

## 4. Nutrition and Physical Activity

### Ranked AL's Fourth Health Indicator

AL identified nutrition and physical activity (NPA) as the fourth highest current health indicator. Most Americans are sedentary and may engage in limited physical activities. The American Heart Association® (AHA) recommends about 30 minutes per day of moderate physical activity, while the average American is either in a sitting or lying position for about 18 hours a day.<sup>1</sup>

NPA is combined in this report since they influence one another. Insufficient physical activity and poor nutrition can result in weight gain and chronic health conditions.<sup>2</sup> The Body Mass Index (BMI) is one way to calculate body fat by using weight divided by height, although other calculations are more accurate. A BMI between 25.0-29.9 kg/m<sup>2</sup> is categorized as overweight, 30.0-34.9 kg/m<sup>2</sup> is categorized as obese, and over 35 kg/m<sup>2</sup> is labeled morbidly obese.<sup>3</sup> In 2019, over one-third of Alabamians were considered at least obese.<sup>2</sup> Obesity is a risk factor for hypertension, diabetes, heart disease, sleep apnea, mental illness, and osteoarthritis.

#### Vulnerable Populations

AL is a very rural state, and many residents live in food deserts, i.e., places with limited access to fresh fruits and vegetables. The U.S. Department of Agriculture, (USDA) defines food insecurity as a "lack of access to enough food for an active, healthy life for all household members and limited availability of nutritionally adequate foods."<sup>4</sup> In AL, 16.1 percent overall and 20.8 percent of children struggled with food insecurity in 2019.<sup>5</sup>

#### Geographic Variation

AL has a state park system and green walkways in many urban centers. ADPH partnered with the AL Department of Transportation (ALDOT) to increase the number of walkable communities, which includes more sidewalks and slower speed limits to increase neighborhood mobility.

#### Topics Addressed for This Indicator are:

- Adults classified as obese.
- Adults consuming fruits less than once per day.
- Adults consuming vegetables less than once per day.
- Adults who participate in physical activity.

#### Highlights

The data presented for this information comes from BRFSS, which includes self-reported measures. Data are also retrieved from U.S. Census Bureau, AL Department of Conservation and Natural Resources, and community partners:

- Over one-third (36.1 percent) of AL adults are obese.

- Regular exercise and physical activity reduce the risk for many chronic diseases.

#### Risk Factors:

- Neighborhood safety.
- Physical pain.
- Education.
- Food access.
- Ages 45-65 years old.
- Overconsumption of beverages high in sugar content.
- Medications that contribute to weight gain.

## Adults Classified as Obese

Obesity is defined as a BMI of more than 30 kg/m<sup>2</sup>. This medical condition can have associated adverse effects on the body, such as CVD, stroke, diabetes, cancer, and respiratory complications:

- In 2019, over one-third (36.1 percent) of AL adults were obese. The prevalence of obesity has gradually increased over the past 20 years. The national prevalence of obesity is 32.1 percent. AL had the seventh highest adult obesity prevalence in the U.S. for 2019.<sup>7</sup>
- According to BFRSS, 41.7 percent of Alabamians with an annual household income less than \$15,000 were obese.
- AA/black individuals have a significantly higher prevalence of obesity than white individuals.

	<b>%</b>	<b>95% CI</b>
<b>AL</b>	<b>36.1</b>	<b>(34.6-37.7)</b>
<b>U.S. Median</b>	<b>32.1</b>	<b>-</b>
<b>Public Health Districts</b>		
Northern	34.7	(30.8-38.6)
Northeastern	34.4	(30.7-38.1)
West Central	41.1	(36.7-45.5)
Jefferson	35.1	(31.1-39.2)
East Central	34.7	(30.2-39.2)
Southeastern	38.8	(34.2-43.5)
Southwestern	38.2	(33.9-42.5)
Mobile	37.3	(33.0-41.6)
<b>Geographic Variation</b>		
N/A	-	-
<b>Sex</b>		
Male	36.0	(33.7-38.4)
Female	36.2	(34.2-38.3)

