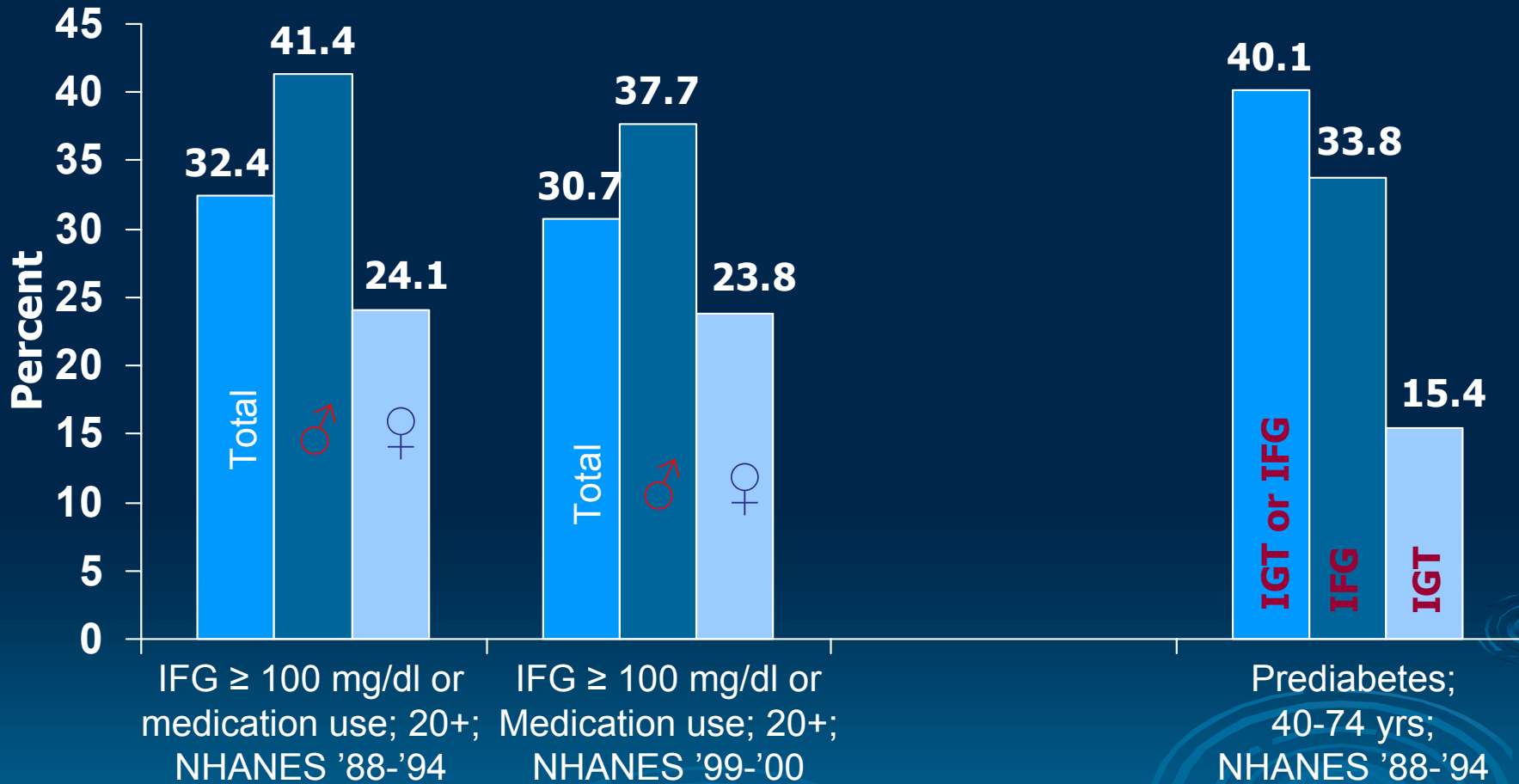
Diabetes Prevention BRFSS Measures

DPPI Surveillance Group
April 30th, 2007

Diabetes Prevention Indicators

- Prediabetes
- Risk factors for diabetes
- Individual level behavior change & exposures
- Environmental and Community factors

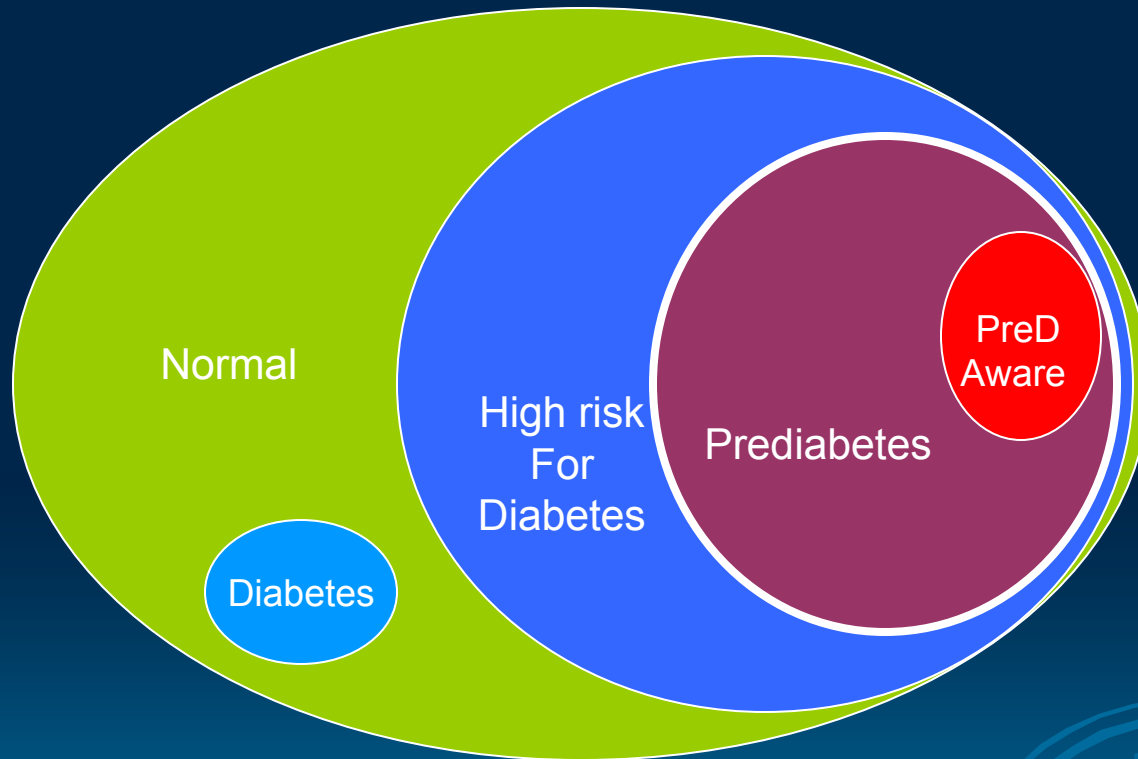
U.S. Prevalence of Prediabetes



(Ford et al, 2004)

(www.cdc.gov/diabetes)

