

# Trends in Obesity Among New Jersey Emergency Department Visits

The COVID-19 pandemic had an indirect impact on a wide-range of health outcomes, including obesity. The association between the COVID-19 pandemic and increases in the prevalence of obesity, particularly childhood obesity, has garnered significant interest among researchers.

The closures of childcare centers and schools caused major disruptions not only to students' educations, but to food accessibility, such as school breakfast and school lunch programs, and physical activity, including physical education and recess. In addition, student recreational sports were canceled or unavailable. The loss of structured activities; increased isolation due to lockdowns; job layoffs; and the psychological stress of potentially contracting and spreading the virus may have contributed to not only unhealthy eating habits but to more sedentary lifestyles as well.<sup>1-2</sup> For families already at an increased risk for obesity, the pandemic appears to have had a disproportionate toll on weight gain as the pandemic exacerbated factors that could lead to food insecurity.

## Impact of the Pandemic on Childhood Obesity

Childhood obesity is particularly concerning as it may lead to potentially chronic, even life-long, health illnesses. The Mayo Clinic found that "childhood obesity is a serious medical condition that ... often start children on the path to health problems that were once considered adult problems — diabetes, high blood pressure and high cholesterol. Childhood obesity can also lead to poor self-esteem and depression."<sup>3</sup> Obesity can impair major organ systems, and children who are overweight or obese have greater odds of carrying that excess weight into adulthood, increasing the risk for other diseases<sup>4</sup>.

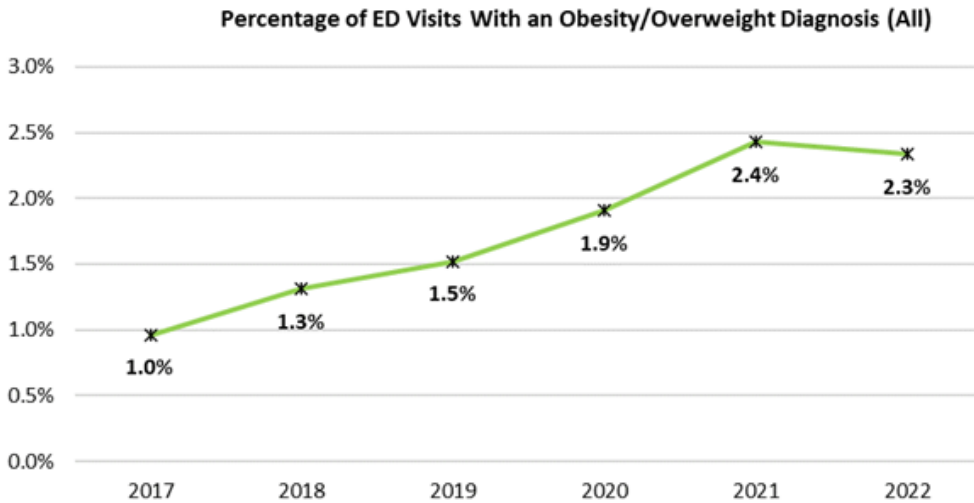
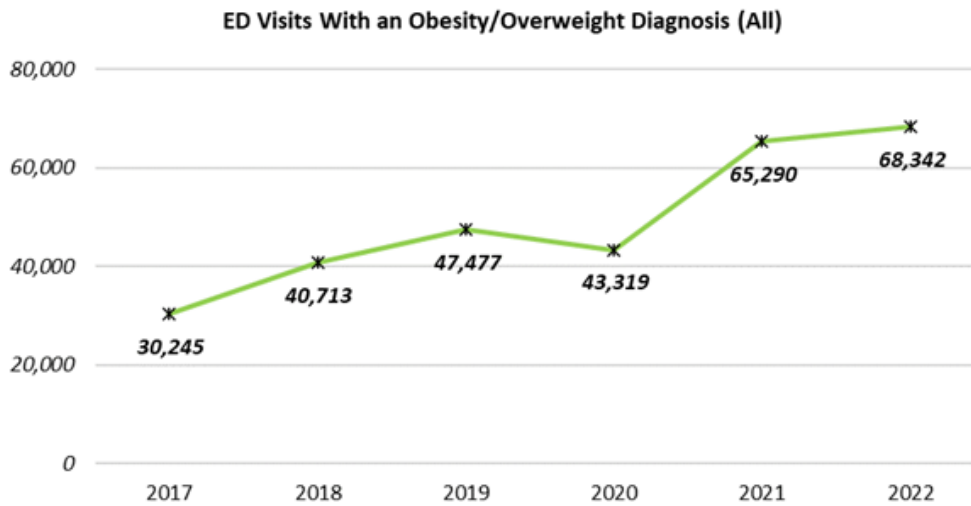
The Centers for Disease Control (CDC) estimates that 19.7 percent of children and adolescents aged 2 to 19 (14.7 million) were obese in United States from 2017 through 2020.<sup>5</sup> The prevalence of obesity among this age group increased from 13.9 percent in 1999 through 2000 to 19.3 percent in 2017 through 2018, while severe obesity increased from 3.6 to 6.1 percent, respectively.<sup>6</sup>

