

# Well-being and Obesity in Minnesota

## Introduction

*“Well-being is a positive outcome that is meaningful for people and for many sectors of society because it tells us that people perceive that their lives are going well.”<sup>1</sup>*

There are many components to well-being including physical, emotional, financial, environmental, and occupational. Obesity is a condition that influence one’s well-being, especially physical well-being<sup>2</sup>. The COVID-19 pandemic compounded the relationship between obesity and well-being through its impact on physical activity and healthy eating, as well as emotional, financial, and occupational well-being. The relationship among these factors is complex.

This brief describes the current obesity rates and measures of well-being using the Centers for Disease Control and Prevention (CDC) Behavioral Risk Factor Surveillance System (BRFSS). Data from BRFSS are used to monitor trends over time and inform public health programs at the state and national level. The Minnesota Department of Health (MDH) uses these data to track changes over time, inform the public about the status of obesity and associated factors such as well-being, and support planning of public health interventions designed to improve the health of Minnesotans.

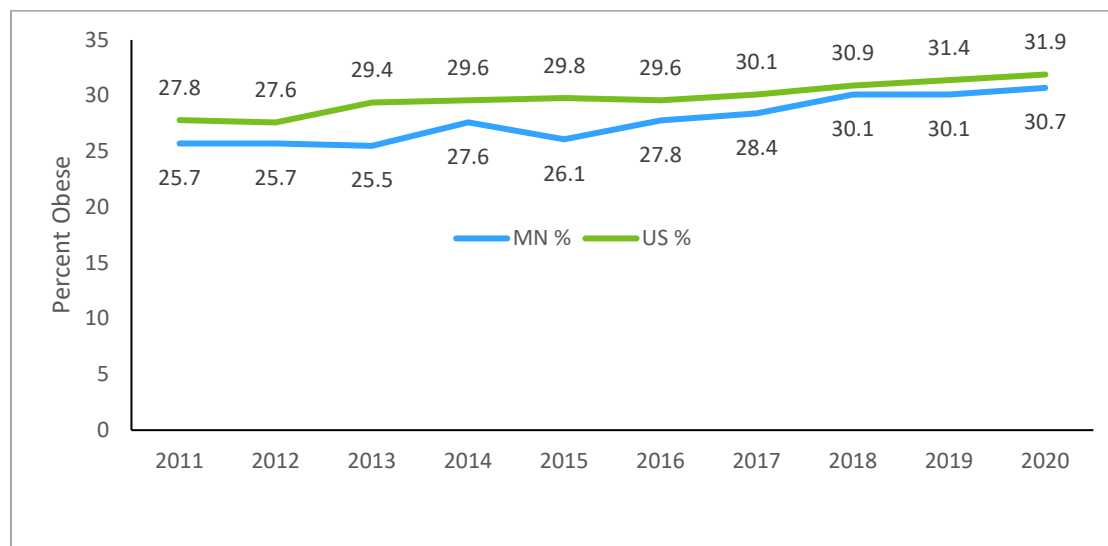
## Obesity: Minnesota and U.S. Comparison

Minnesota’s obesity rates have generally been lower than the U.S. but these rates are beginning to converge [Figure 1]. In 2020, Minnesota’s obesity rate was 30.7. This figure is not significantly different from Minnesota’s obesity rate in 2019 (30.1 percent) or the national rate from 2020 (31.9 percent).

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<sup>1</sup> CDC Well-being Concepts, Health Related Quality of Life, <https://www.cdc.gov/hrqol/wellbeing.htm#four>. Accessed 09/10/2021

<sup>2</sup> Doll HA, Petersen SE, Stewart-Brown SL. Obesity and physical and emotional well-being: associations between body mass index, chronic illness, and the physical and mental components of the SF-36 questionnaire. *Obes Res.* 2000 Mar;8(2):160-70. doi: 10.1038/oby.2000.17. PMID: 10757202.

