OBESITY ICD-10-CM CODES: A PROPOSAL FOR IMPROVEMENT

Brook Belay, MD MPH – Centers for Disease Control and Prevention

William Dietz, MD PhD – Milken Institute School of Public Health

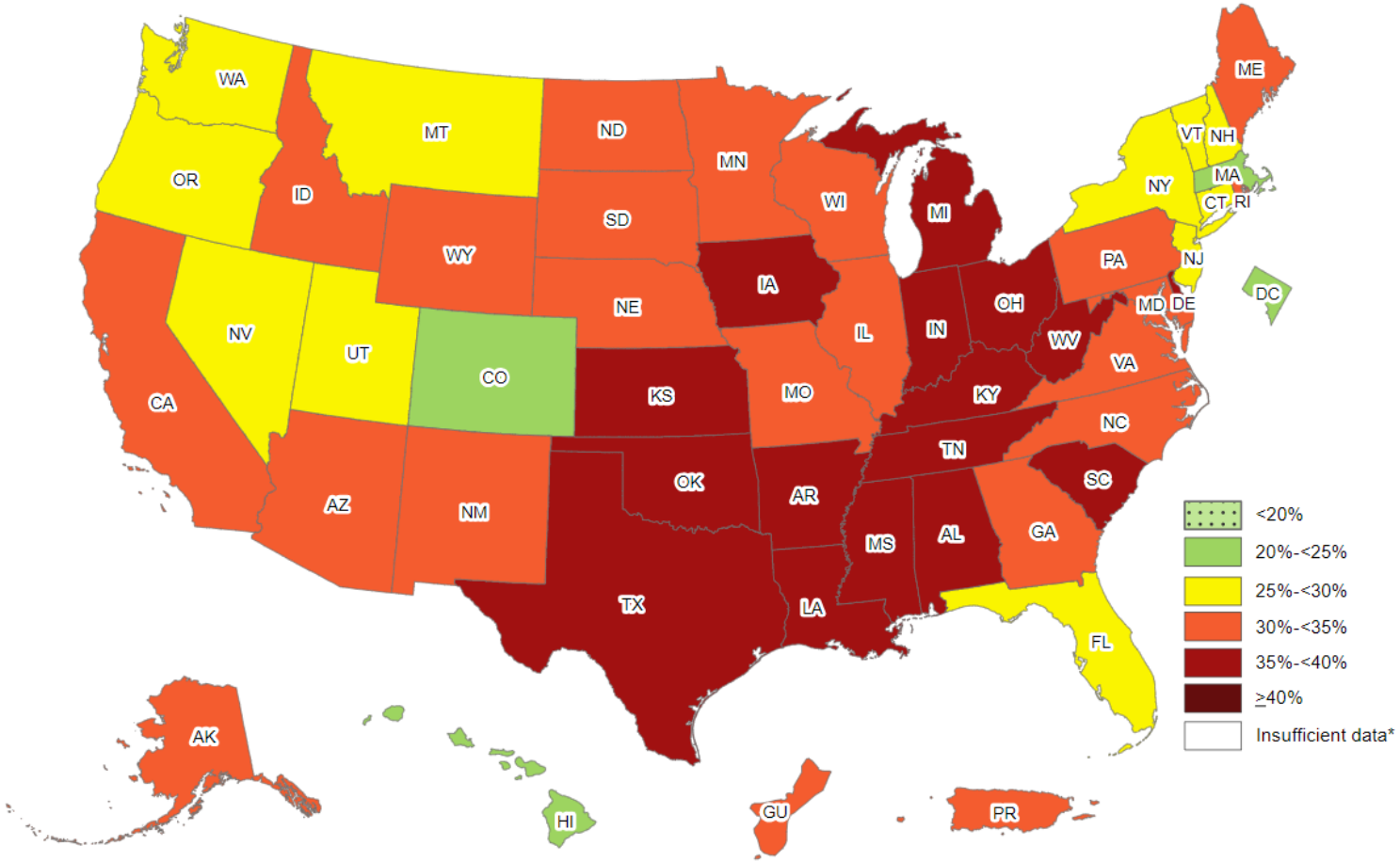
Donna Ryan, MD – Pennington Biomedical Research Center. World Obesity Federation.