According to a 2021 report by the CDC that analyzed body mass index (BMI) data from over 432,300 children and teens (aged 2 to 19), obesity among this study cohort increased from 19.3 percent in the summer of 2019 to 22.4 percent a year later in 2020.<sup>7</sup> The study notes that the BMI of those with moderate or severe obesity prior to the pandemic increased at a significantly higher rate during the pandemic compared with those of healthy weight. Another study that looked at health records from over 190,000 children in California found that the percentage of 5 to 11-year-olds that were either overweight or obese increased from 36.2 percent prior to the pandemic to 45.7 percent during the pandemic (March 2020 -January 2021).<sup>8</sup>

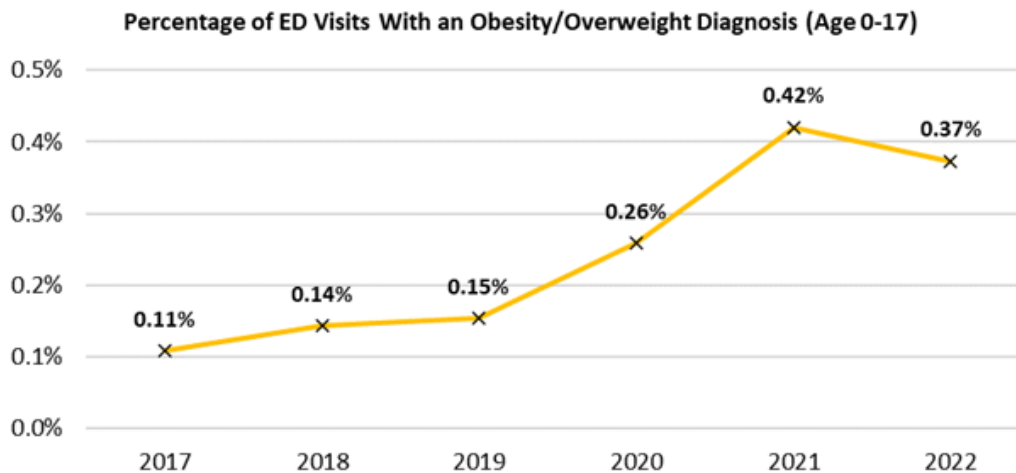
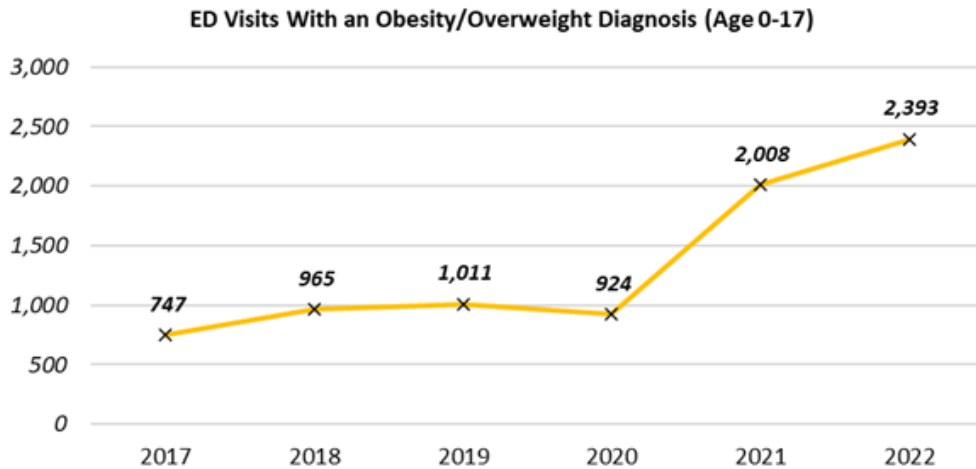
## Obesity Trends Among New Jersey ED Visits