Race		
White	32.5	(30.8-34.3)
AA/black	46.7	(43.4-49.9)
Household Income		
Less than \$15,000	41.7	(36.4-46.9)
\$15,000-24,999	40.6	(36.5-44.7)
\$25,000-34,999	38.9	(33.5-44.4)
\$35,000-49,999	35.8	(31.3-40.2)
\$50,000+	33.2	(30.8-35.6)
Age (in years)		
18-24	24.6	(19.0-30.2)
25-34	36.4	(32.0-40.8)
35-44	40.3	(36.2-44.4)
45-54	41.5	(37.8-45.2)
55-64	41.2	(38.0-44.4)
65+	31.3	(29.0-33.6)
Education		
Less than high school	43.4	(38.1-48.6)
High school or GED	34.4	(31.7-37.1)
Some college	37.3	(34.6-40.1)
College graduate or higher	32.0	(29.5-34.5)

## Adults Consuming Vegetables Less Than Once Per Day

Nutrition is an essential tool to keeping a healthy lifestyle. Vegetable intake is an indicator of an overall healthy diet and may reduce the risk of many chronic diseases:

- Among those least likely to consume at least one serving of vegetables are lower educational attainment and a low household income.
- Nutrition was assessed through self-reported data on daily fruit and vegetable consumption. Over 1 in every 5 AL adults (22.3 percent) consume vegetables less than once per day.
- College graduates are significantly more likely to have consumed one or more servings of vegetables, compared to Alabamians whose highest level of education is high school graduate or less.
- AL males and females had similar percentages of consuming one or more servings of vegetables.

Table 4.2 – Percentage of Adults Consuming Vegetables Less Than Once Per Day, 2019		
	%	95% CI
<b>AL</b>	<b>22.3</b>	<b>(20.9-23.7)</b>
<b>U.S. Median</b>	<b>20.3</b>	<b>-</b>

Public Health Districts		
Northern	19.2	(15.8-22.5)
Northeastern	22.2	(18.8-25.7)
West Central	20.6	(16.9-24.4)
Jefferson	25.8	(22.0-30.0)
East Central	24.1	(19.5-28.7)
Southeastern	23.7	(19.3-28.1)
Southwestern	21.7	(18.1-25.3)
Mobile	23.4	(19.5-27.3)
Geographic Variation		
N/A	-	-
Sex		
Male	23.0	(20.8-25.1)
Female	21.7	(19.9-23.6)
Race		
White	19.3	(17.7-20.9)
AA/black	31.4	(28.2-34.6)
Household Income		
Less than 15,000	35.8	(30.5-41.2)
\$15,000-24,999	26.4	(22.6-30.1)
\$25,000-34,999	20.9	(15.7-26.1)
\$35,000-49,999	22.5	(18.3-26.7)
\$50,000+	14.9	(13.0-16.8)
Age (in years)		
18-24	27.1	(20.7-33.4)
25-34	20.1	(16.3-24.0)
35-44	18.6	(15.3-21.8)
45-54	20.8	(17.7-23.9)
55-64	23.5	(20.5-26.4)
65+	24.2	(22.0-26.4)
Education		
Less than high school	34.2	(28.9-39.4)
High school or GED	25.4	(22.8-27.9)
Some college	20.0	(17.5-22.5)
College graduate or higher	14.6	(12.7-16.4)

## Adults Consuming Fruits Less Than Once Per Day

Nutrition is an essential tool to keeping a healthy lifestyle. Fruit intake is an indicator of an overall healthy diet and may reduce the risk of many chronic diseases:

- According to BRFSS, nearly 1 in 2 AL adults (46.1 percent) do not consume at least one fruit serving each day, including 100 percent fruit juices.
- College graduates are significantly more likely to have consumed one or more servings of fruit, compared to Alabamians whose highest level of education is high school graduate or less.

- White populations have a similar consumption of fruit servings compared to AA/black populations (47.7 percent compared to 44.9 percent).

