An Overview of Chronic Diseases in Alabama

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November 18, 2016

BUREAU OF HEALTH PROMOTION AND CHRONIC DISEASE
Outline

• Public Health Issues and Minority Populations
• Social Ecological Model
• Overview of Chronic Diseases in the U.S and Alabama
  – Cardiovascular Diseases
  – Diabetes
  – Obesity
• Risk Factors and Consequences
• Cost
• Prevention/Management
The Public Health Issues

- **Heart disease, cancer, diabetes, and stroke** are among the most common causes of illness, disability, and death in the U.S.

- **Obesity**
  - More than one-third of adults
  - 12.7 million of children and adolescents
Minority Populations

• Non-Hispanic blacks are 40% more likely to have high blood pressure.

• Diabetes is:
  – 77% higher among non-Hispanic blacks
  – 66% higher among some Hispanics groups
  – 18% higher among Asians

• American Indians and Alaskan Natives are 60% more likely to be obese.

• Life expectancy for non-Hispanic blacks is 75.1 years.
Social Ecological Model

- **Individual**: Individual attitudes, beliefs, knowledge, and behaviors.
- **Interpersonal**: Individual relationships, support groups, social networks, cultural context.
- **Institutions and Organizations**: Schools, health care administration, businesses, faith based organizations, institutions.
- **Community**: Relationships and communications between organizations and institutions.
- **Structures and Systems**: Federal, state, and local regulations, laws, the built environment (public works, infrastructure, etc.).

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**BUREAU OF HEALTH PROMOTION AND CHRONIC DISEASE**
CARDIOVASCULAR DISEASES

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Heart Disease

- Leading cause of death in the U.S.
- Most Common
  - Coronary Heart Disease
  - Hypertension
- African Americans have a higher rate
  - Heart Attack
- 1 in 4 women will die within the 1st year

Stroke

- 5th leading cause of death for U.S. adults
- Leading cause of long-term disability
- One American dies from a stroke every 4 minutes.
- Common Symptoms of Heart Attack and Stroke
RISK FACTORS
## Risk Factors

<table>
<thead>
<tr>
<th>Medical Conditions</th>
<th>Modifiable Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>• High Blood Pressure (i.e. Silent Killer)</td>
<td>• Unhealthy Diet&lt;br&gt;• Physical Inactivity&lt;br&gt;• Obesity&lt;br&gt;• High levels of alcohol consumption&lt;br&gt;• Tobacco use</td>
</tr>
<tr>
<td>• High Cholesterol</td>
<td></td>
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<tr>
<td>• Diabetes Mellitus</td>
<td></td>
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<td>• Unhealthy Diet</td>
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<tr>
<td>• Tobacco use</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Non-modifiable Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Family History</td>
</tr>
<tr>
<td>• Genetics</td>
</tr>
<tr>
<td>• Age</td>
</tr>
<tr>
<td>• Sex</td>
</tr>
<tr>
<td>• Race and Ethnicity</td>
</tr>
</tbody>
</table>
Smoking is a major cause of CVD. It causes 1 of every 3 cardiovascular deaths.

- Elevated triglycerides
- Low HDL cholesterol
- Blood clotting
- Increased buildup of plaque in blood vessels
- Thickening and narrowing of blood vessels
Risks from Smoking

Smoking can damage every part of the body

Cancers
- Head or Neck
- Lung
- Leukemia
- Stomach
- Kidney
- Pancreas
- Colon
- Bladder
- Cervix

Chronic Diseases
- Stroke
- Blindness
- Gum infection
- Aortic rupture
- Heart disease
- Pneumonia
- Hardening of the arteries
- Chronic lung disease & asthma
- Reduced fertility
- Hip fracture

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ALABAMA PUBLIC HEALTH
Consequences of High Blood Pressure

High blood pressure (HBP) can injure or kill you. When high blood pressure is uncontrolled, it can lead to:

**STROKE**
HBP damages arteries that burst or clog more easily.
77% of people who have a first stroke have HBP. HBP increases your stroke risk by four to six times.

**VISION LOSS**
HBP can strain the vessels in the eyes.

**HEART ATTACK**
HBP damages arteries that can become blocked.
69% of people who have a first heart attack have HBP.

**HEART FAILURE**
HBP can cause the heart to enlarge and fail to supply blood to the body.
75% of people with congestive heart failure have HBP.