Identifying Persons with Prediabetes or At Risk for Diabetes

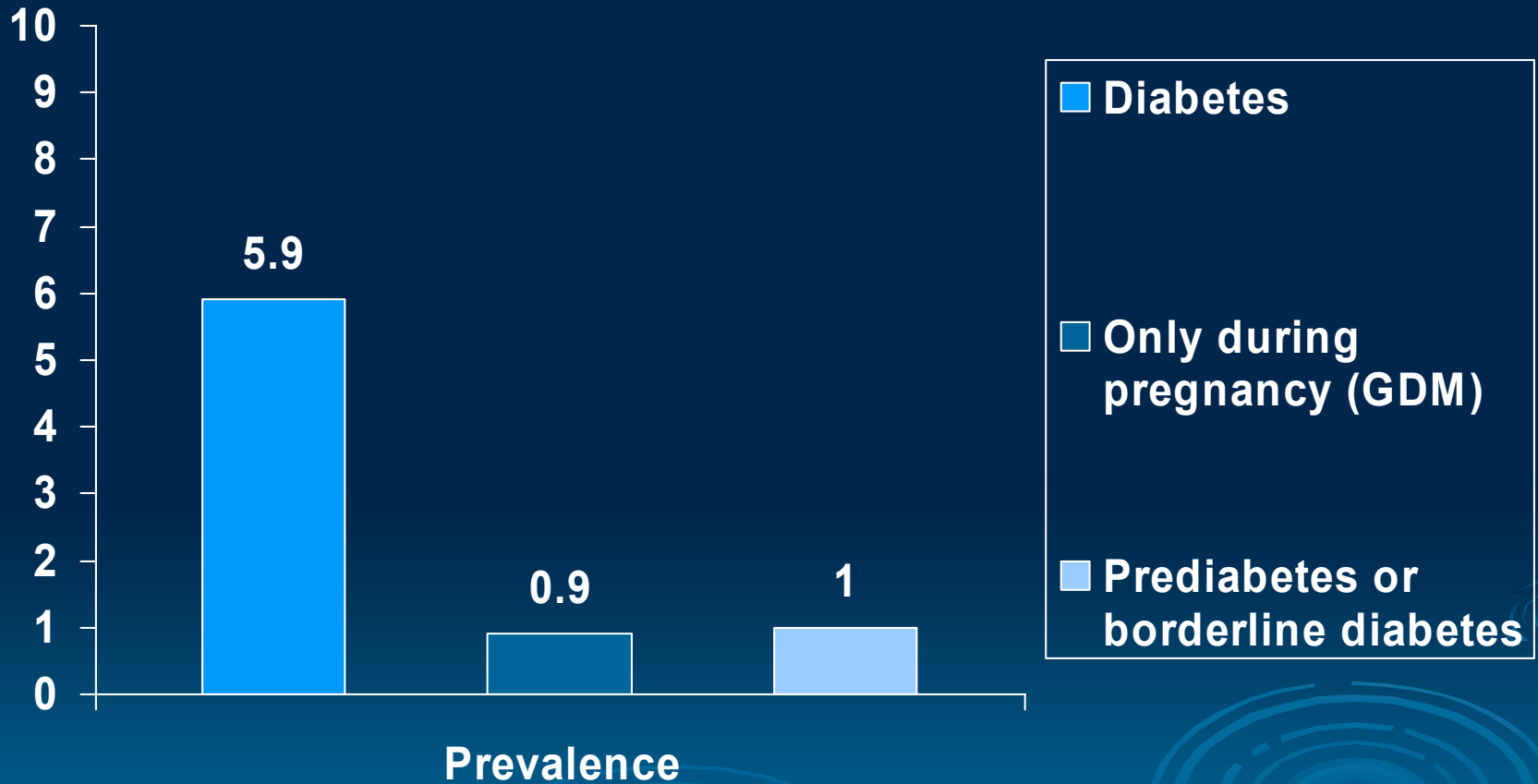


Core Diabetes Measure

Have you ever been told by a doctor that you have diabetes?

- 1 Yes
- 2 Yes, but female told only during pregnancy
- 3 No
- 4 No, prediabetes or borderline diabetes
- 7 Don't know/Not sure
- 9 Refused

Diabetes Status



BRFSS Pilot

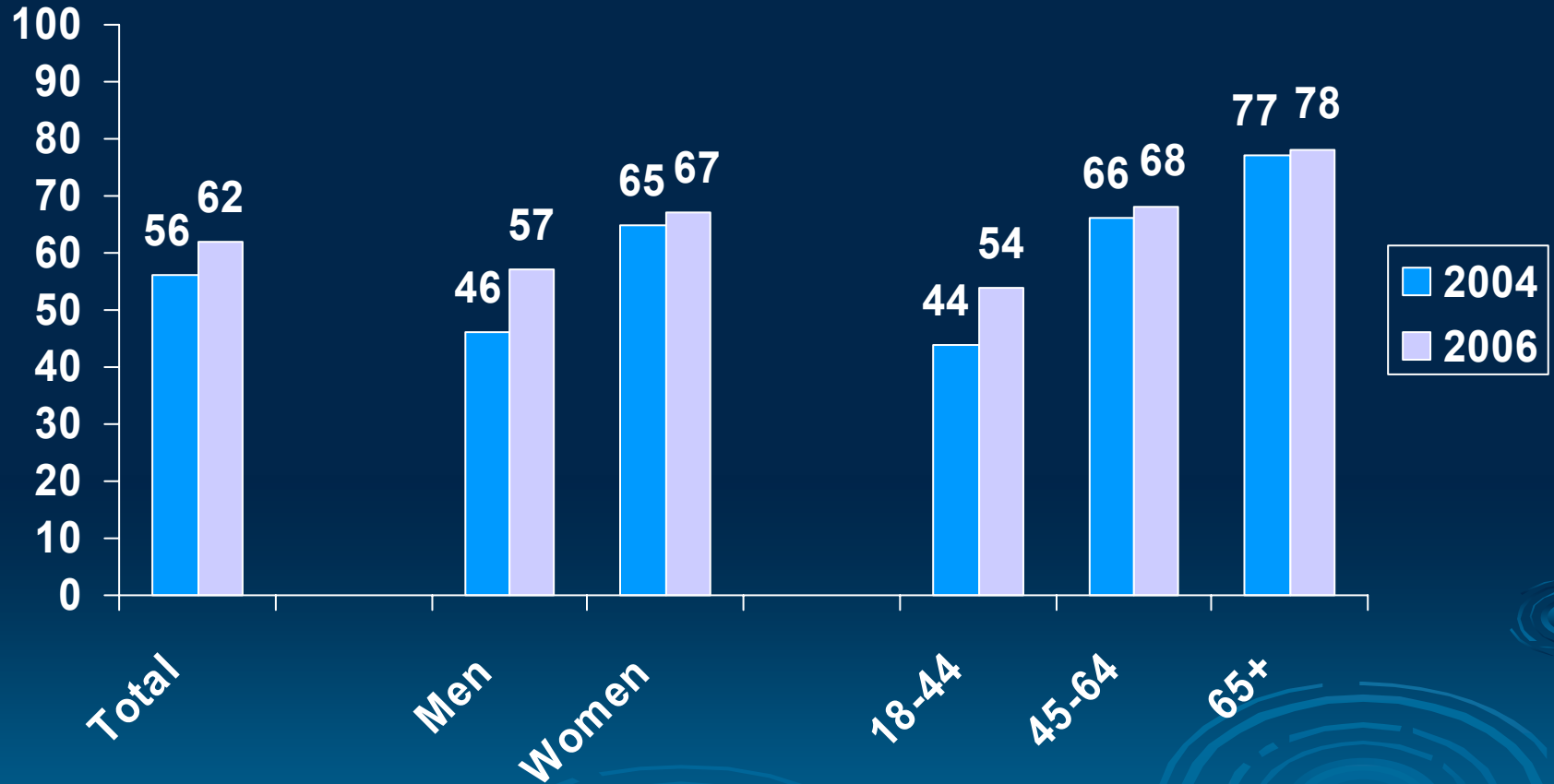
- Minnesota (April – December, 2006; n=3,800)
 - Blood glucose testing
 - Prediabetes awareness (2 measures)
 - Age first told of prediabetes/high blood glucose
 - First told in the last 12 months (incidence)
 - 1st degree family history
 - Waist circumference
 - Weight change in past 12 months (2 measures)
 - History of gestational diabetes (2 measures)

Blood Glucose Testing

Have you had a test for your blood sugar or glucose with the past three years?