<b>Table 4.3 – Percentage of Adults Consuming Fruit Less Than Once Per Day, 2019</b>		
	<b>%</b>	<b>95% CI</b>
<b>AL</b>	<b>46.1</b>	<b>(44.5-47.8)</b>
<b>U.S. Median</b>	<b>39.3</b>	<b>-</b>
<b>Public Health Districts</b>		
Northern	45.3	(41.1-49.5)
Northeastern	45.7	(41.7-49.7)
West Central	47.8	(43.2-52.4)
Jefferson	43.8	(39.5-48.0)
East Central	45.6	(40.7-50.6)
Southeastern	51.4	(46.5-56.3)
Southwestern	46.2	(41.7-50.8)
Mobile	47.1	(42.5-51.6)
<b>Geographic Variation</b>		
N/A	-	-
<b>Sex</b>		
Male	47.7	(45.2-50.2)
Female	44.7	(42.6-46.9)
<b>Race</b>		
White	47.4	(45.4-49.3)
AA/black	44.9	(41.6-48.2)
<b>Household Income</b>		
Less than 15,000	50.1	(44.9-55.4)
\$15,000-24,999	47.3	(42.8-51.7)
\$25,000-34,999	47.1	(41.1-53.0)
\$35,000-49,999	42.5	(37.7-47.2)
\$50,000+	44.3	(41.7-46.9)
<b>Age (in years)</b>		
18-24	45.4	(38.6-52.3)
25-34	48.2	(43.4-53.0)
35-44	44.2	(40.0-48.4)
45-54	48.2	(44.4-51.9)
55-64	48.8	(45.5-52.1)
65+	42.9	(40.4-45.4)
<b>Education</b>		
Less than high school	49.0	(43.6-54.5)
High school or GED	48.4	(45.4-51.5)
Some college	47.3	(44.3-50.3)
College graduate or higher	39.5	(36.9-42.1)

## Adults Who Participate in Physical Activities

Regular exercise and other physical activities reduce the risk for many chronic diseases. An individual may

experience barriers to physical activity due to their environment and access to safe neighborhoods:

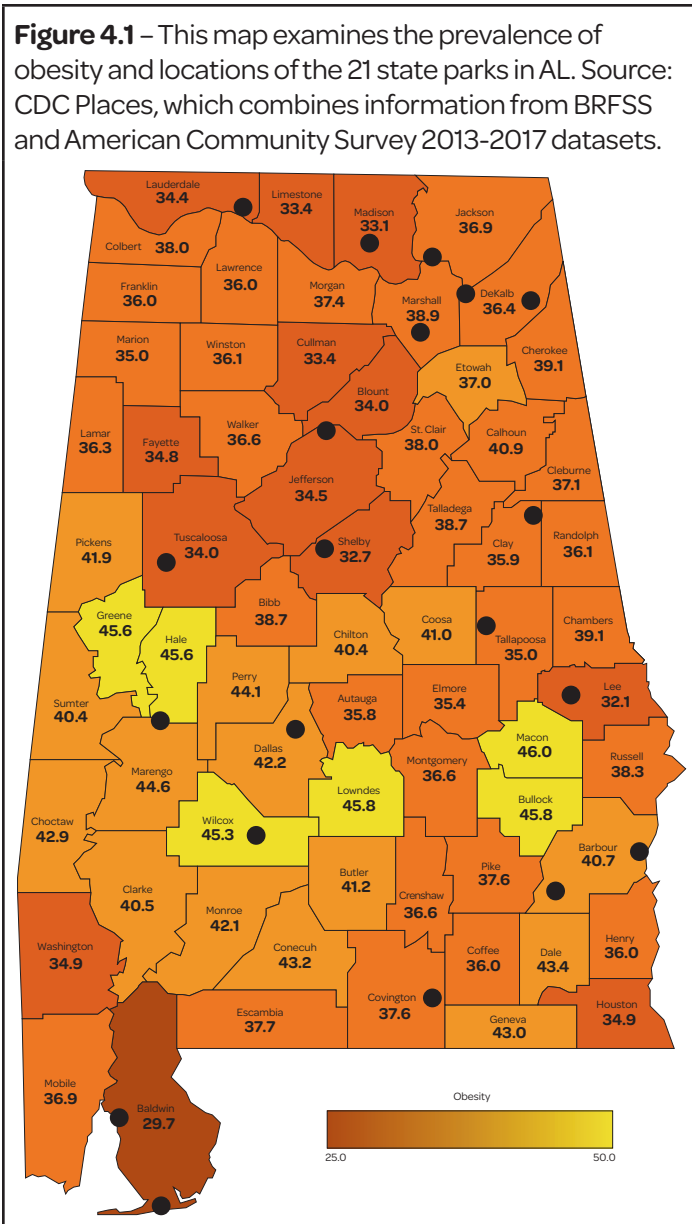
- Current physical activity guidelines recommend adults participate in at least 150 minutes of moderate aerobic activity each week and participate in muscle-strengthening exercises two or more days per week.
- Conversely, 31.5 percent of AL adults did not meet the recommended physical activity guidelines to stay healthy and prevent chronic disease.
- Males are more likely to meet recommended physical activity levels than females.
- Physical activity decreases with age. In young adults 18-24 years old, 3 out of 4 reports meeting physical activity standards. In adults over 65 years old, 3 out of 5 reports meeting physical activity standards.