**KIDNEY DISEASE/FAILURE**
HBP can cause arteries around the kidneys to narrow, weaken or harden so the kidneys lose their ability to filter blood.
HBP is the second-leading cause of kidney failure.

**ERECTILE DYSFUNCTION**
HBP leads to erectile dysfunction because of reduced blood flow throughout the body.

Did You Know?

- At 50, total life expectancy is five years longer for people with normal blood pressure.
- The estimated cost of HBP in 2010 (the most-recent statistics available) is $46.4 billion.

For more information, visit heart.org/bloodpressure

Check. Change. Control.™
Diseases of the Heart are the leading cause of death in Alabama.

Cerebrovascular diseases are the fourth leading cause of death in Alabama.

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Mortality

• 1.5 million heart attacks and strokes occur every year in the U.S.

• More than 800,000 die each year from heart disease
  – 1 in every 3 deaths
  – Occur in individuals under age 65

1 in 3 deaths in the United States is due to cardiovascular disease

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Cost

• 2011 Estimated National Cost (including healthcare costs and loss of productivity) of heart disease and stroke: $316.6 billion
PREVENTION & MANAGEMENT
Know Your ABCS

**A** = Aspirin Use / Alc. Ask your provider about:
- Taking one baby aspirin (81 mg) every day, or
- Taking one regular aspirin (325 mg) every other day.
- Most diabetics should have an A1c < 7%

**B** = Blood Pressure Treatment and Control. BP < 120/80
- Consume less than 2300 mg sodium daily
- BP < 130/80 if diabetic

**C** = Cholesterol. Ask your provider about how often to check your cholesterol.
- Total cholesterol < 200
- LDL (bad cholesterol) < 100
- Do not eat trans fats

**S** = Smoking Cessation. Research shows using a quitline with medication increase abstinence rates.
- Call 1-800-QUITNOW for more details or ask your provider.
  (1-800-784-8669)
- www.alabamaquitnow.com

CARDIOVASCULAR HEALTH PROGRAM
Alabama Department of Public Health
ADPH.ORG/CVH

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MAKE CONTROL YOUR GOAL EVERY DAY

Check your blood pressure regularly – at home, at a doctor’s office, or at a pharmacy.

Quit smoking – or don’t start 1-800-Quit-Now or 1-800-784-8669

Eat a more healthy diet with:
- More fruits, vegetables, potassium and whole grain
- Less salt, saturated fat, trans fat, and cholesterol

Read nutrition labels and lower your salt intake

These people need to keep salt less than 1500 mg/day:
- Older than 51 years
- Have high blood pressure
- Have diabetes
- Have chronic kidney disease
- African Americans

Get active and maintain a healthy weight

Aim for 30 minutes 5x a week or 50 minutes 3x a week of moderate physical activity every week.

Spot a stroke “F.A.S.T.”

Face drooping – Does one side of the face droop? Ask the person to smile. Is the person’s smile uneven?

Arm weakness – Is one arm weak or numb? Ask the person to raise both arms. Does one arm drift downward?

Speech difficulty – Is speech slurred? Is the person unable to speak or hard to understand? Ask the person to repeat a simple sentence, like “The sky is blue.” Is the sentence repeated correctly?

Time to call 9-1-1 – If someone shows any of these symptoms, even if the symptoms go away, call 9-1-1 and get the person to the hospital immediately. Check the time so you’ll know when the first symptoms appeared.

Blood Pressure Category | Top Number Systolic mm Hg | Bottom Number Diastolic mm Hg
--- | --- | ---
Normal | Less than 120 | Less than 80
Prehypertension | 120 - 139 | 80 - 89
High Blood Pressure (Hypertension) Stage 1 | 140 - 159 | 90 - 99
High Blood Pressure (Hypertension) Stage 2 | 160 or higher | 100 or higher
Hypertensive Crisis | Higher than 180 | Higher than 110

What do the numbers mean?

120
80

The top number represents the pressure while the heart is beating.

The bottom number represents the pressure when the heart is resting between beats.

Bureau of Health Promotion and Chronic Disease

Alabama Public Health
**DASH Eating Plan**

Eating nutritious foods will help you control your blood pressure. The DASH diet emphasizes fruits and vegetables, low fat milk products, and whole grains. It is a Mediterranean diet full of nutrients that are good for your heart and good for your health. This eating plan is for 1,800 calories per day. The sample menu on the following page is based on this plan.