- 1 Yes
- 2 No
- 7 Don't know/Not sure
- 9 Refused

Blood Glucose Testing: 2004 & 2006

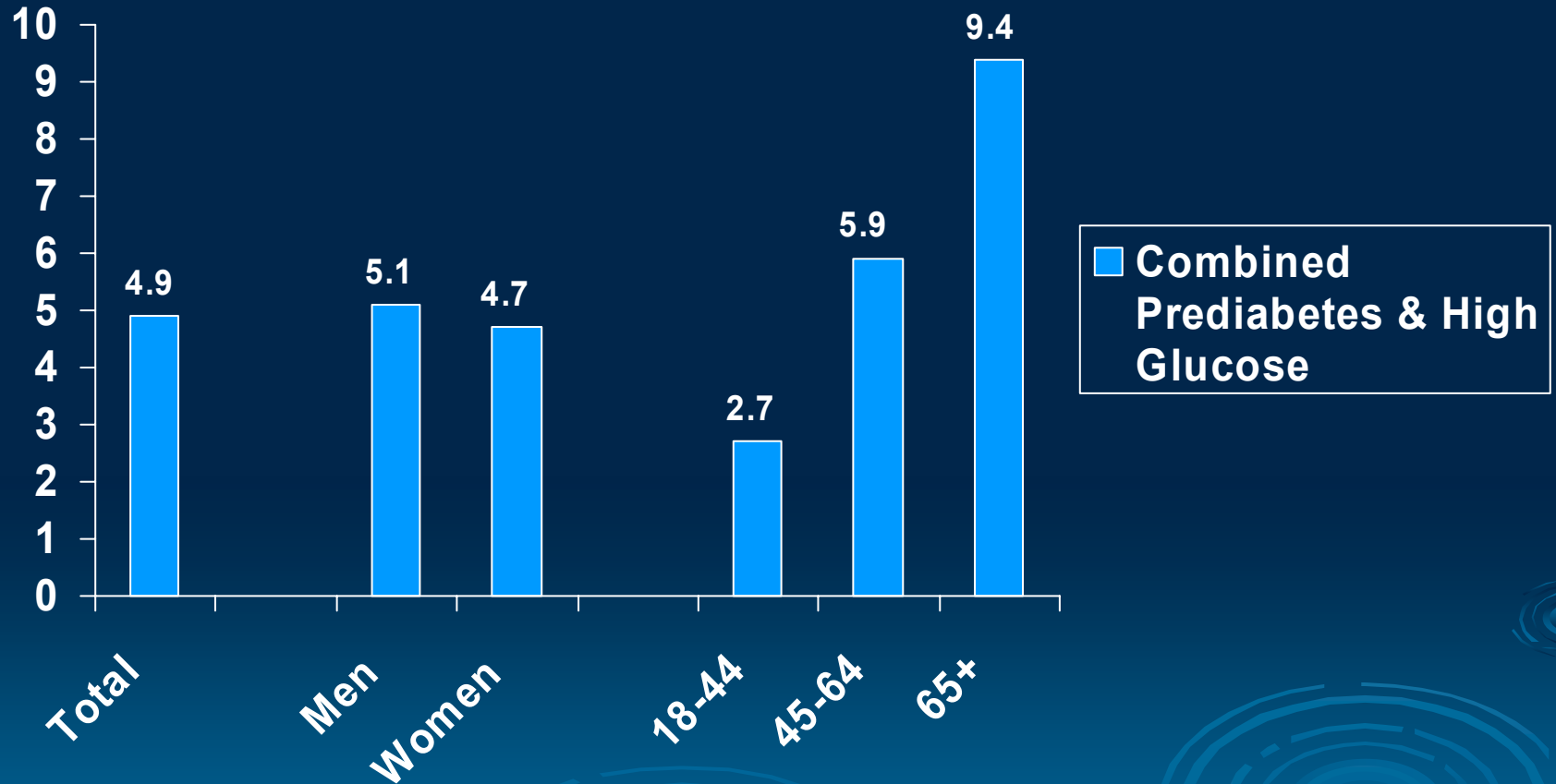


* Approximately 4% Don't Know/Not Sure

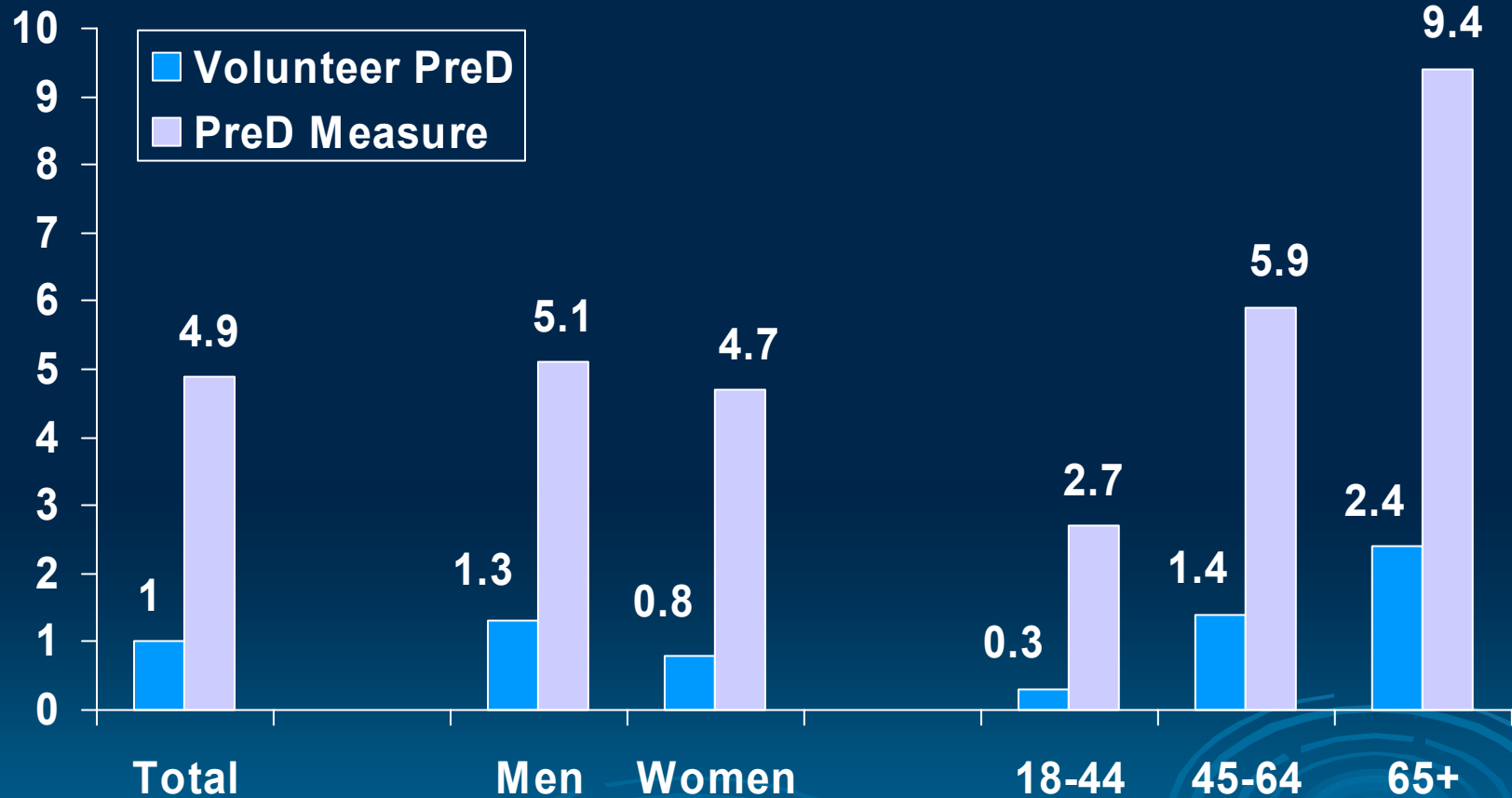
Pilot self-report measures of prediabetes awareness