<b>Table 4.4 – Percentage of Adults Who Reported Doing Any Physical Activity in the Past Month, 2019</b>		
	<b>%</b>	<b>95% CI</b>
<b>AL</b>	<b>68.5</b>	<b>(67.0-70.0)</b>
<b>U.S. Median</b>	<b>73.7</b>	<b>-</b>
<b>Public Health Districts</b>		
Northern	69.7	(66.1-73.4)
Northeastern	70.3	(66.9-73.7)
West Central	66.1	(61.9-70.3)
Jefferson	69.9	(66.2-73.7)
East Central	67.8	(63.3-72.3)
Southeastern	63.3	(58.7-67.8)
Southwestern	66.9	(63.0-70.8)
Mobile	69.7	(65.8-73.6)
<b>Geographic Variation</b>		
N/A	-	-
<b>Sex</b>		
Male	71.7	(69.5-73.9)
Female	65.7	(63.7-67.6)
<b>Race</b>		
White	69.0	(67.3-70.7)
AA/black	64.7	(61.7-67.7)
<b>Household Income</b>		
Less than \$15,000	57.3	(52.3-62.3)
\$15,000-24,999	60.4	(56.3-64.5)
\$25,000-34,999	63.2	(57.5-68.9)
\$35,000-49,999	69.4	(65.2-73.5)
\$50,000-74,999	79.0	(77.0-81.0)
<b>Age (in years)</b>		
18-24	77.6	(72.3-82.9)
25-34	72.4	(68.1-76.6)
35-44	70.4	(66.6-74.2)
45-54	69.1	(65.7-72.5)

55-64	63.1	(59.8-66.3)
65+	63.4	(61.1-65.8)
<b>Education</b>		
Less than high school	57.1	(51.9-62.2)
High school or GED	63.2	(60.4-65.9)
Some college	70.5	(68.0-73.1)
College graduate or higher	80.4	(78.4-82.4)

## A Closer Look into Nutrition and Physical Activity

Each year, chronic diseases account for 70 percent of all deaths in the U.S. Obesity, physical inactivity, and poor nutrition are modifiable behaviors that contribute to chronic diseases, specifically heart disease, stroke, diabetes, and cancer.<sup>7</sup> Vulnerable populations may have difficulties achieving recommended levels of physical



activity and accessing nutritionally dense foods. For example, rural populations may have a longer commute to grocery stores, parks, and recreation centers; thus, any additional barriers in their physical and built environment can lead to different levels of health risks, needs, and outcomes compared to urban populations. In this section, parks and quality food access were further explored for their association to health outcomes of Alabamians.

### Walk Score and Access to State Parks

Walking is a low-cost, low-impact physical activity to maintain and improve health.<sup>7</sup> The AHA recommends that adults get at least 30 minutes of moderate-intensity aerobic exercise 5 or more days a week, with strength training activities at least 2 days per week.<sup>8</sup> Only 68.5 percent of Alabamians met the reported physical activity guidelines in 2019.<sup>9</sup>

A walk score is based on the walking distance (under one mile) to amenities such as stores, restaurants, and parks. A good walk score is above 70 and indicates low car dependence, multiple forms of available transportation, and that most errands can be accomplished on foot.<sup>10</sup> The average walk score in AL's higher population areas was 22 in 2019, indicating higher car dependence. Homewood, AL, had the highest walk score, followed by Birmingham and Tuscaloosa (41, 35, and 33, respectively).<sup>10</sup> Rural areas did not receive a score, which highlights pedestrian walkability concerns and the lack of alternative forms of transportation. The score also does not account for diverse populations such as children, seniors, or people living with disabilities.