Using New Jersey’s Hospital Discharge (or medical claims) data, this report examined the prevalence of obesity and overweight diagnoses among emergency department (ED) patients in New Jersey’s acute-care hospitals in the years before and after the peak of the COVID-19 pandemic in the state (ICD-10 codes under E66).

This report found that the proportion of all ED visits with an obesity/overweight diagnosis increased by approximately 126 percent from 2017 to 2022 (from 1.0 to 2.3 percent, representing over 30,000 visits in 2017 and over 68,000 visits in 2022).



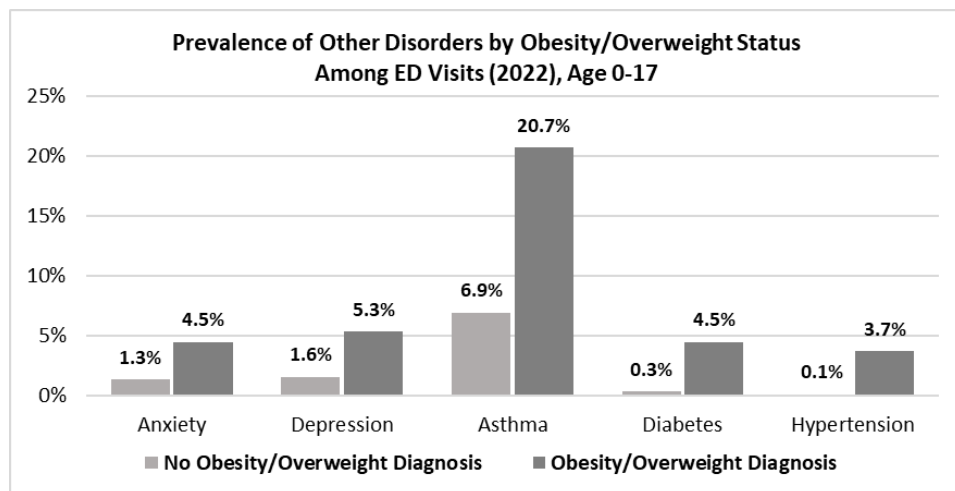
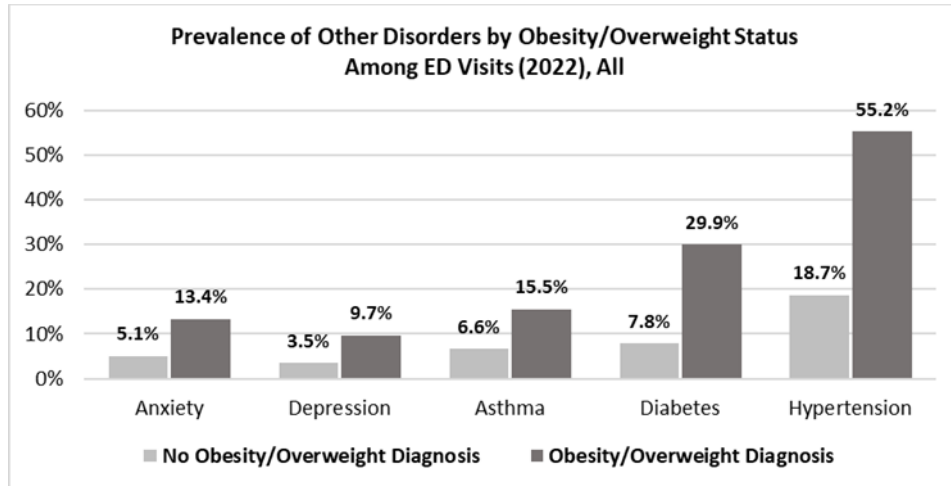
Among patients under 18, the increase was even sharper, 236 percent (from 0.11 to 0.37 percent, representing 747 visits in 2017 and 2,393 visits in 2022).