- ‘Have you ever been told by a doctor that you have prediabetes or borderline diabetes?’
 - Excludes persons self-reporting diabetes
- ‘Have you ever been told by a doctor that you have high blood sugar or glucose?’
 - Asked if answer ‘No’ above
 - If female, asked ‘Was this only during pregnancy?’

Prediabetes, Borderline Diabetes or High Blood Sugar/Glucose



Prediabetes vs 'volunteered' prediabetes*



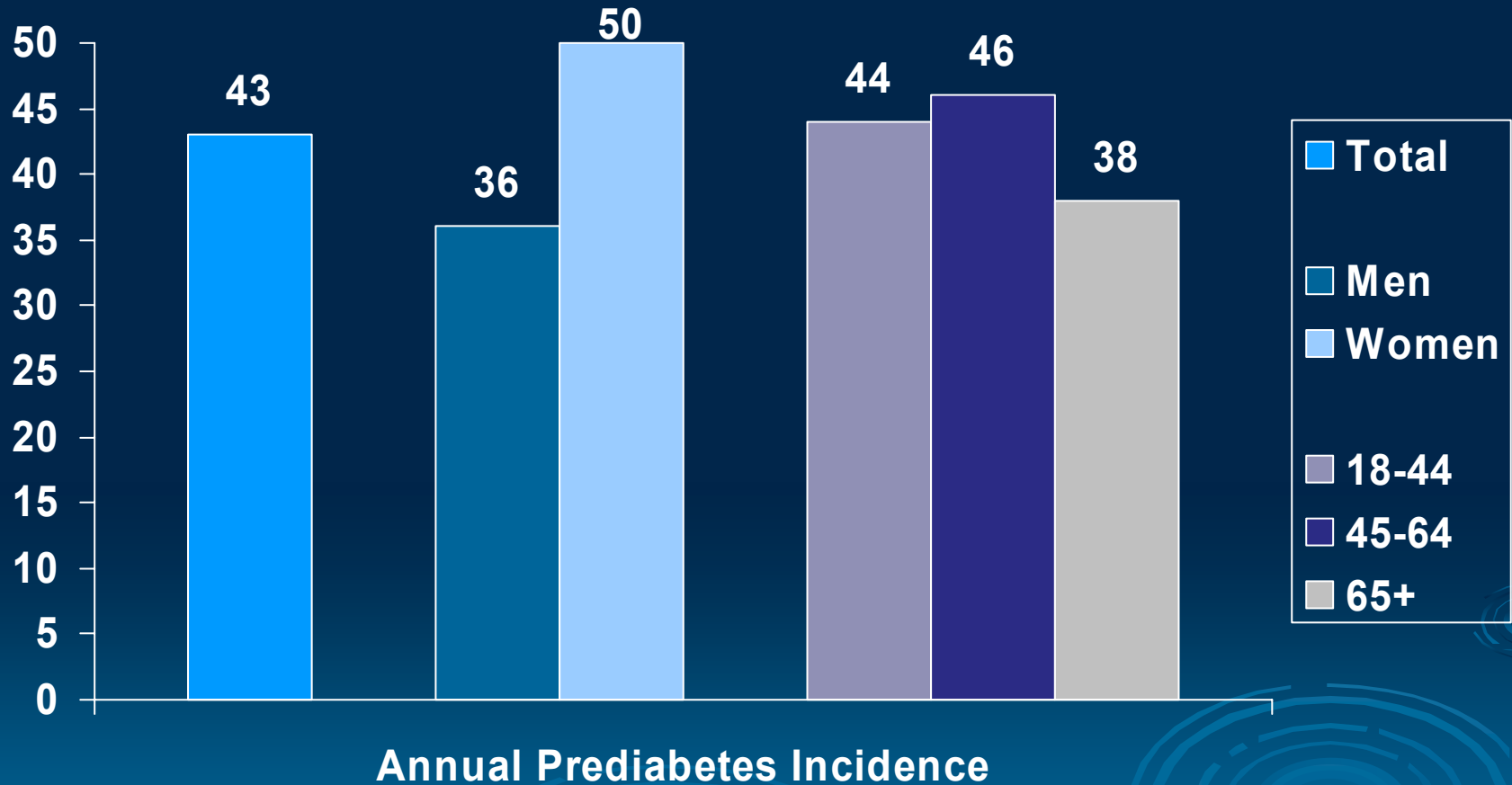
* Core BRFSS diabetes measure

Annual Prediabetes Incidence

Was it within the past 12 months that you were told for the first time that you have prediabetes, borderline diabetes, or high blood glucose?

- 1 Yes
- 2 No
- 7 Don't know/Not sure
- 9 Refused

Annual Incidence of Prediabetes (N=194)



Age 1st Told Prediabetes

How old were you when you were first told you had prediabetes, borderline diabetes, or high blood glucose?

