

Prediabetes Prevalence and Risk Factors in Alabama, 2013

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CSTE

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Background

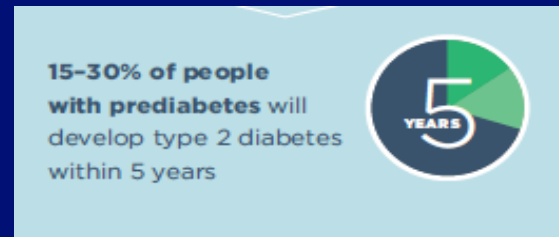
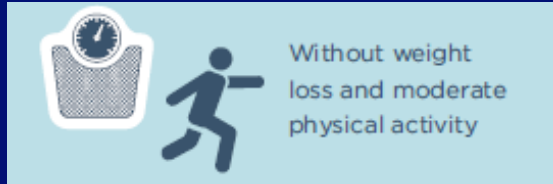
- **Prediabetes:**
 - Blood sugar (glucose) above normal levels
 - Below level for diagnosis of diabetes
- **86 million U.S. adults estimated to have prediabetes**
 - 37% of U.S. adults
 - Only 11% are **aware** of having prediabetes



* Centers for Disease Control and Prevention. National Diabetes Statistics Report: Estimates of Diabetes and Its Burden in the United States, 2014. Atlanta, GA: U.S. Department of Health and Human Services; 2014.

Consequences

- **Prediabetes increases risk for diabetes**



- Increases risk for heart disease and stroke



- **Diabetes: 7th leading cause of death**

- Causes heart disease, stroke, blindness, kidney failure, and lower leg amputations



* Centers for Disease Control and Prevention. National Diabetes Statistics Report: Estimates of Diabetes and Its Burden in the United States, 2014. Atlanta, GA: U.S. Department of Health and Human Services; 2014.

Risk Reduction

Early detection and treatment of prediabetes:

- **Lifestyle interventions prevent or delay progression to diabetes**
 - Overall 58% reduction in diabetes over 3 years
 - 71% reduction among persons aged ≥ 60 years
- **Reduces health complications**



- *1-2. Knowler WC, Barrett-Connor E, Fowler SE, et al. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *N Engl J Med.* 2002;346(6):393–403; and Knowler WC, Fowler SE, Hamman RF, et al. 10-year follow-up of diabetes incidence and weight loss in the Diabetes Prevention Program Outcomes Study. *Lancet.* 2009;374(9702):1677–86.
3. Lindstrom J, Louheranta A, Mannelin M, et al. The Finnish Diabetes Prevention Study (DPS): lifestyle intervention and 3-year results on diet and physical activity. *Diabetes Care.* 2003;26(12):3230–6.

Question

- What is the prevalence of prediabetes in Alabama?
- What are the characteristics related to having prediabetes?



Data Source

- **Behavioral Risk Factor Surveillance Survey (BRFSS)**
 - Nationwide annual telephone survey (cell phone and landline)
 - Collects self-reported health and health risk data
 - >100,000 U.S. participants
 - 6,500 in Alabama
 - Provides state-level estimates of disease conditions and health behaviors



2013 BRFSS Questionnaire

Prediabetes-related awareness:

“Has a doctor, nurse or other health professional EVER told you that you have diabetes?”

NO



YES



DIABETES

*“Have you ever been told by a doctor or other health professional that you have **prediabetes** or **borderline diabetes**?”*

NO



YES



No diabetes or
prediabetes

“Was this only when you were pregnant?”