Christine Gallagher – Milken Institute School of Public Health. STOP Obesity Alliance.

AGENDA

- Background
- Rationale: Problem Statement
- Proposal
- Partners

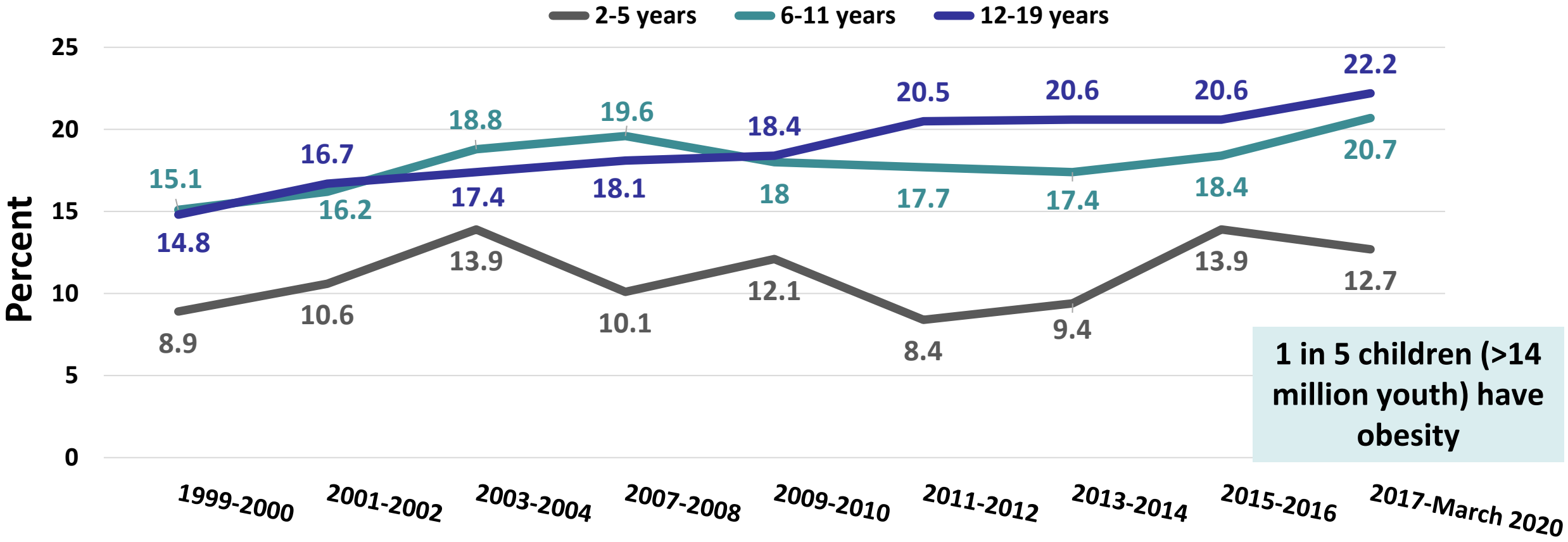
PREVALENCE OF SELF-REPORTED OBESITY AMONG U.S. ADULTS BY STATE AND TERRITORY, BRFSS, 2020



CDC DATA SHOW THAT ADULT OBESITY PREVALENCE CONTINUES TO RISE ACROSS THE U.S.

CHILDHOOD OBESITY IS HIGH AMONG ALL AGE GROUPS

Prevalence of Obesity in U.S. Youth 2-19 Years, 1999-2000 through 2017-March 2020



1 in 5 children (>14 million youth) have obesity

IMMEDIATE AND FUTURE HEALTH RISKS

13 types of cancer
(Including liver cancer)