- ___ Code Age in Years (97 = 97 years and older)
- 98 Don't know/Not sure
- 99 Refused

Duration of Prediabetes & Diabetes

Duration	Prediabetes(%)	Diabetes(%)
0 yr	19.6	2.5
1 yr	25.2	11.4
2 yrs	16.0	8.6
3 yrs	8.2	7.1
4 yrs	5.3	4.5
5+ yrs	25.7 (5-49)	65.7 (5-51)

Age 1st Told Prediabetes

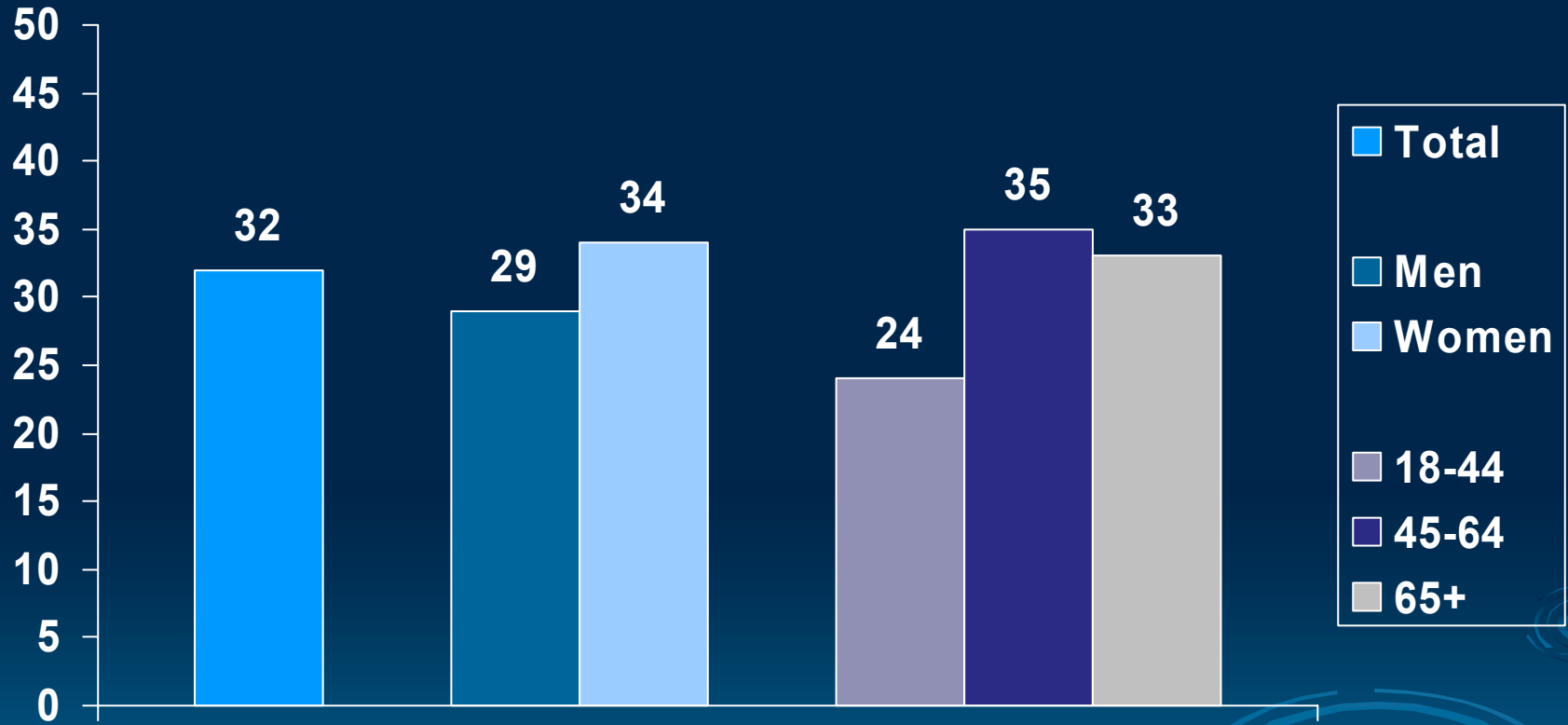
<u>Age 1st Told</u>	<u>Prediabetes</u>
<20	1.3
21-30	19.3
31-40	14.4
41-50	14.6
51-60	19.4
61-70	16.9
71-80	12.4
81+	1.5

1st Degree Family History of Diabetes

To your knowledge have any of your first degree blood relatives, such as parents, brothers, or sisters had diabetes?

- 1 Yes
- 2 No
- 7 Don't know/Not sure
- 9 Refused

1st Degree Family History of Diabetes



1st Degree Family History of Diabetes

* Approximately 1% 'Don't Know/Not Sure'

Waist Measurement

What is your waist measurement?

[Note: If respondent answers in metric put “9” in 1st column]

7777

Don't know/Not sure

9999

Refused

Waist Measurement Status: % Don't Know/Not Sure



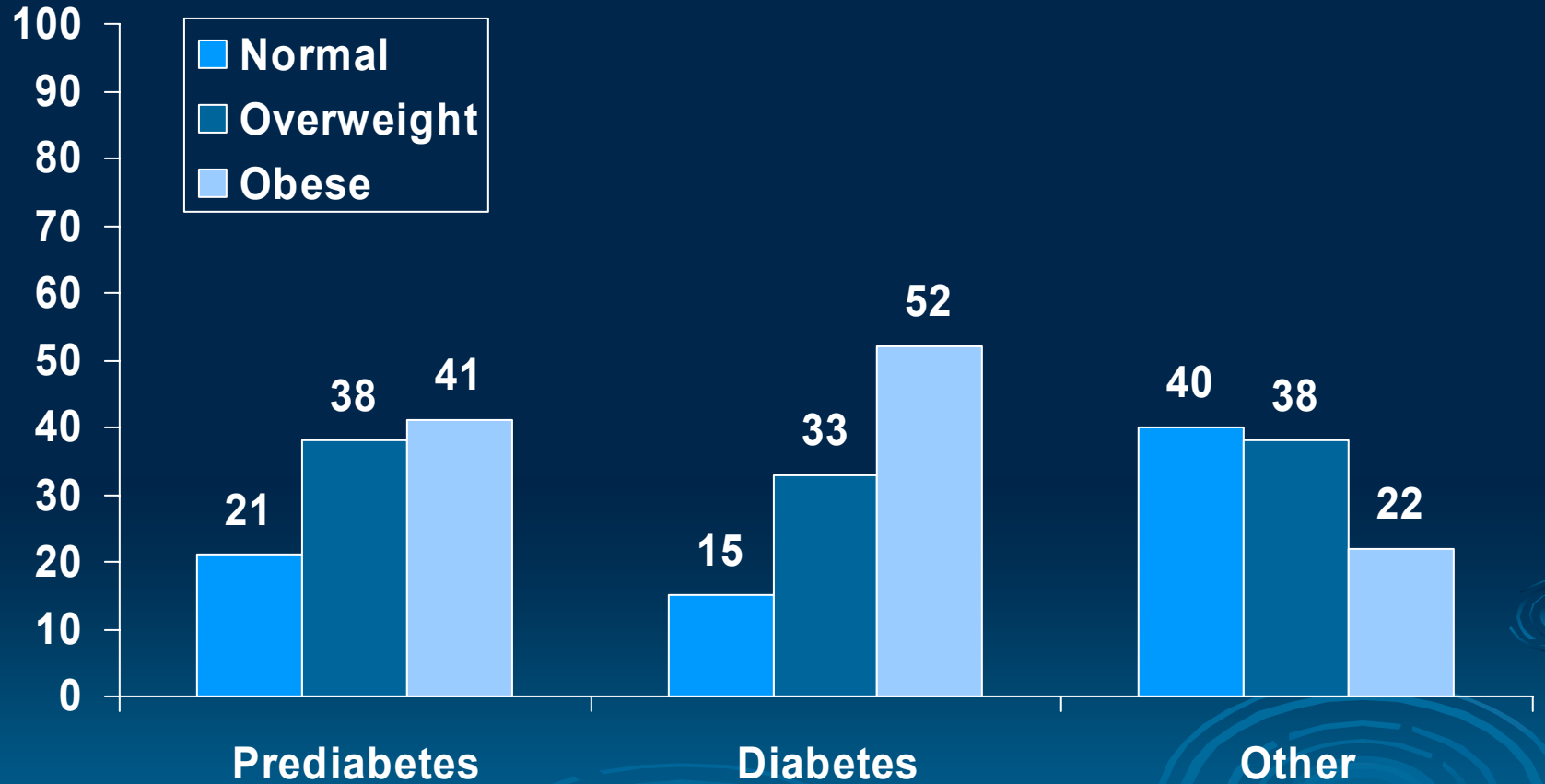
Weight Management

In the past 12 months, did you gain, lose, or maintain your current weight?