**Figure 1. Obesity rates: Minnesota vs U.S., 2011-2020**

Data Source: CDC Behavioral Risk Factor Surveillance System

## Mental and Physical Well-being in Minnesota

### Measures

Well-being is a valid population outcome measure that tells us how people perceive their life is going from their own perspective<sup>3</sup>. BRFSS captures well-being through measures of physical and mental health including the following survey items:

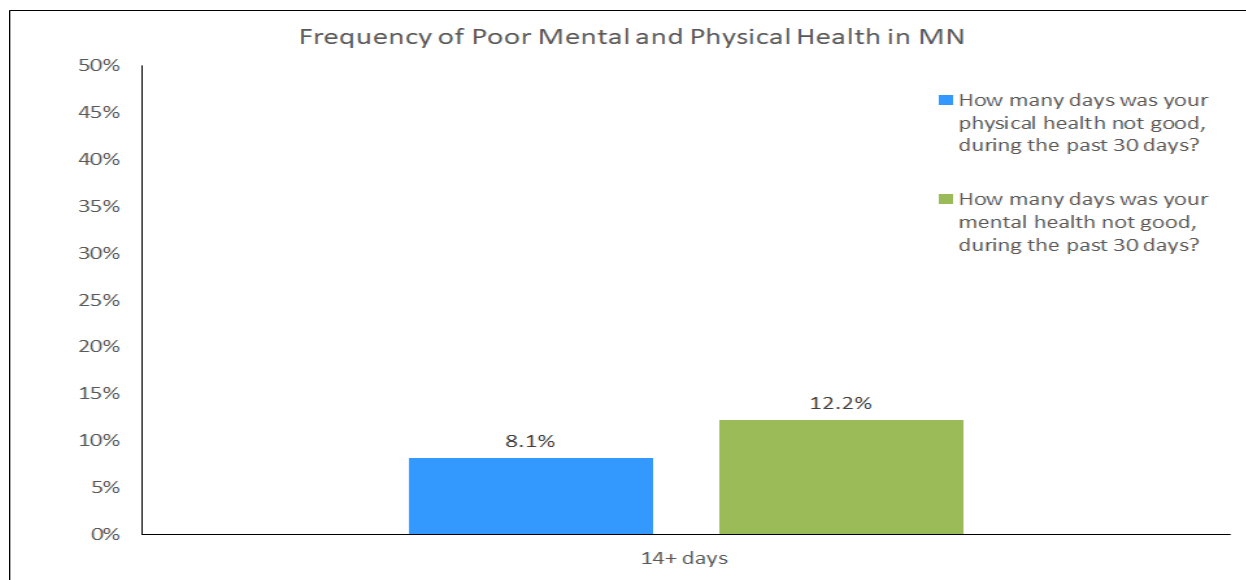
- Now thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?
- Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?
- During the past 30 days, for about how many days did poor physical or mental health keep you from doing your usual activities such as self-care, work, or recreation?

### Physical and Mental Well-being in Minnesota

In 2020, 71.8 percent of Minnesotans reported that during the past 30 days they had zero days in which their physical health was not good, and 60.6 percent of Minnesotans reported no days in which their mental health was not good [Figure 2]. Just over 12 percent reported their mental health was not good for 14 or more of the past 30 days.

In 2020, about 20 percent of Minnesota adults reported that their mental or physical well-being was not good for 14 or more days in the past 30 days.

<sup>3</sup> CDC Well-being Concepts, Health Related Quality of Life, <https://www.cdc.gov/hrqol/wellbeing.htm#four>. Accessed 09/10/2021

**Figure 2: Physical and Mental Health Well-being: Minnesota 2020**

Data Source: CDC Behavioral Risk Factor Surveillance System

## Obesity's Association with Physical and Mental Well-being

Research has found overweight and obesity to be associated with decreasing levels of both physical health and emotional well-being.<sup>4</sup> The 2020 BRFSS data show an association between obesity and both measures of physical and mental well-being. The association is stronger for physical than emotional dimensions<sup>4</sup>.