Adult obesity

Bullying, stigma
Lower self-reported quality of life

Musculoskeletal and joint problems

Lower self-esteem
Anxiety, depression

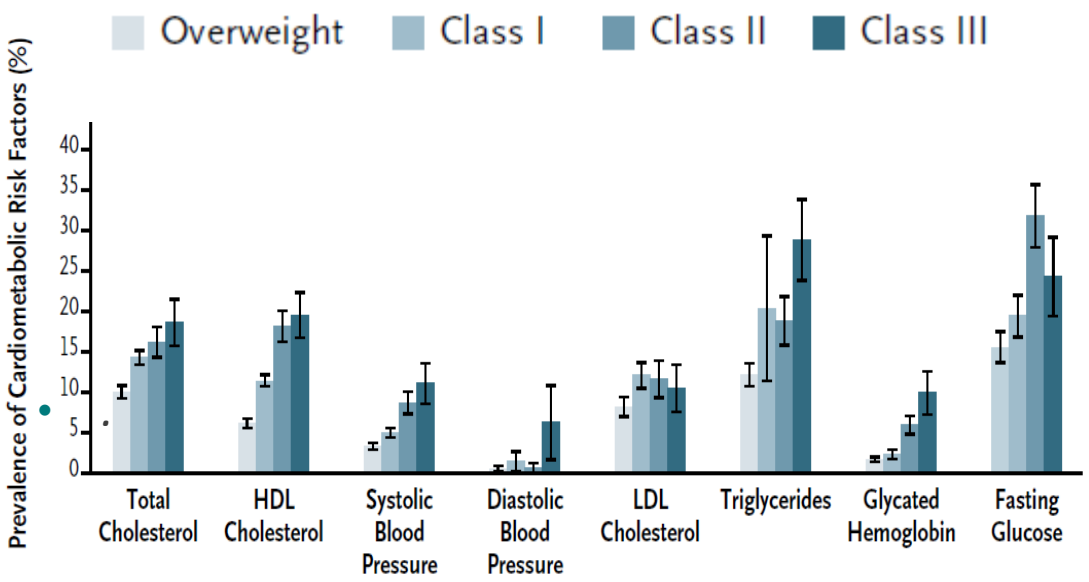
High blood pressure
High cholesterol
Heart disease