Parks may be a way for individuals in non-urban areas to increase their physical activity in public spaces. Access to parks, trails, greenways, and recreational centers provides opportunities to support a more active lifestyle and improve neighborhood safety.<sup>11</sup> AL state parks are managed by the AL Department of Conservation and Natural Resources. AL has 21 state parks that cover approximately 48,000 acres.<sup>12</sup>

A park is more likely to be used if it is nearby and easy to access.<sup>11</sup> Individuals deprived of green areas may be deprived of physical activity. Most state parks are directly outside urban centers where greenways, local parks, and walkways also exist. Figure 4.1 overlays the prevalence of obesity with the 21 state park locations. The areas with higher obesity rates are more rural and have fewer areas of walk space. The West Central District has the highest obesity rate in the state (41.1 percent in 2019).

### Food Insecurity and Health Outcomes

A healthy, well-rounded diet includes 2 cups of fruit and 2.5 cups of vegetables every day.<sup>13</sup> Only 46.1 percent of Alabamians eat the recommended servings of fruit per



day, and 22.3 percent eat the recommended vegetables per day. The availability and affordability of healthy foods allows people to make healthier food choices.<sup>14</sup> The ADPH NPA Division uses ongoing surveillance to develop effective dietary interventions and to understand the barriers Alabamians face to eating healthy foods regularly. Food-related environmental factors influence available food choices and diet quality, such as:

- Ongoing supply of healthy foods and food insecurity.<sup>14</sup>
- Access to transportation to food diverse areas.<sup>14</sup>
- Proximity to healthy food retailers.<sup>14</sup>
- Food costs and grocery tax between food retail providers.<sup>14</sup>
- Convenience of purchasing and making healthy meals.<sup>14</sup>

USDA defines food insecurity as a periodic lack of access to enough food for an active, healthy life for all household members and limited availability of nutritionally adequate foods.<sup>15</sup> AL's food insecurity rate was 16.1 percent in 2019, with an estimated 788,250 people who experienced food insecurity.<sup>5</sup> Additionally, meal gaps refer to the population in between secure and insecure. Every county had residents who did not qualify for Federal Nutrition Assistance but still experienced food insecurity. Nearly 1 in 4 children and 1 in 6 adults experienced hunger regularly.<sup>5</sup>

Another environmental factor is the convenience of purchasing meals and access to food diverse areas. Food deserts refer to a residential area with no immediate access to quality foods that support a healthy diet (greater than 1 mile for urban areas and greater than 10 miles in rural areas).<sup>16</sup> Rural populations may be experiencing insecurity due to living in a food desert. In urban areas, residents often live close to grocery stores compared to rural areas, where multiple modes of transportation may be required to access the closest grocery store.<sup>16</sup> Furthermore, 5.8 percent of rural households in AL do not have a car compared to 4.4 percent of urban households. Since 43.0 percent of the population live in rural counties, lack of transportation and the distance from grocery stores negatively impacts food security for many Alabamians.

Five food banks serve and distribute food throughout AL.<sup>5</sup> In 2019, the Community Food Bank of Central AL completed a regional study to assess the general health, living situation, nutrition knowledge, and experiences with hunger and food pantries. The Central AL area covers 12 counties and feeds over 60,000 people at risk of hunger per month. Eighty-two percent of the served population reported running out of food and not having enough money to buy more.<sup>17</sup>

Financial constraints are the most reported reasons for food insecurity. The average American household spent \$5,576.21 on food from home and restaurants in 2019, which was 9.6 percent of their disposable income.<sup>18</sup> Affordability and access vary by income level. High-income areas are more likely to have access to grocery stores and healthy food options. A high-income household spent \$13,987 on food, representing 8.0 percent of their income.<sup>15,18</sup> Low-income populations spent an average of \$4,400 on food, representing 36.0 percent of their disposable income.<sup>18</sup> In the Community Food Bank study, 91 percent of the served population was unemployed, 62 percent were on disability support, and 27 percent were retired or unpaid caretakers. Over 80 percent of respondents made an income of less than \$20,000 per year. For those with limited financial resources, respondents reported that fixed expenses (e.g., housing and medication costs) are usually covered first, leaving little for flexible expenses (e.g., food budgets).<sup>17</sup> The served population had to make difficult choices between food and other expenses.