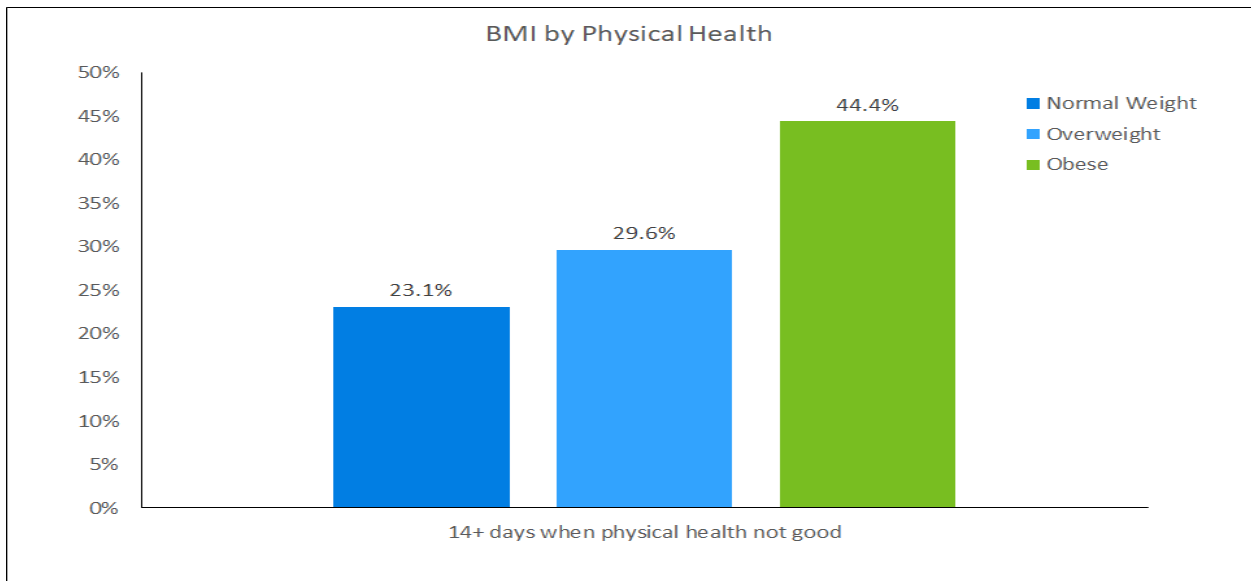
### Obesity and Physical Health

Higher numbers of adults in Minnesota who self-identified as being overweight and obese (23.1 and 44.4 percent respectively) reported their physical health was not good for 14 or more days during the last 30 days, [Figure 3].

Adults in Minnesota who reported being obese were nearly twice as likely than normal weight adults to report their physical health was not good for 14 or more days during the past 30 days [Figures 3].

<sup>4</sup> Doll HA, Petersen SE, Stewart-Brown SL. Obesity and physical and emotional well-being: associations between body mass index, chronic illness, and the physical and mental components of the SF-36 questionnaire. *Obes Res.* 2000 Mar;8(2):160-70. doi: 10.1038/oby.2000.17. PMID: 10757202.

**Figure 3: Number of days physical health was not good during the past 30 days by BMI, Minnesota 2020**



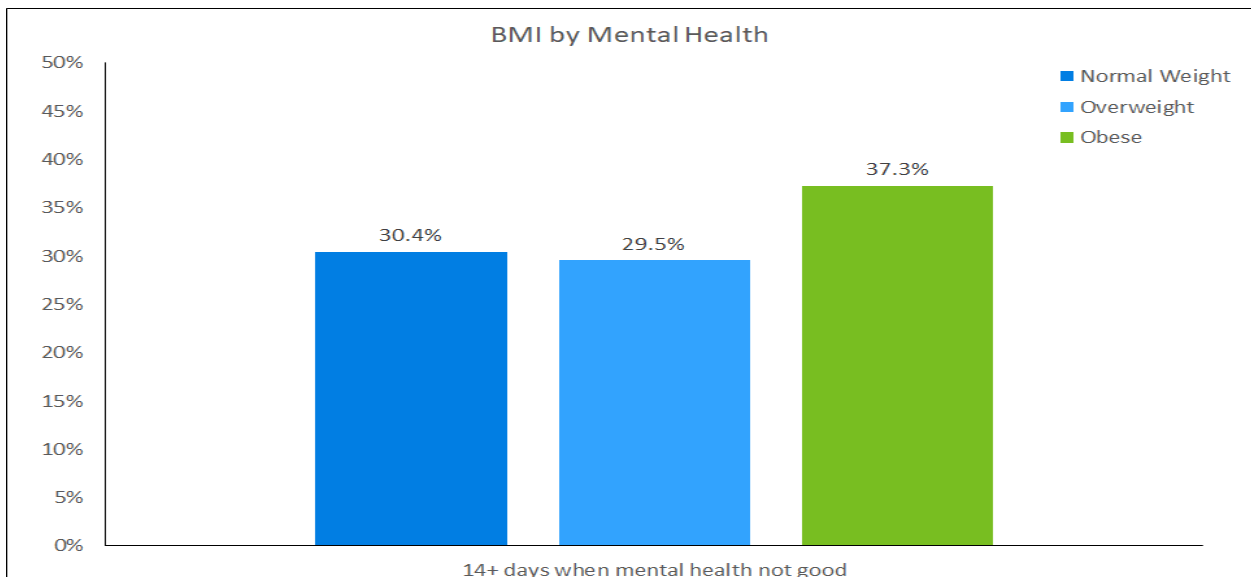
Data Source: CDC Behavioral Risk Factor Surveillance System