Breathing problems

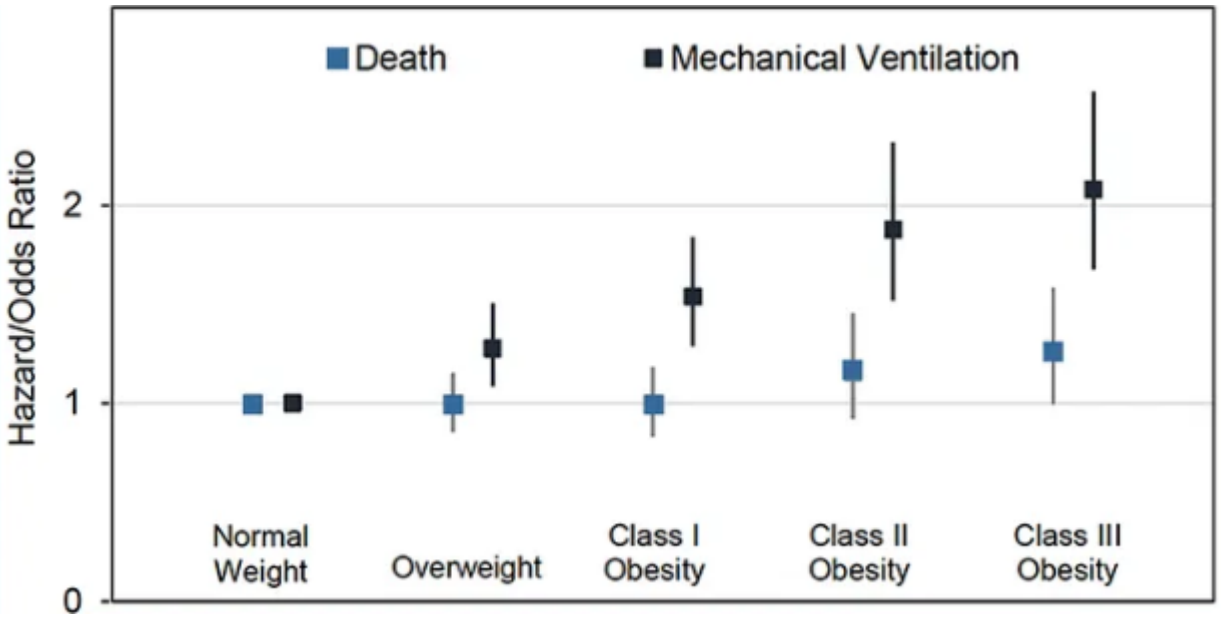
Fatty liver disease

Impaired glucose tolerance
Insulin resistance
Type 2 diabetes

Kidney disease



Skinner et al. NEJM 2015



Hendren et al. Circulation 2021

OBESITY: COMORBIDITIES AND SEVERE OUTCOMES

E66.01 and Our Culture of Shame

Scott Hagan, M.D.

"You're going to be disappointed in me!" was how he opened our visit.

The problem list included nonalcoholic steatohepatitis, atrial fibrillation, and a body-mass index (BMI) of 42 standing in the way of his candidacy for knee replacement. Having faithfully committed to a structured weight-loss program for the previous year, my patient had initial success, but most of the pounds came back. "I know, I know, it's no good. I have been bad lately," he confessed with a sheepish grin.

Metabolic surgery was off the table. One of his relatives had had a severe complication, and he didn't want to take that risk. We discussed the promising new option of an injectable glucagon-like peptide 1 (GLP-1) analogue. "A shot to lose weight?" he asked skeptically, but eventually he agreed to try it.

The request for a nonformulary drug required an associated *International Classification of Diseases, 10th Revision* (ICD-10) diagnosis. Groaning as I typed "obesity," I knew the search result I would select: "morbid (severe) obesity due to excess calories" (E66.01). Although "other obesity" (E66.8) and "obesity, unspecified" (E66.9) were also options, they lacked a more precise obesity classification, and I worried that they might not be convincing enough to justify an authorization for an expensive drug.

Pont SJ et al. Pediatrics 2017; 140(6): e20173034
Hagan S. NEJM 2021; 385 (25): 2307.

STIGMATIZATION

RATIONALE: PROBLEM STATEMENT

- **Childhood-specific**
  - *Percentile-based BMI classification:* Use of adult cut-offs in children leads to incorrect categorization of weight status.
- **Adult-specific**
  - *Classification*: Use of weight status categorization system is critical.
- **General**
  - *Current pathophysiological understanding*: Obesity is a complex, inflammatory disease not limited to energy intake excess. "Energy imbalance" is a more accurate reflection.
  - *Taxonomic*: Alveolar hypoventilation represents a limited diagnostic set.
  - *Stigmatization:* Obesity is a heavily stigmatized disease. Terms like 'morbid,' negatively affect health-seeking behavior and outcomes and are not used to describe other chronic diseases, like cancer. Preferable terms are 'severe obesity' and phrases such as "individuals *with obesity."*

PROPOSAL

- **Childhood specific BMI categories:**
  - Overweight: BMI $\geq 85^{th}$ percentile to $<95^{th}$ percentile for age and gender
  - Obesity: BMI $\geq 95^{th}$ percentile for age and gender
  - Severe obesity: BMI $\geq$120% above the 95th percentile for age & gender
- **Adult BMI categories:**
  - Overweight: BMI 25-29.9 kg/m^2
  - Obesity Class I: BMI 30.0-34.9 kg/m^2
  - Obesity Class II: BMI 35.0-39.9 kg/m^2
  - Obesity Class III: BMI Above 40 kg/m^2
- **Update pathophysiological understanding**
- **Use preferred, stigma-free terminology**

PARTNERS

- STOP Obesity Alliance
- American Academy of Pediatrics
- The Obesity Society
- Obesity Action Coalition
- Obesity Care Advocacy Network
- American Society for Metabolic and Bariatric Surgery
- National Association of Community Health Centers (NACHC)
- Alliance Chicago