<table>
<thead>
<tr>
<th>Food Group</th>
<th>Servings</th>
<th>Serving Size</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetables</td>
<td>4-5 per Day</td>
<td>1 cup raw leafy greens, 1/2 cup chopped raw or cooked vegetables, 1/2 cup vegetable juice</td>
<td>Laminars, kale, spinach, broccoli, carrots, green beans, squash, sweet potatoes, tomatoes, asparagus, green peppers, low sodium tomatoes, juice</td>
</tr>
<tr>
<td>Fruits</td>
<td>4 per Day</td>
<td>1 medium fruit, 1/2 cup cut fresh, frozen or canned fruit, 1/4 cup dried fruit</td>
<td>Apples, bananas, berries, oranges, pineapple, peaches, pears, grapes, melons, dates, dried apricots</td>
</tr>
<tr>
<td>Grains</td>
<td>6-7 per Day</td>
<td>1 slice of bread, 1/2-1 cup dry cereal, 1/2 cup cooked rice, pasta or grain</td>
<td>Whole wheat bread and rolls, whole wheat pasta, English muffin, brown rice, pita bread, popcorn, oatmeal, quinoa, unsalted pretzels</td>
</tr>
<tr>
<td>Dairy</td>
<td>2-3 per Day</td>
<td>1 cup milk or yogurt, 1/2 cup cooked rice, pasta or grain</td>
<td>1% fat or non-fat milk, reduced fat cheese, fat free or low fat regular or frozen yogurt</td>
</tr>
<tr>
<td>Poultry, Fish, Lean Meats</td>
<td>4-6 ounces per Day</td>
<td>1 ounce cooked meat, poultry or fish, 1 egg (or 1 ounce serving)</td>
<td>Choose lean meat and trim visible fat, remove skin from poultry: Bake, broil or poach</td>
</tr>
<tr>
<td>Beans, Nuts, Seeds</td>
<td>4 per Week</td>
<td>1/3 cup or 1/2 ounce nuts, 2 teaspoons peanut butter, 2 tablespoons or 1/2 ounce nuts, 1/2 cup cooked beans or dry peas</td>
<td>Almonds, walnuts, sunflower seeds, peanuts, peanut butter, kidney beans, pinto beans, beans, split peas</td>
</tr>
<tr>
<td>Oils, Fats</td>
<td>2 per Day</td>
<td>1 teaspoon soft margarine, 1 teaspoon vegetable oil</td>
<td>Soft margarine, vegetable oils (canola, corn, olive or safflower), low fat mayonnaise, fat free salad dressing</td>
</tr>
<tr>
<td>Desserts, Sweets, Added Sugars</td>
<td>4 or less per Week</td>
<td>1 tablespoon jelly, 1/2 cup sorbet, 1 small cookie</td>
<td>Jams and jellies, fruit punch, hard candy, maple syrup, sorbet and ice cream, sugar</td>
</tr>
</tbody>
</table>

**Life’s Simple 7**

Seven Steps to a Healthier Heart

**BUREAU OF HEALTH PROMOTION AND CHRONIC DISEASE**
DIABETES

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Diabetes & Prediabetes

- 29.1 million people have diabetes, that's about 1 out of every 11 people.
- 1 out of 4 do not know they have diabetes.

- 86 million American adults—more than 1 out of 3—have prediabetes.
- 1 out of 3.

- 9 out of 10 people with prediabetes do not know they have it.

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## Types of Diabetes

<table>
<thead>
<tr>
<th>Type 1 DM</th>
<th>Type 2 DM</th>
<th>Gestational</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body does not produce insulin</td>
<td>Body cannot use insulin properly</td>
<td>Body of a pregnant woman does not secrete excess insulin required during pregnancy</td>
</tr>
<tr>
<td>Can develop at any age</td>
<td>Can develop at any age</td>
<td></td>
</tr>
<tr>
<td>No known way to prevent it</td>
<td>Most cases can be prevented</td>
<td></td>
</tr>
</tbody>
</table>

**Type 1 DM**
- Body does not produce insulin
- Can develop at any age
- No known way to prevent it

**Type 2 DM**
- Body cannot use insulin properly
- Can develop at any age
- Most cases can be prevented

**Gestational**
- Body of a pregnant woman does not secrete excess insulin required during pregnancy
Prevalence of Diabetes in the United States
### Prevalence of Diabetes in Alabama Adults by Demographic Categories (2015)