The served population had to choose between:

- Food and medicine (73 percent).<sup>17</sup>
- Food and utilities (62 percent).<sup>17</sup>
- Food and transportation (54 percent).<sup>17</sup>
- Food and rent/housing costs (42 percent).<sup>17</sup>
- Food and educational expenses (17 percent).<sup>17</sup>

Most of the served population bought the cheapest food even if it was not the healthiest option (78 percent). Other strategies the population took to avoid hunger included getting help from family or friends (58 percent), buying food in dented or damaged packages to save money (50 percent), growing food in a garden (41 percent), and watered-down food or drinks to make them last longer (28 percent). Unaddressed food insecurity and poor diets lead to chronic illnesses such as heart disease, diabetes, and obesity.<sup>14</sup> The served population had a much higher prevalence of chronic diseases than the national and state averages:

- The served population reported an 80.0 percent high blood pressure prevalence compared to the state average of 42.5 percent in 2019.<sup>17,19</sup>
- The served population reported a 51.0 percent high cholesterol prevalence compared to the state average of 36.9 percent in 2019.<sup>17,19</sup>
- The served population reported a 44.0 percent diabetes prevalence compared to the state average of 13.9 percent in 2019.<sup>17,19</sup>

## Data Sources

**Table 4.1 – Percentage of Adults Classified as Obese, 2019.** CDC, BRFSS, 2018–2019. Data requested March 2021.

**Table 4.2 – Percentage of Adults Consuming Vegetables Less Than Once Per Day, 2019.** CDC, BRFSS, 2018–2019. Data requested March 2021.

**Table 4.3 – Percentage of Adults Consuming Fruit Less Than Once Per Day, 2019.** CDC, BRFSS, 2018–2019. Data requested March 2021.

**Table 4.4 – Percentage of Adults who Reported Doing any Physical Activity in the Past Month, 2019.** CDC, BRFSS, 2018–2019. Data requested March 2021.

## Written Sources

1. AHA, Recommendations for Physical Activity in Adults, 2020.
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11. CDC, Parks, Trails, and Health, 2014.
12. AL Department of Conservation and Natural Resources, About AL State Parks, 2021.
13. USDA, Dietary Guidelines for Americans 2020–2025, 2020.
14. CDC, Healthy Food Environments: Improving Access to Healthier Food, 2020.
15. USDA Economic Research Service, Food Access Research Atlas, 2021.
16. USDA Economic Research Service, Food Deserts in AL, 2020.
17. Community Food Bank of Central AL, Hunger in Central AL, 2020.
18. USDA Economic Research Service, Consumer Expenditure Survey, 2021.
19. CDC BRFSS, Chronic Disease Outcomes in AL, 2020.

## Community Resources

### AL Child Nutrition Program

Location: Statewide  
Type: State Government Program

### AL Cooperative Extension System

Location: Montgomery County, AL  
Type: Nonprofit Organization

### AL Office of Minority Health

Location: Montgomery County, AL  
Type: State Government Organization

### AL Office of Women’s Health

Location: Montgomery County, AL  
Type: State Government Organization

### AL State Parks Division

Location: Montgomery County, AL  
Type: State Government Organization

### Auburn Outdoor Adventures

Location: Lee County, AL  
Type: Non-profit Organization

### Community Supported Agriculture

Location: Etowah County, AL  
Type: Non-profit Organization

### Community Supported Agriculture

Location: Lauderdale County, AL  
Type: Non-profit Organization

### Farmers Market Authority

Location: Montgomery County, AL  
Type: State Government Organization

### Lakeshore Foundation

Location: Jefferson County, AL  
Type: Non-profit Organization

### National Center for Physical Activity and Disability

Location: Nationwide  
Type: Federally Funded Program

### National Physical Activity Plan

Location: Nationwide  
Type: Federally Funded Program

### Produce for Better Health Foundation

Location: Montgomery County, AL  
Type: Nonprofit Organization

### Scale Back AL

Location: Montgomery County, AL  
Type: State Funded Program

### Sweet Grown AL

Location: Montgomery County, AL  
Type: Non-profit Organization

### YMCA

Location: Nationwide  
Type: Non-profit Organization