QUESTIONS

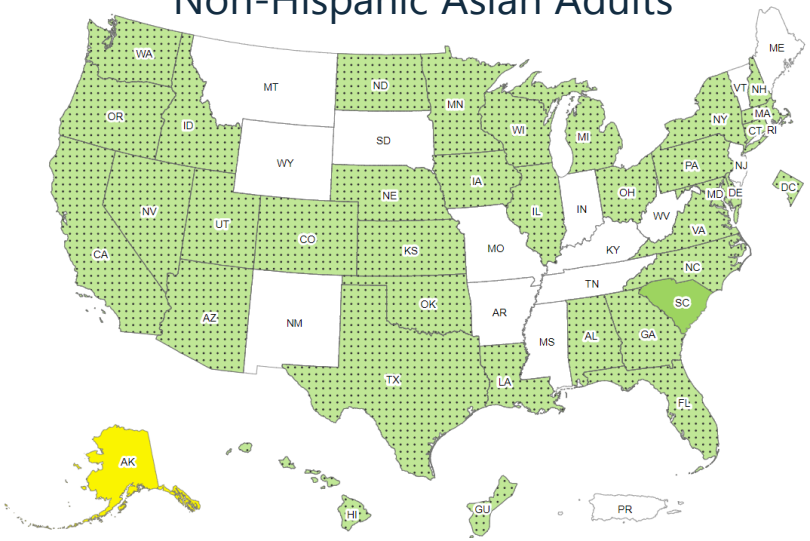
- bbelay@cdc.gov
- dietzwcd4@gmail.com
- donna.ryan@pbrc.edu
- cqgallagher@email.gwu.edu

REFERENCES

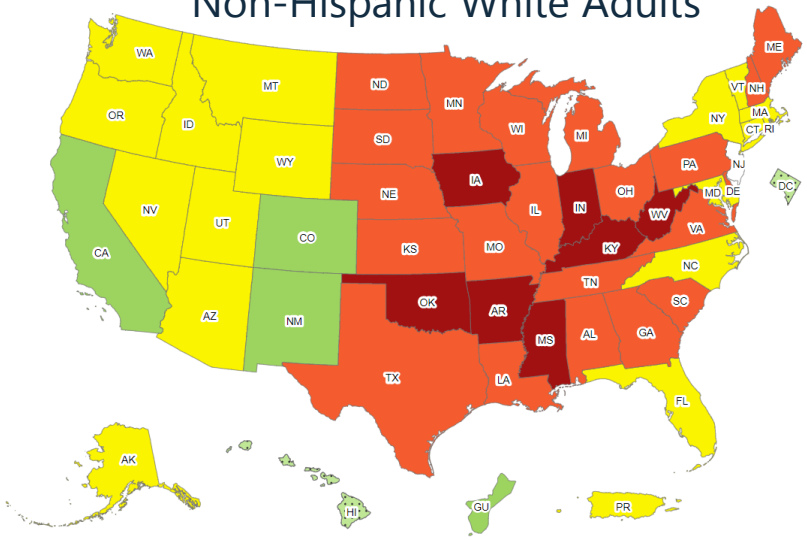
- Mechanick JI, Garber AJ, Handelsman Y, et al. American Association of Clinical Endocrinologists' position statement on obesity and obesity medicine. Endocr Pract 2012; 18: 642-648.
- Centers for Disease Control and Prevention. Defining childhood obesity. Available at: Defining Childhood Obesity | Overweight & Obesity | CDC. Accessed September 2022.
- Centers for Disease Control and Prevention. Childhood overweight and obesity. Available at: Childhood Overweight & Obesity | Overweight & Obesity | CDC. Accessed September 2022.
- Ogden CL, Fryar CD, Martin CB, et al. Trends in obesity prevalence by race and Hispanic origin-1999-2000 to 2017-2018. JAMA 2020; 324(12): 1208-1210.
- Singh AS, Mulder C, Twisk JW, et al. Tracking of childhood overweight into adulthood: a systematic review of the literature. Obes Rev 2008; 9(5):474-88.
- Li X, Keown-Stoneman CDG, Lebovic G, et al; TARGet Kids! Collaboration. The association between body mass index trajectories and cardiometabolic risk in young children. Pediatr Obes 2020; 15(8): e12633.
- Skinner AC, Perrin EM, Moss LA, et al. Cardiometabolic risks and severity of obesity in children and young adults. NEJM 2015; 373(14): 1307-17.
- Herman-Edelstein M, Weinstein T, Chagnac A. Obesity-Related Glomerulopathy: Clinical Management. Semin Nephrol 2021; 41(4): 358-370.