In 2020, the number of ED visits with an obesity/overweight diagnosis decreased slightly compared with 2019, among all age groups. During this same period, the percentage of ED visits with an obesity/overweight diagnosis continued to trend upward. The 2020 decrease in number may have been a result of the overall decrease in ED visits as New Jersey residents avoided or delayed care at hospitals during the peak year of the pandemic, given that the percentage increase continued.

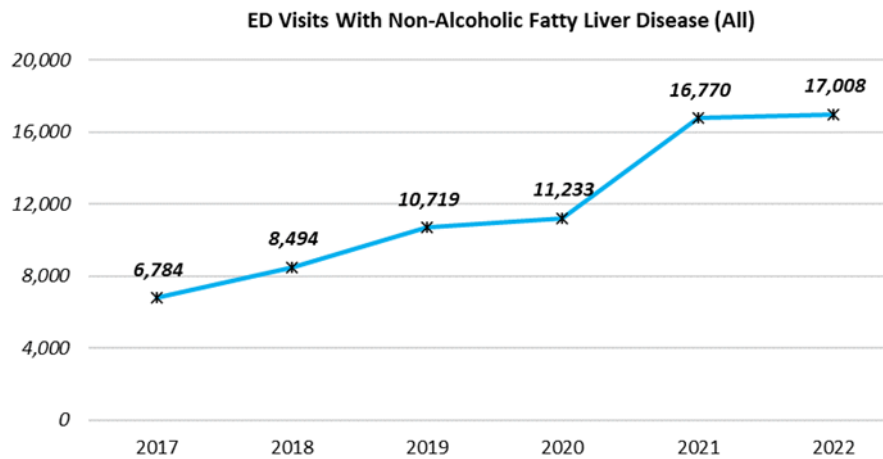
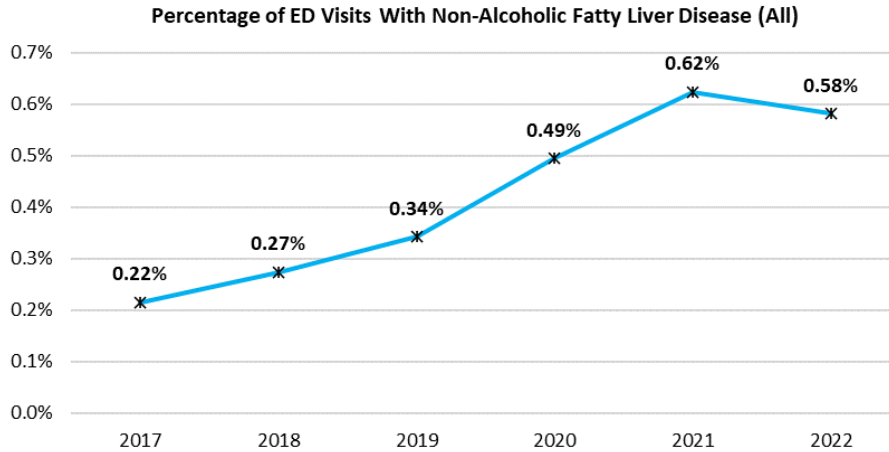
As obesity is often associated with other negative health outcomes, both physical and psychological, this report also looked at the prevalence of other major conditions among those with and without an obesity/overweight diagnosis. A larger proportion of ED visits with an obesity/overweight diagnosis also had a diagnosis for asthma, depression, anxiety, diabetes, and hypertension. Compared with all age groups, those aged 0 to 17 had lower prevalences of all the above-mentioned disorders (regardless of obesity/overweight status) – with the exception of asthma – as such disorders tend to be less common among younger age groups. Per the CDC and the National Institute of Mental Health (NIMH), the prevalence of pediatric depression and anxiety are half that of the adult prevalence.<sup>9-11</sup> Pediatric hypertension rates are only one tenth of the adult rate. However, those under 18 with an obesity/overweight diagnosis still had higher prevalence of depression, anxiety, diabetes, and hypertension.

For example, diabetes among those with an obesity/overweight diagnosis in the 0 to 17 age group was almost 15 times more prevalent compared with those without a diagnosis (4.5 versus 0.3 percent, respectively). When looking at visits among all ages, diabetes – although much more common in both groups – was only 3.8 times as prevalent among those with an obesity/overweight diagnosis (29.9 versus 7.8 percent, respectively). The risk of potentially chronic illnesses is therefore particularly concerning among children who are obese or overweight.