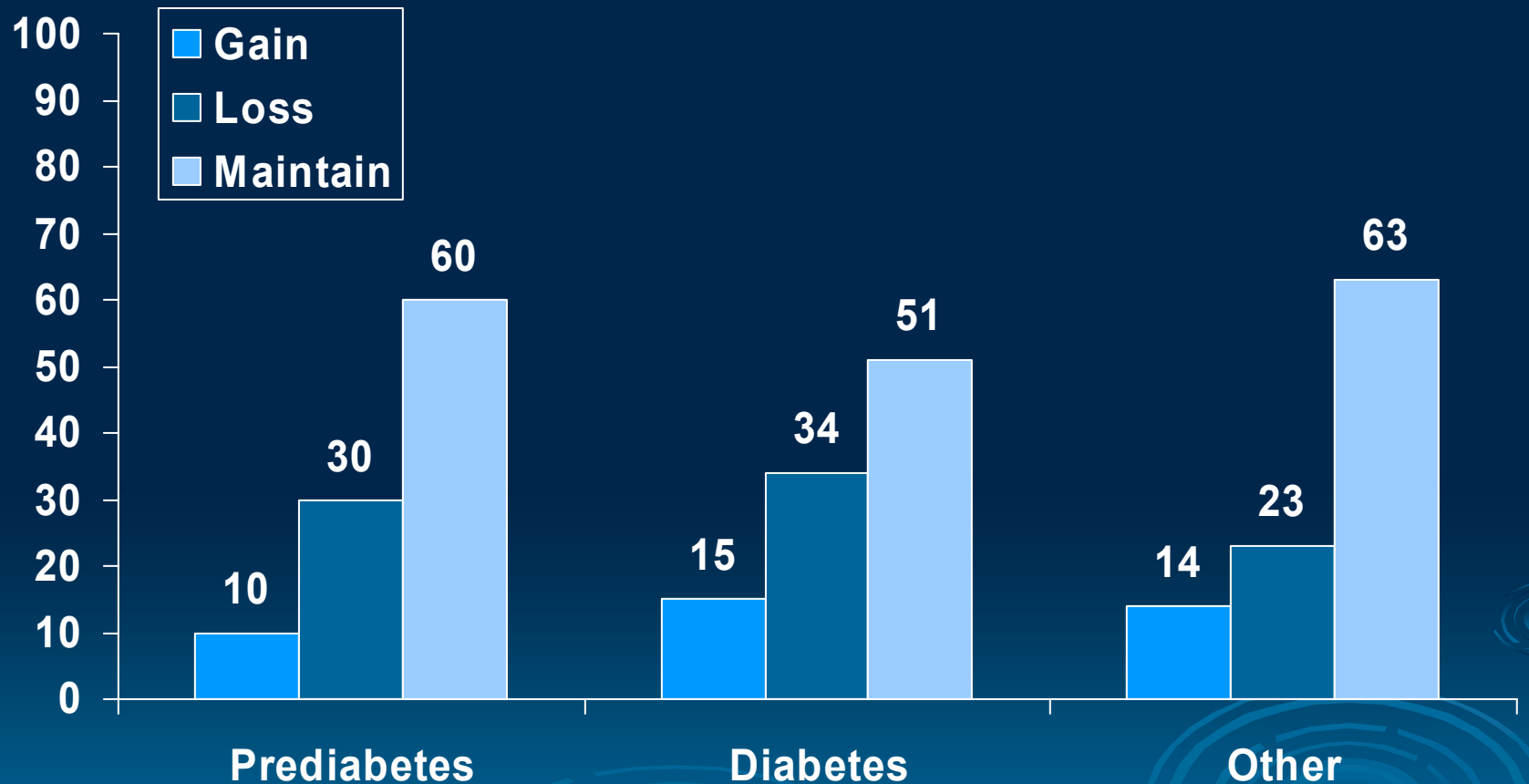
- 1 Gain weight
- 2 Lose weight
- 3 Maintain current weight

- 7 Don't know/Not sure
- 9 Refused

Weight status by diabetes status



Weight gain, loss, or maintain by diabetes status



Weight Management

In the past 12 months, how many pounds did you gain/lose?