<table>
<thead>
<tr>
<th>Ever told you had diabetes?</th>
<th>Alabama (2015)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Yes</strong></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>13.5% (12.5-14.5)</td>
</tr>
<tr>
<td>Male</td>
<td>12.9% (11.5-14.3)</td>
</tr>
<tr>
<td>Female</td>
<td>14.0% (12.8-15.2)</td>
</tr>
<tr>
<td>White/Non-Hispanic</td>
<td>12.7% (11.5-13.9)</td>
</tr>
<tr>
<td>Black/Non-Hispanic</td>
<td>16.8% (14.8-18.8)</td>
</tr>
<tr>
<td>45-54</td>
<td>12.2% (10.0-14.4)</td>
</tr>
<tr>
<td>55-64</td>
<td>23.6% (20.9-26.3)</td>
</tr>
<tr>
<td>65+</td>
<td>27.1% (24.9-29.3)</td>
</tr>
<tr>
<td>Less Than High School</td>
<td>22.4% (19.1-25.7)</td>
</tr>
<tr>
<td>High School/GED</td>
<td>12.5% (10.9-14.1)</td>
</tr>
<tr>
<td>Some Post High School</td>
<td>11.6% (10.0-13.2)</td>
</tr>
<tr>
<td>College Graduate</td>
<td>10.4% (8.8-12.0)</td>
</tr>
</tbody>
</table>

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Detection: Screening Recommendations

(Updated 2015) United States Preventive Task Force (USPSTF) recommends screening for:

- Adults ages 40 to 70 who are overweight or obese
- Family History of Diabetes
- History of gestational diabetes or polycystic ovarian syndrome
- A member of certain racial/ethnic groups

ADA recommends screening for:

- Age 45 or older
- Any overweight or obese adult that has at least 1 diabetes risk factor *
- *Other risk factors: physical inactivity, first-degree relative with diabetes, hypertension, CVD History, women who delivered a baby more than 9lbs or prior to GDM diagnosis

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Diabetes Testing

Glycated Hemoglobin
Glycated Hemoglobin levels are used to assess long-term blood glucose control. Levels of 6.5% or higher indicate diabetes, while levels below 6.0% are considered normal.

Fasting Plasma Glucose
A fasting plasma glucose test measures blood glucose levels after an overnight fast. Levels of 126 mg/dl or higher indicate diabetes, while levels below 100 mg/dl are considered normal.

Glucose Tolerance Test
The glucose tolerance test measures how your body processes glucose. Levels of 200 mg/dl or higher indicate diabetes, while levels below 140 mg/dl are considered normal.

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RISK FACTORS

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Risk Factors

Modifiable
- Physical activity
- High body fat or weight
- High cholesterol
- High blood pressure

Non-modifiable
- Family history
- Age
- Race/Ethnicity
- History of gestational diabetes

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• According to the CDC, **15-30%** of people with prediabetes will develop type 2 diabetes **within 5 years** (CDC 2016).

Diabetes Related Complications

**EYES**
28.5 percent of U.S. adults (aged 40 or older) living with diabetes have diabetic retinopathy.

**HEART**
2-4x increased risk of death due to heart disease.

**KIDNEY**
44 percent of new cases of kidney failure are diabetes-related.

**FEET**
The number ONE reason a person loses a toe, foot, or leg (excluding traumatic loss).

**COSTS**
245 Billion Dollars—Total cost of diagnosed diabetes in the U.S. in 2012.

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[Alabama Public Health]
How Diabetes Affects Your Heart

ABCs of Diabetes

A for the A1C test. The A1C test shows you what your blood sugar (glucose) has been over the last three months. High blood sugar levels can harm your heart and blood vessels, kidneys, feet, and eyes.

B for blood pressure. High blood pressure makes your heart work too hard. It can cause heart attack, stroke, and kidney disease.

C for cholesterol. One kind of cholesterol, called LDL, can build up and clog your blood vessels. It can cause heart attack or stroke.

S for stop smoking. Ask for help or call 1-800-QUIT-NOW

Ask your health care team:
What your A1C, blood pressure, and cholesterol numbers are;
What your ABC numbers should be; and
What you can do to reach your ABC goals.

Tips to reduce your risk for heart disease.

Maintain a Healthy Weight
Make Healthy Food Choices
Stay Active
Stop Smoking

Know Your Diabetes ABCs Talk to your health care team about how to manage your A1C, blood pressure, and cholesterol. This will help lower your chances of having a heart attack, a stroke, or other diabetes problems.
Diabetes Mortality

- According to the World Health Organization, diabetes directly caused an estimated 1.5 million deaths globally in 2012.
- Diabetes is the 7th leading cause of death in the United States and in Alabama.
Diabetes Mortality In Alabama

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THE STAGGERING COSTS OF DIABETES IN AMERICA

Nearly 30 million Americans have diabetes.