### Obesity and Mental Well-being

Regarding their mental health, 37.3 percent of obese adults in Minnesota reported their mental health was not good for 14 or more days during the past 30 days compared to 30.4 percent for normal weight adults and 29.5 percent for overweight adults [Figure 4].

More than one-third of obese adults in Minnesota report that their mental health was not good for 14 or more days during the past 30 days. Normal weight adults are almost as likely to have reported their mental health as not good for 14 or more days.

**Figure 4: Number of days mental health was not good during the past 30 days by BMI, Minnesota 2020**



Data Source: CDC Behavioral Risk Factor Surveillance System

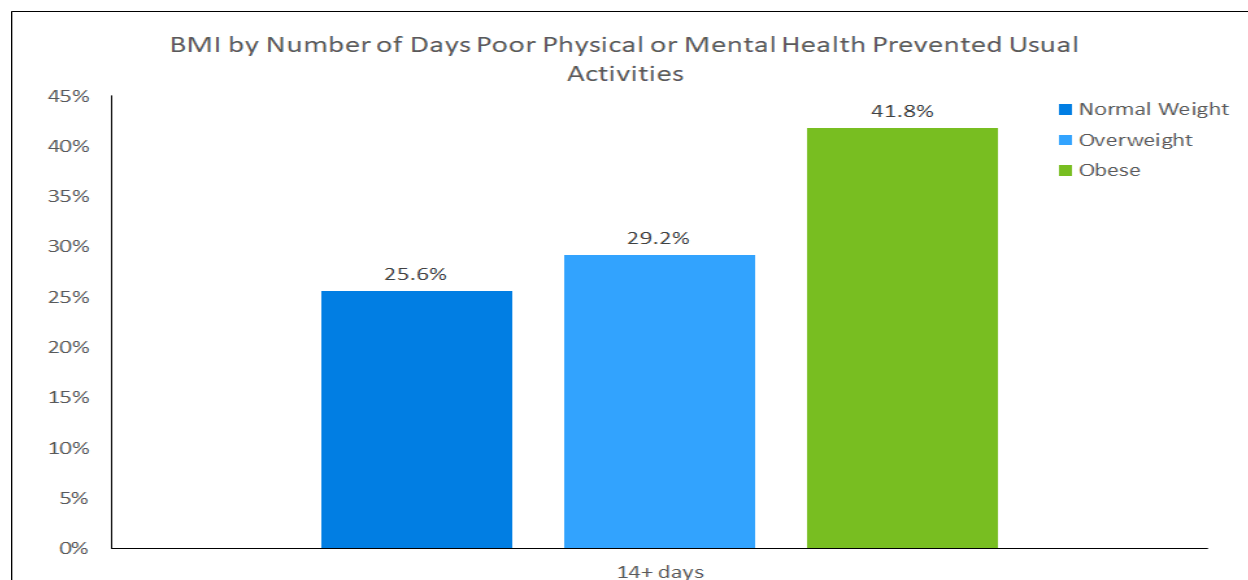
## Activity Limitations and Well-being

According to Healthy People 2020, limitation of activity refers to the reduction in a person's ability to perform his or her usual activities over a period of time. The ability to participate in daily activities is an important measure of the overall health and well-being of the population. Studies have shown a positive association between self-reported physical activity and health-related quality of life. In fact, a sedentary lifestyle is known to increase the risk of developing chronic health conditions such as cardiovascular diseases, hypertension, type 2 diabetes mellitus, colon and breast cancers, osteoporosis, depression, and backaches.<sup>5</sup>

In Minnesota, obese adults are more likely to report that physical or mental health has prevented usual activities (such as self-care, work, or recreation) as compared to adults who are normal weight or overweight. 41.8 percent of obese adults in Minnesota reported that that poor physical or mental health has prevented usual activities for *14 or more days* in the past 30 days compared to 25.6 percent for Minnesota adults who are normal weight [Figure 5].