- Kelly B, West J, Yang TC, et al. The association between body mass index, primary healthcare use and morbidity in early childhood: findings from the Born In Bradford cohort study. Public Health 2019; 167:21-27.
- Umer A, Kelley GA, Cottrell LE, et al. Childhood obesity and adult cardiovascular disease risk factors: a systematic review with meta-analysis. BMC Public Health 2017; 17(1): 683.
- Moradi M, Mozaffari H, Askari M, et al. Association between overweight/obesity with depression, anxiety, low self-esteem, and body dissatisfaction in children and adolescents: a systematic review and meta-analysis of observational studies. Crit Rev Food Sci Nutr 2020; 1-16.
- Pont SJ, Puhl R, Cook SR, et al, AAP Section on Obesity. Stigma experienced by children and adolescents with obesity. Pediatrics 2017; 140(6): e20173034
- Kompaniyets L, Lundeen EA, Belay B, et al. Hospital length of stay, charges, and costs associated with a diagnosis of obesity in US children and youth, 2006-2016. Med Care 2020; 58(8): 722-726.
- O'Connor EA, Evans CV, Burda BU, et al. Screening for obesity and intervention for weight management in children and adolescents: evidence report and systematic review for the US Preventive Services Task Force. JAMA 2017; 317(23): 2427-2444.
- Borner KB, Canter KS, Lee RH, et al. Making the business case for coverage of family-based behavioral group interventions for pediatric obesity. J Pediatr Psychol 2016; 41(8): 867-78.
- Walsh CO, Milliren CE, Feldman HA, et al. Sensitivity and specificity of obesity diagnosis in pediatric ambulatory care in the United States. Clin Pediatr 2013; 52(9): 829-35.