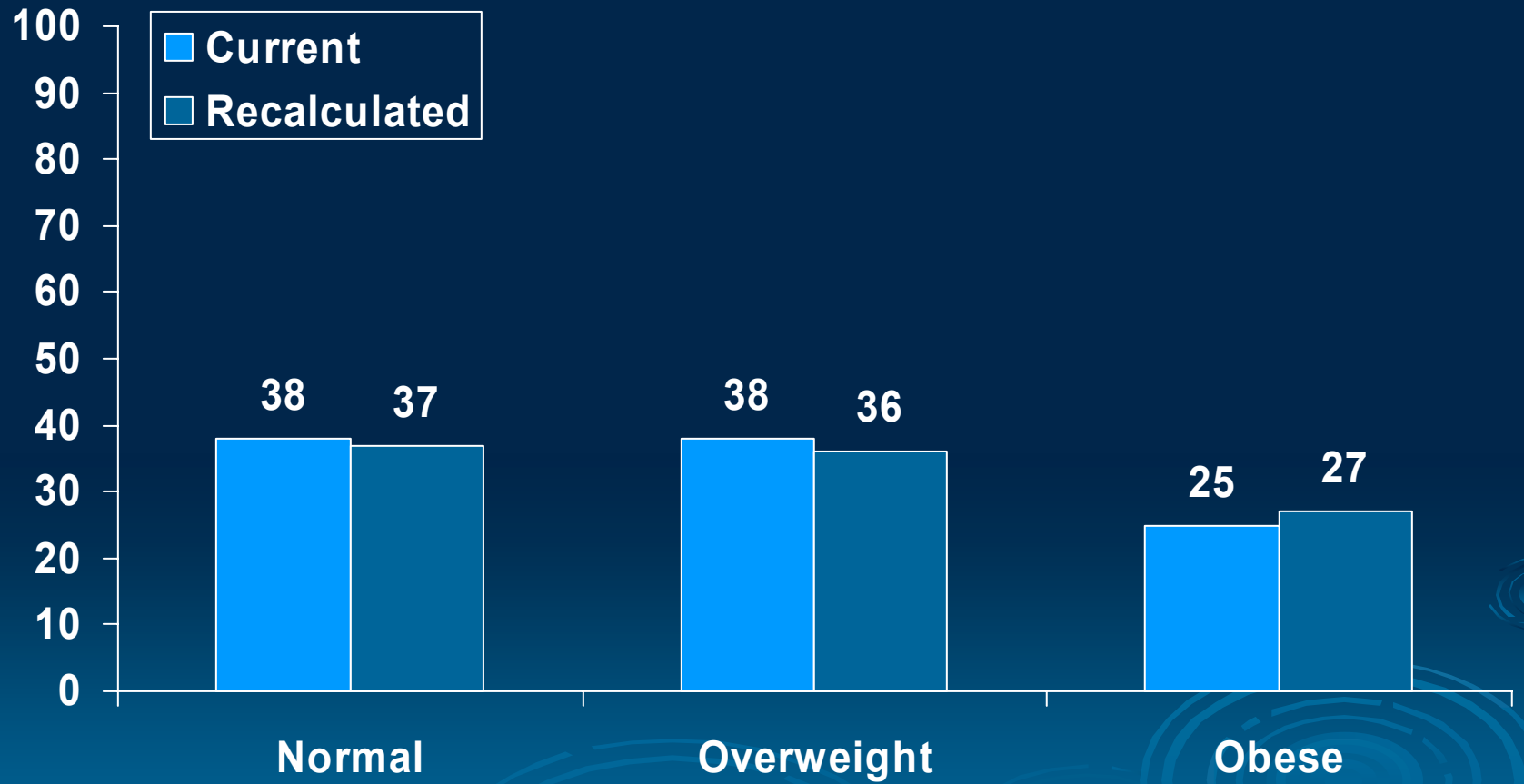
1___ pounds gained

2___ pounds lost

7777 Don't know/Not sure

9999 Refused

Weight status...recalculated



Ever Pregnant

Have you ever been pregnant?