$1 in $3 Medicare dollars is spent caring for people with diabetes.

Diabetes and prediabetes cost America $322 billion per year.

86 million Americans have prediabetes.

$1 in $5 health care dollars is spent caring for people with diabetes.

Today, 3,835 Americans will be diagnosed with diabetes. Today, diabetes will cause 200 Americans to undergo an amputation, 136 to enter end-stage kidney disease treatment and 1,795 to develop severe retinopathy that can lead to vision loss and blindness.

Learn how to fight this costly disease at diabetes.org/congress

American Diabetes Association

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Diabetes Self-Management Education (DSME)

- There are over 40 recognized or accredited programs in Alabama.
- 24 of Alabama’s counties have an accredited or recognized DSME program.
Diabetes Prevention Program (DPP)

**Goal**
- to make it easier for people with prediabetes to participate in evidence-based, affordable, and high-quality lifestyle change programs to reduce their risk of type 2 diabetes and improve their overall health.
- 1 year program
  - 7% body weight loss
  - Moderate physical activity of 150 min per week

**Recognized DPP Organizations in Alabama**
- Family Medical Services Pharmacy-Bessemer, AL
- Pack Health-Birmingham, AL
- Poarch Creek Indian Health Department-Atmore, AL
- Providence Hospital Diabetes Center-Mobile, AL
- The YMCA of Greater Birmingham-Birmingham, AL

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Obesity

• Defined as excessively high amounts of body fat or adipose tissue as it relates to lean body mass.

• Body Mass Index (BMI)
  – Measure expressing the relationship (or ratio) of weight-to-height.
  – Commonly used to classify overweight and obesity in adults.

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Alabama Statistics by Demographics

Body Mass Index of Alabama Adults by Age Groups (2015)*

<table>
<thead>
<tr>
<th>Estimated Percentage of age group</th>
<th>Overweight</th>
<th>Obese</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25-34</td>
<td></td>
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<tr>
<td>35-44</td>
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<tr>
<td>45-54</td>
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<tr>
<td>55-64</td>
<td></td>
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<tr>
<td>65+</td>
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</tbody>
</table>


Alabama Body Mass Index Estimates for Overweight and Obese

<table>
<thead>
<tr>
<th></th>
<th>Overweight</th>
<th>Obese</th>
</tr>
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<tbody>
<tr>
<td>Total</td>
<td>33.0%</td>
<td>35.6%</td>
</tr>
<tr>
<td></td>
<td>(31.4-34.6)</td>
<td>(34.0-37.2)</td>
</tr>
<tr>
<td>Male</td>
<td>37.8%</td>
<td>34.9%</td>
</tr>
<tr>
<td></td>
<td>(35.4-40.2)</td>
<td>(32.5-37.3)</td>
</tr>
<tr>
<td>Female</td>
<td>28.4%</td>
<td>36.4%</td>
</tr>
<tr>
<td></td>
<td>(26.6-30.2)</td>
<td>(34.4-38.4)</td>
</tr>
</tbody>
</table>
RISK FACTORS

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Risk Factors

- Behavior
- Community/Environmental
- Genetics
- Diseases
- Drugs

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Medical Complications of Obesity

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Cost

- Economic impact on the U.S. health care system

- Medical costs involve
  - Direct cost
    - Preventive, diagnostic, and treatment services
  - Indirect Cost
    - Morbidity and mortality costs
    - Productivity
      » Absenteeism
      » Presenteeism

The estimated annual medical cost of obesity in the U.S. was $147 billion in 2008.

- Annual productive costs
  - Absenteeism cost $3.38 - $6.38 billion

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PREVENTION & MANAGEMENT

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Prevention/Management

• Exercise
• Healthy eating
• Focus on portion size
• Reduce screen time
• Keep track of your weight

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References

- CDC. (Updated 2015). Heart Disease: Conditions that Increase Risk for Heart Disease. Available at: http://www.cdc.gov/heartdisease/conditions.htm
Acknowledgements

The Alabama Diabetes Program and Cardiovascular Program are supported by a grant/cooperative agreement from CDC. The contents of this presentation are solely those of the authors and do not necessarily represent the official views of CDC.

THANK YOU!