41.8 percent of obese adults in Minnesota reported that that poor physical or mental health has prevented usual activities for *14 or more days* as opposed to 25.6 percent for Minnesota adults who are normal weight.

**Figure 5: Number of days poor physical or mental health prevented usual activities during the past 30 days by BMI, Minnesota 2020**



Data Source: CDC Behavioral Risk Factor Surveillance System

<sup>5</sup> Gerbi, Gemechu B et al. "Factors Associated with Self-Reported 14 or More Activity Limitation Days among Adults in the United States." *ARC journal of public health and community medicine* vol. 1,4 (2016): 5-11. doi:10.20431/2456-0596.0104002

## COVID-19's Impact on Well-being

COVID-19 has caused significant lifestyle disruption. Stay-at-home orders, social isolation, and loss of routines and supports have resulted in largely universal vulnerability to overeating, reduced physical activity level, and sedentary behavior. Additionally, stress related to COVID-19 and social isolation may place individuals at amplified risk for worsening depression symptoms and unhealthy coping strategies such as increased alcohol consumption and binge eating.<sup>6</sup>

U.S. studies indicate that:

- A majority of adults surveyed (61 percent) experienced undesired weight changes—weight gain or loss—since the pandemic started, with 42 percent reporting they gained more weight than they intended, gaining an average of 29 pounds.<sup>7</sup>
- When it comes to physical activity during the coronavirus outbreak, about one in four households (24 percent) report serious problems finding time to get physical activity or exercise, while about one in five (19 percent) report facing serious problems finding space to get physical activity or exercise while maintaining a safe distance from others during the coronavirus outbreak.<sup>8</sup>
- The COVID-19 pandemic has increased the risk of social isolation. Quarantine and social distancing are necessary measures to prevent the virus from spreading but also lead to elevated levels of loneliness and social isolation, which in turn produce physical- and mental-health related repercussions.<sup>9</sup>

## MDH Well-being Activities

MDH is implementing several programs to improve the well-being of Minnesotans including Statewide Health Improvement Initiative (SHIP). #StayConnectedMN, Mental Well-being, Resilience Learning Community, and the Suicide Prevention Program.

The **Office of Statewide Health Improvement Initiative's SHIP** added well-being to its programming in 2020. Local public health SHIP partners have expanded their work to include well-being in school, workplace, healthcare, and community settings. Activities include:

- Workplace: Build skills of managers to create a supportive environment around the mental health of employees and develop policies and systems that address mental health stigma.
- Schools: Implement school-based social and emotional learning programs and train staff to establish trauma-informed schools.

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<sup>6</sup> Hwang, T. J., Rabheru, K., Peisah, C., Reichman, W., & Ikeda, M. (2020). Loneliness and social isolation during the COVID-19 pandemic. *International psychogeriatrics*, 32(10), 1217–1220. <https://doi.org/10.1017/S1041610220000988>

<sup>7</sup> American Psychological Association. One year on: Unhealthy weight gains, increased drinking reported by Americans coping with pandemic stress. March 2021. <https://www.apa.org/news/press/releases/2021/03/one-year-pandemic-stress>. Accessed 08/06/2021.

<sup>8</sup> Robert Wood Johnson Foundation. The Impact of Coronavirus on Households Across America. September 2020. <https://www.rwjf.org/en/library/research/2020/09/the-impact-of-coronavirus-on-households-across-america.html>. Accessed 08/06/2021

<sup>9</sup> Hwang, T. J., Rabheru, K., Peisah, C., Reichman, W., & Ikeda, M. (2020). Loneliness and social isolation during the COVID-19 pandemic. *International psychogeriatrics*, 32(10), 1217–1220. <https://doi.org/10.1017/S1041610220000988>

- Health care: Implement Healthy Brain Initiative and assess of food and housing insecurity of clients
- Community: Assess well-being needs of community and implement well-being initiatives that equip community with the tools to improve their well-being.

SHIP also focuses on creating opportunities for healthy eating and physical activity, all of which enhance well-being. Activities include:

- Healthy eating: Expand and establish farmers markets and increasing healthy eating opportunities in schools, workplaces, and childcare settings.
- Physical activity: Assist communities to make their towns and cities more walkable and bikeable, and partner with schools, workplaces, and childcare settings to increase physical activity.