- 1 Yes
- 2 No
- 9 Refused

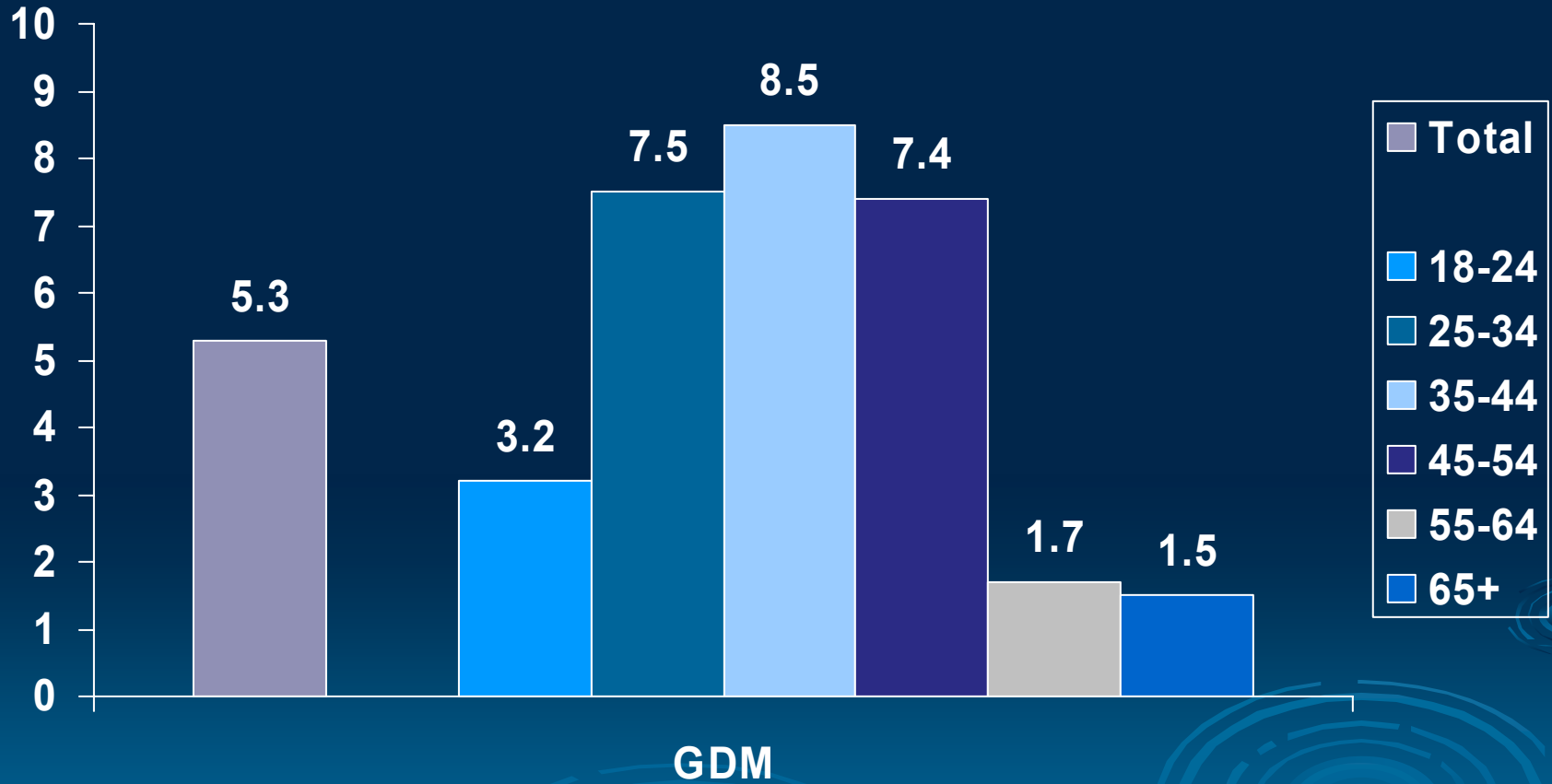
80% women report having been pregnant

Gestational Diabetes

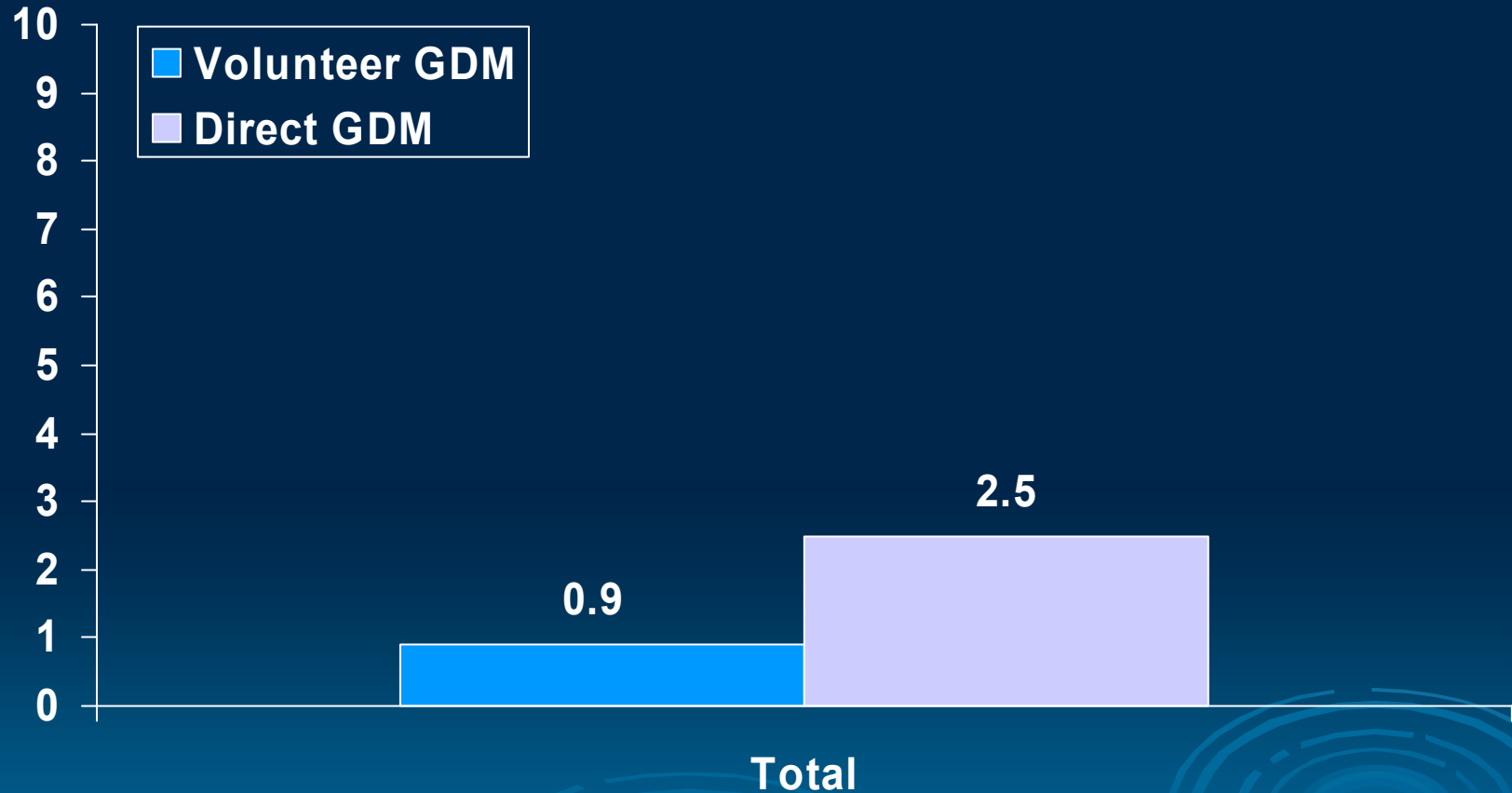
Have you ever been told by a doctor that you had gestational diabetes, that is, diabetes only during pregnancy?

- 1 Yes
- 2 No
- 7 Don't know/Not sure
- 9 Refused

Gestational Diabetes by Age



Direct Gestational Diabetes vs 'volunteered' Gestational Diabetes



* Core BRFSS diabetes measure

Conclusions about measures

- Measures have good face validity: % of don't know or missing is low (1-2%), discriminates across demographic characteristics.
- Need to assess prediabetes and history of gestational diabetes as separate measures from the Core diabetes measure.
- Waist circumference cannot be assessed by self-report in women.
- Separate measure to assess the incidence of prediabetes is useful.

Recommendations

- Glucose Testing (Core 2008?)
- Prediabetes Awareness (Core 2008?)

- Annual incidence or Age 1st told PreD
- 1st Degree Family History

- Weight management (Core 2007)
- Gestational Diabetes

Exposures: MN BRFSS 2007

- In the past 12 months have you increased your fruit and vegetable consumption?
- In the past 12 months have you increased your physical activity or exercise?
- During the past 12 months have you intentionally increased your walking activities?

Questions?

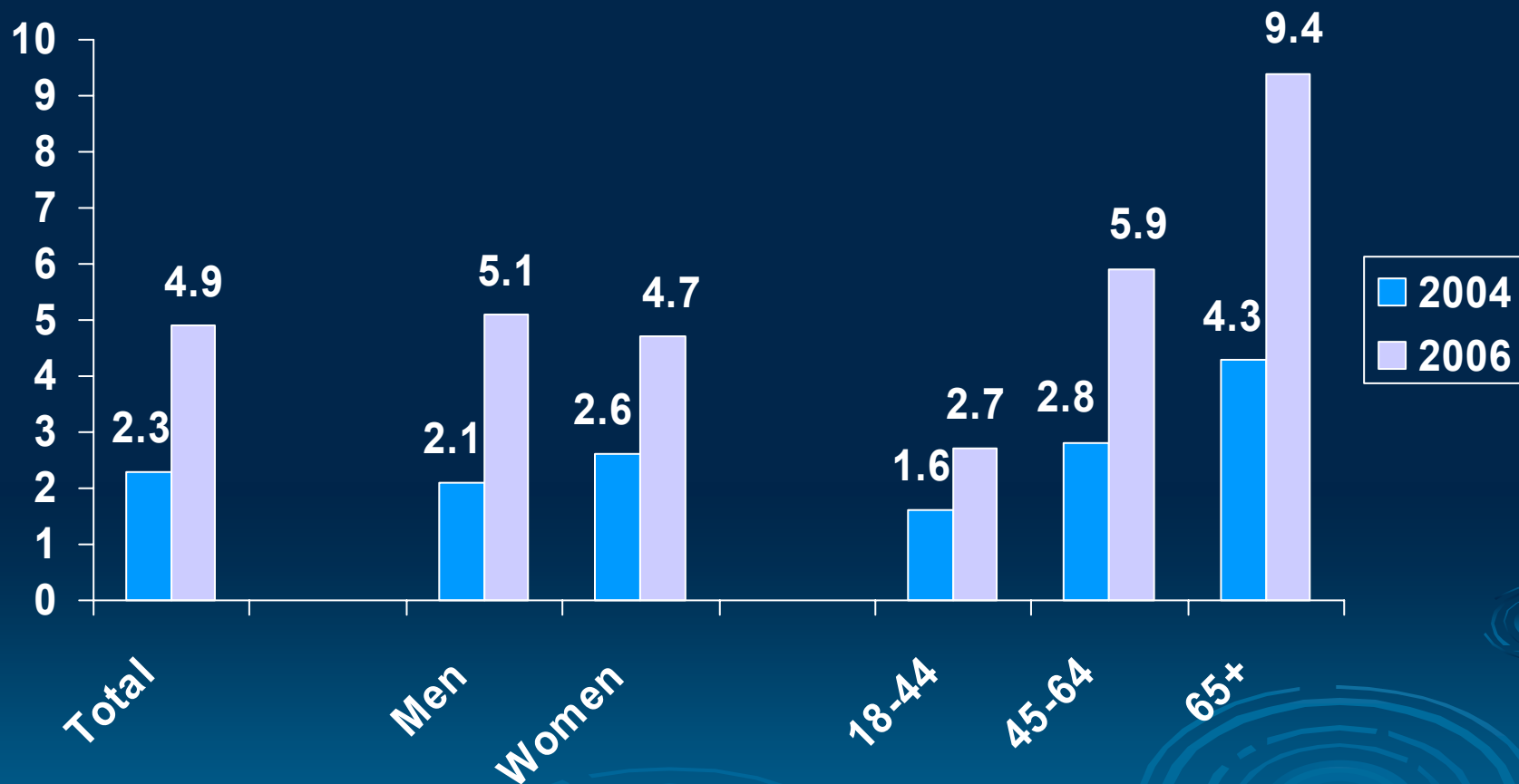
Nagi Salem, PhD

nagi.salem@health.state.mn.us

Jay Desai, MPH

jay.desai@health.state.mn.us

Prediabetes, Borderline Diabetes, or High Blood Glucose: 2004* & 2006



* 'Have you ever been told by a doctor that you have high blood sugar or glucose?'