This paper also looked at trends in non-alcoholic fatty liver disease (NAFLD), a liver condition that occurs as an effect of excess fat build up in the liver. Those with NAFLD do not often experience symptoms; however, they may be at an increased risk of more severe liver diseases including non-alcoholic steatohepatitis, cirrhosis, and even liver failure.<sup>12-13</sup> While obesity or being overweight are not the only risk factors for NAFLD, they are commonly associated with the disease. The proportion of ED visits with a NAFLD diagnosis nearly tripled from 2017 to 2022 (0.2 versus 0.6 percent, respectively). While slightly over 6,700 ED visits had a diagnosis for NAFLD in 2017, this number increased to over 17,000 in 2022.

While not examined in this paper, there appears to be an increasing concern over the prevalence of NAFLD among children and teens. NAFLD is the leading cause of liver disease among children today, affecting up to 38 percent of children with obesity in the United States.<sup>14</sup> According to a Washington Post analysis of insurance claims data, the number of children, 0-17, being diagnosed and treated for NAFLD in the U.S. increased by approximately 168 percent from 2017 to 2021.<sup>15</sup> The age group with the next largest increase (68 percent) was those aged 18 to 44. This indicates that the prevalence of NAFLD may be increasing at a much faster rate among children and young adults.



## Discussion

The prevalence of obesity/overweight diagnoses was increasing prior to the pandemic and may have therefore continued to have increased regardless of the pandemic. There were clear upticks in the prevalence of obesity/overweight diagnoses in 2021, especially among those under 18. Providers may have become more diligent about recording obesity and overweight disorders in patients' medical claims over the past years. However, as body mass index is not required to be reported on patients' claims in New Jersey, the true prevalence of obesity among ED patients may currently be understated.

These findings, particularly among children, are concerning as obesity or being overweight can have significant, life-long health consequences which lead to various comorbidities. The increasing prevalence of obesity/overweight diagnoses among the ED population may also mean that hospitals are caring for patients with more severe health issues or those with a higher number of chronic conditions due to their obesity/overweight status.

The ubiquity of processed and ultra-processed foods high in fat, sugar, and salt – which are often priced lower than healthier alternatives – often become the staple of many children's diets from young ages, especially among lower-income families who have neither the resources – in regard to both money and time – for healthier replacements. Per the National Institute of Health (NIH), healthier food options can cost nearly twice as much as unhealthier foods, per serving on average.

According to Community FoodBank of New Jersey, over 175,000 children in New Jersey (approximately 7.8 percent) are food insecure in New Jersey.<sup>16</sup> Providing healthy school-meal options to children may help to combat issues around food insecurity during the school year. However, school breaks interrupt access to food security. New Jersey is one of

35 states that will participate in the United States Department of Agriculture's efforts to combat summer hunger with an electronic benefits transfer of \$40 each month, up to \$120, for each eligible school-aged child for groceries, starting in summer 2024.

Participation in federal food aid programs such as the Special Supplemental Nutrition Program for Women, Infant, and Children (WIC), can also be a vital resource for many food-insecure families. In 2020, over 133,000 women and children (up to age 4) were enrolled in WIC in the state.<sup>17</sup> That number, however, amounted to only 49 percent of total eligible individuals. According to the CDC, there were significant declines in obesity among children ages 2 to 4 enrolled in WIC in the United States from 2010 through 2020.<sup>18</sup> New Jersey was one of five states with the largest declines (over 3 percent).<sup>19</sup>

A study published in December 2023 found that obesity rates were lower in kindergarten through 12th grade school aged children – located in four low-income New Jersey cities – with nearby grocery stores, convenience stores participating in healthy community initiatives, and those with healthier school-meal options compared with those whose school and community environments offered less healthy and more limited food options.<sup>20</sup>

ED hospital trends in this study, and the recent reports referenced in this study about obesity/overweight among school-aged children, depict an evolving perspective on obesity/overweight. This study highlights the complexities observed in the obesity/overweight diagnosis code, stemming from genetic, socio-economic, and environmental factors. The future health impacts to school-aged children of this diagnosis indicate the importance of public health interventions today to reduce the burden of chronic disease in the future.

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