PREVALENCE OF SELF-REPORTED OBESITY AMONG U.S. ADULTS

Non-Hispanic Asian Adults



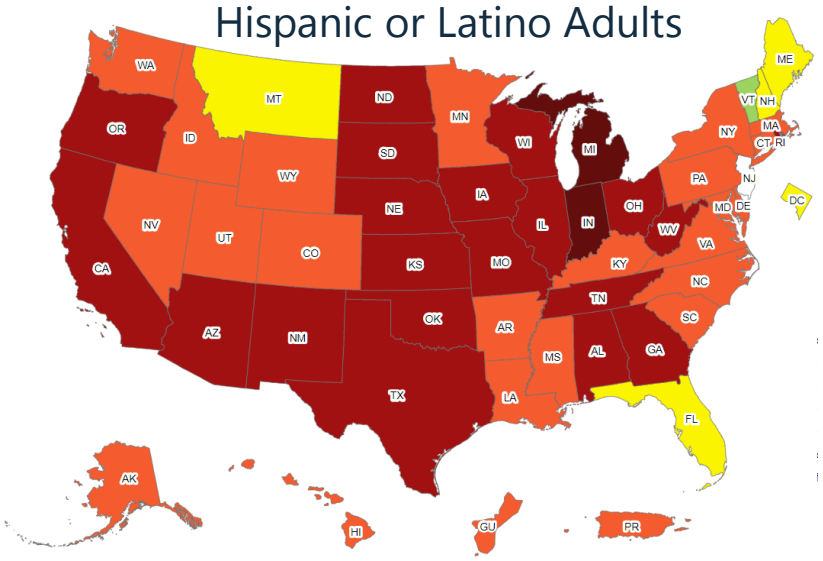
Non-Hispanic White Adults



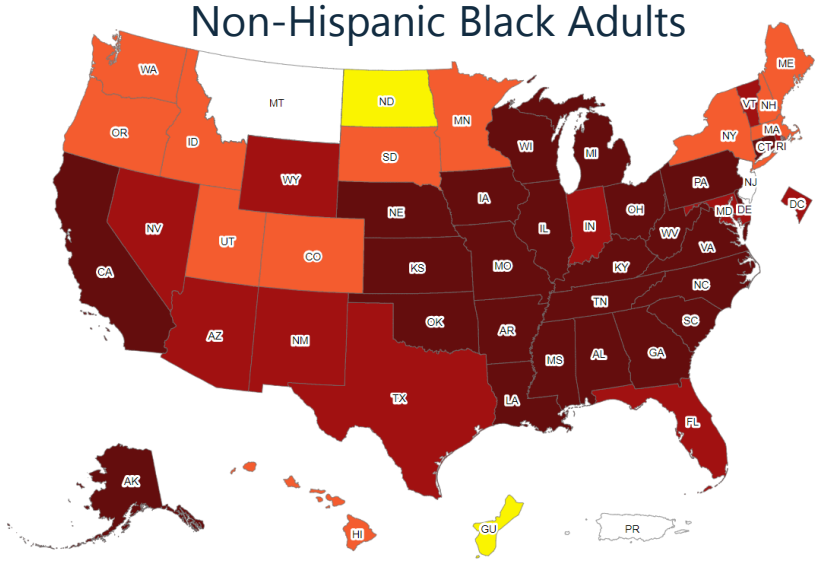
LEGEND

- <20%
- 20%-<25%
- 25%-<30%
- 30%-<35%
- 35%-<40%
- ≥40%
- Insufficient data*

Hispanic or Latino Adults



Non-Hispanic Black Adults



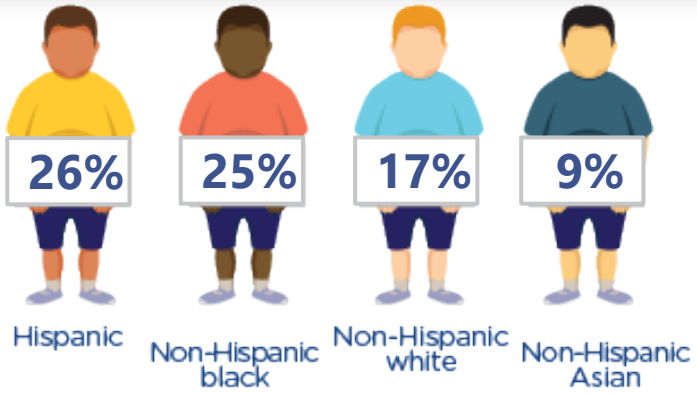
BY RACE/ETHNICITY, STATE AND TERRITORY, BRFSS, 2018-2020

Source: Obesity Maps – https://www.cdc.gov/obesity/data/prevalence-maps.html

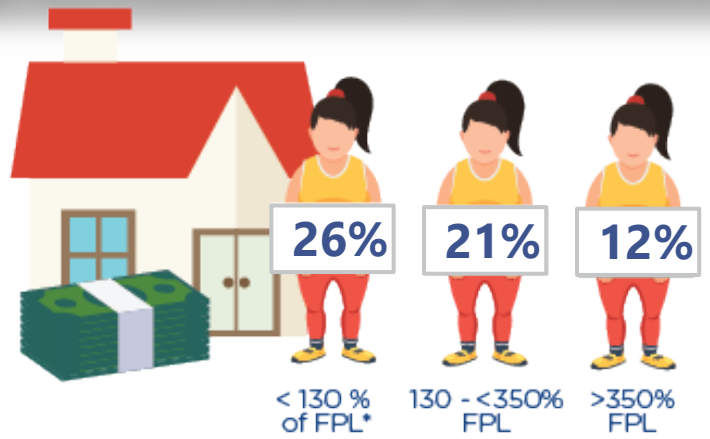
DISPARITIES IN CHILDHOOD OBESITY

Obesity Among Children and Adolescents aged 2-19 years, National Health and Nutrition Examination Survey

By Race and Ethnicity



By Household Income



By Metropolitan Status

21.7%
9.4% severe obesity

17.1%
5.1% severe obesity