NO



YES



PREDIABETES

Gestational only

Methods

- **Prediabetes analysis (n=5,060) excluded persons reporting:**
 - Known diabetes (1,209) or gestational diabetes (n=73)
 - Unknown or missing prediabetes status (n=161)
- **SAS 9.2 weighted analysis accounting for sampling design**
- **Calculated prevalence ratios for respondent characteristics**
- **Performed multivariable logistic regression for prediabetes risk factors**

Results

- **An estimated 8.5% Alabama adults report having prediabetes**
 - Approximately 316,000 Alabama adults aware of having prediabetes
- **Underestimate: most people with prediabetes don't know it to report it**
 - 1.3 – 2.9 million Alabama adults actually have prediabetes

Prediabetes Prevalence Ratio by Risk Factor

Risk Factor		% Prediabetes	PR	95% CI	P-value
Overall		8.5		7.5–9.6	
Age (years)	≥55	12.0	2.81	1.72—4.59	<0.001
	35–54	9.0	2.11	1.26—3.53	0.003
	18–34	4.3	Reference		
Sex	Female	9.3	1.21	0.94—1.57	0.14
	Male	7.7	Reference		
Race	Black	8.8	1.06	0.81—1.39	0.68
	White	8.3	Reference		
Body mass index	≥25	10.8	2.51	1.84–3.42	<0.001
	<25	4.3	Reference		
Physical activity guidelines	NOT met	9.1	1.79	1.24—2.59	0.001
	Met	5.1	Reference		
Income	<\$25,000	10.8	1.38	1.04—1.83	0.03
Education level	< High school	10.4	1.28	0.88—1.86	0.19

Multivariable Logistic Regression Model of Prediabetes by Risk Factors—Alabama, 2013

Factor	Adjusted Odds	95% CI	P-value
Age ≥ 55 years	3.4	2.01—5.87	<0.001
Female	1.3	0.96—1.68	0.097
Body mass index (BMI) ≥ 25	2.4	1.70—3.27	<0.001
Physical activity guidelines NOT met	1.5	1.02—2.30	0.038

•Income and education level $p > 0.20$ in multivariable model ($p = 0.24$ and 0.69 , respectively), and $< 15\%$ change in estimate, therefore dropped from final model



Modifiable Risk Factors for Prediabetes

- **Cannot** control your age
- **Can** reduce your weight
- **Can** improve your exercise habits



If you have prediabetes, losing weight by:

5%–7%

 **EATING HEALTHY** &  **BEING MORE ACTIVE**

can cut your risk of getting type 2 diabetes in **HALF**



Reducing Diabetes Risk

- **Even modest reduction in weight decreases diabetes risk**
 - 5%–7% weight loss
 - 10–14 pounds (for 200 lb person)
- **Recommended physical activity:**
 - 150 minutes per week of moderate to vigorous aerobic activity
 - Plus, muscle strengthening exercise twice per week
- **As little as 5-15 minutes per day has shown benefit**



How to Get There

- **USPSTF and Community Guide recommend lifestyle modification courses**
- **Multicomponent services: dietician, nutritionist, exercise trainer, behavioral counselor, health educator, trained layperson**
- **Particularly successful if regular contact with a health mentor**



- ✓ eat healthy
- ✓ be more active
- ✓ lose weight

JOIN A CDC-
RECOGNIZED
diabetes
prevention
program



National Diabetes Prevention Program

- **Collaborative effort hosted at CDC**
- **Standard curriculum**
 - Based on behavior change principles
- **Cost effective intervention**
- **Covered by some healthcare insurers or employers**
- **Lifestyle Coach training available**
- **Recognition program to certify organizations**

More information:

www.cdc.gov/diabetes/prevention

Summary

- Many Alabama adults not aware of prediabetes status
- Risk factors for prediabetes include being overweight and lack of physical activity
- Progression to diabetes reduced with lifestyle changes
 - Modest weight loss and physical activity are key
 - Lifestyle change programs (such as NDPP) proven effective and should be encouraged for persons with prediabetes



Thank you!

Acknowledgements:

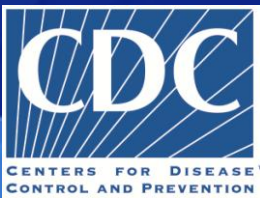
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The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.



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