During the Spring of 2021, MDH launched the four-week social media mental well-being campaign toolkit, **#StayConnectedMN**. This plug and play campaign toolkit was used by faith communities, non-profits, and schools to facilitate communication around mental well-being, strengthen coping skills and encourage reaching to those around us.

MDH also lead leads the **Mental Well-being and Resilience Learning Community** a monthly opportunity for anyone who is interested in building resilience and promoting mental well-being. Participants learn about effective well-being strategies, share the well-being work, develop opportunities to partner with people in their communities, and plan community and state action plans. The learning community hosts Minnesota Thrives, a self-reported inventory of programs and initiatives that promote mental well-being and resilience in Minnesota communities.

The MDH **Suicide Prevention** Program provides training and programs to prevent suicides. The public health approach to these trainings and programs promote wellness, resilience and connectedness in all communities. Key partners include schools, coaches, faith communities, law enforcement, tribal nations, and health and behavioral health care practitioners. Programs and trainings include: Zero Suicide Framework, Question Persuade Refer (QPR) safeTalk, ASIST Mental Health First Aid, ACES, Kognito At-Risk for PK-12 Educators, and Kognito Friend 2 Friend.

## Links to MDH Well-being Activities

- Statewide Health Improvement Partnership Initiative: <https://www.health.state.mn.us/communities/ship/index.html>
- #StayConnectedMN Toolkit: <https://www.health.state.mn.us/communities/suicide/basics/stayconnectedmn.html>
- Mental Well-being and Resilience Learning Community: <https://www.health.state.mn.us/communities/mentalhealth/mnthrives.html>
- Minnesota Thrives: <https://www.health.state.mn.us/communities/mentalhealth/mnthrives.html>
- Suicide Prevention Program: <https://www.health.state.mn.us/communities/suicide/index.html>

## Technical Notes

### Obesity Definition

Obesity is an abnormal or excessive fat accumulation that may impair health<sup>10</sup>. Although there are a number of ways to measure fat accumulation, the most common population-level measure is a calculation based on weight and height called Body Mass Index (BMI)<sup>11</sup>. Using this system adult weight categories are defined<sup>12</sup> as:

- Normal weight: 18.5 to 24.9 kg/m<sup>2</sup>
- Overweight: BMI of 25.0 to 29.9 kg/m<sup>2</sup>
- Obese: BMI of 30 kg/m<sup>2</sup>.

### Data Source and Methods

#### Centers for Disease Control and Prevention Behavioral Risk Factor Surveillance System

The Behavioral Risk Factor Surveillance System (BRFSS) is an annual statewide random telephone and cellular surveillance survey designed by the Centers for Disease Control and Prevention (CDC). The survey is conducted in all 50 states and U.S. territories. BRFSS monitors modifiable risk behaviors and other factors contributing to the leading causes of morbidity and mortality in the population. Data from the BRFSS are useful for planning, initiating, and supporting health promotion and disease prevention programs at the state and federal level<sup>13</sup>. The survey has three sections:

- Standard Core Questions – Asked every year and are required by all states.
- Rotating Core Questions – Asked every other year and are required by all states.
- Optional Modules – Sets of standardized questions on various topics that each state may select and include in its questionnaire. Once selected, a module must be used in its entirety and asked of all eligible respondents.

Given the random selection of survey participants each year, the data collected each year are cross-sectional and do not follow a single group of individuals over time. This means that changes in estimates from year to year are affected by sample size and changes in demographics of survey respondents from year to year, and that determinations regarding changes in estimates must be made by examination of data trends over time

September 2021

<sup>10</sup> World Health Organization, Obesity and overweight. Fact sheet No. 311. Geneva: WHO, 2013. 2013.

<sup>11</sup> Snijder, M., et al., What aspects of body fat are particularly hazardous and how do we measure them? *International Journal of Epidemiology*, 2006. 35(1): p. 83-92.

<sup>12</sup> CDC BRFSS Prevalence Trends, BMI Categories, <https://www.cdc.gov/brfss/brfssprevalence/>. Accessed 09/13/2021.

<sup>13</sup> Centers for Disease Control and Prevention, The BRFSS Data User Guide, D.o.P.H. National Center for Chronic Disease Prevention and Health Promotion, Editor. 2018. p. 10.