Obesity and Diabetes among American Indian and Alaska Native Children: “Hey, I’m just Husky!”




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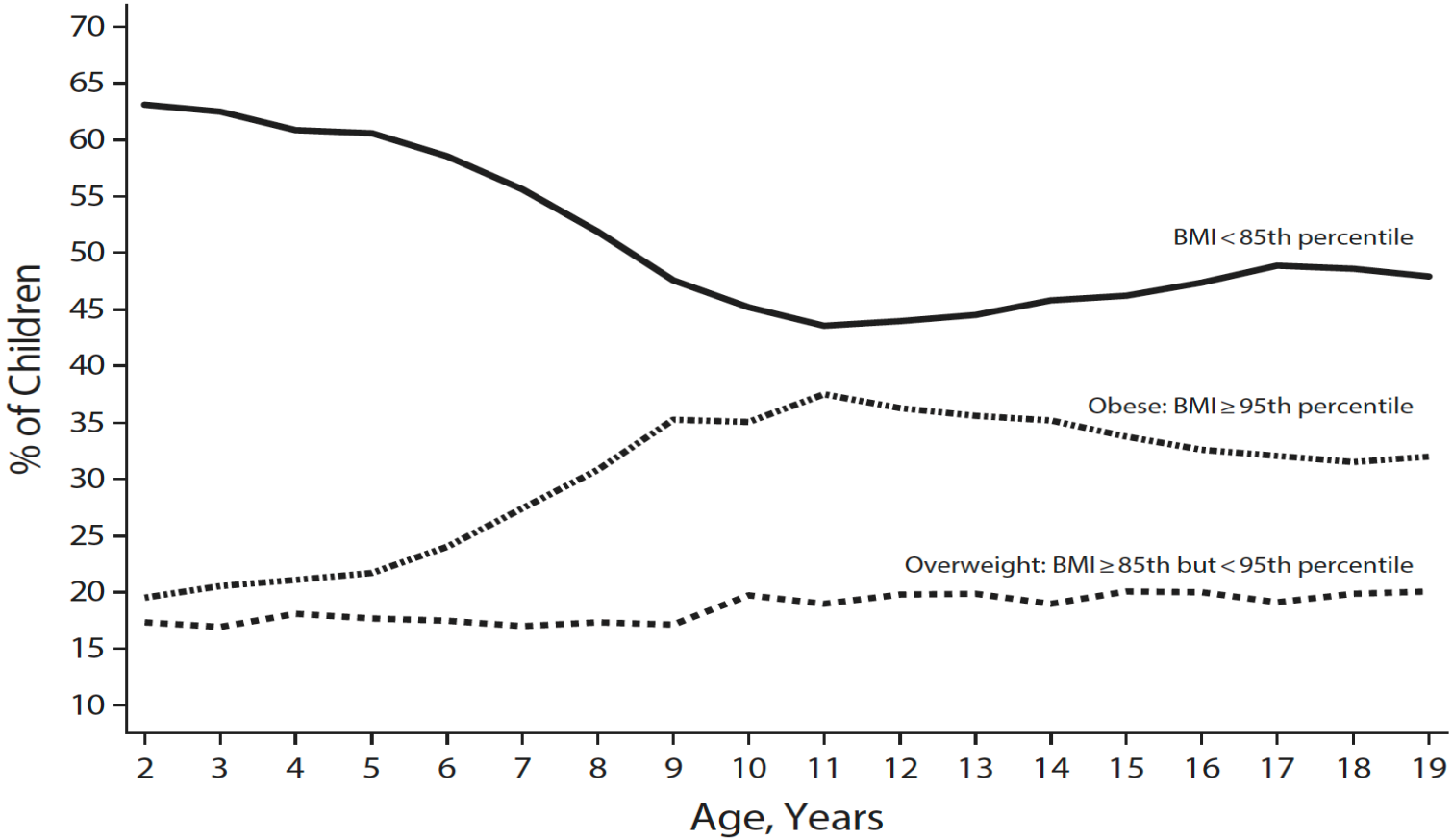
Overweight and Obesity in American Indian and Alaska Native Children

- Data from the Indian Health Service National Data Warehouse. At least 184,000 American Indian and Alaska Native children aged 2 to 19 years had body mass index data for each year studied, 2006 to 2015.[1] Body mass index percentiles with the 2000 Centers for Disease Control and Prevention growth charts.
- In 2015, the prevalence of overweight and obesity in American Indian and Alaska Native children aged 2 to 19 years was 18.5% and 29.7%, respectively.
- Boys had higher obesity prevalence than girls (31.5% vs 27.9%).
- Children aged 12 to 19 years had a higher prevalence of overweight and obesity than younger children.
- American Indian and Alaska Native children had a higher prevalence of obesity than US children overall in the National Health and Nutrition Examination Survey.

[1]Body mass index percentiles with the 2000 Centers for Disease Control and Prevention growth charts.

Bullock A, Sheff K, Moore K, Manson S, Obesity and overweight in American Indian and Alaska Native children, 2006–2015, *Am J Public Health* 107, no. 9 (September 1, 2017): pp. 1502-1507.

Body Mass Index Category for American Indian and Alaska Native Children by Year of Age for Fiscal Year 2015, United States



Note. BMI = body mass index (defined as weight in kilograms divided by the square of height in meters).

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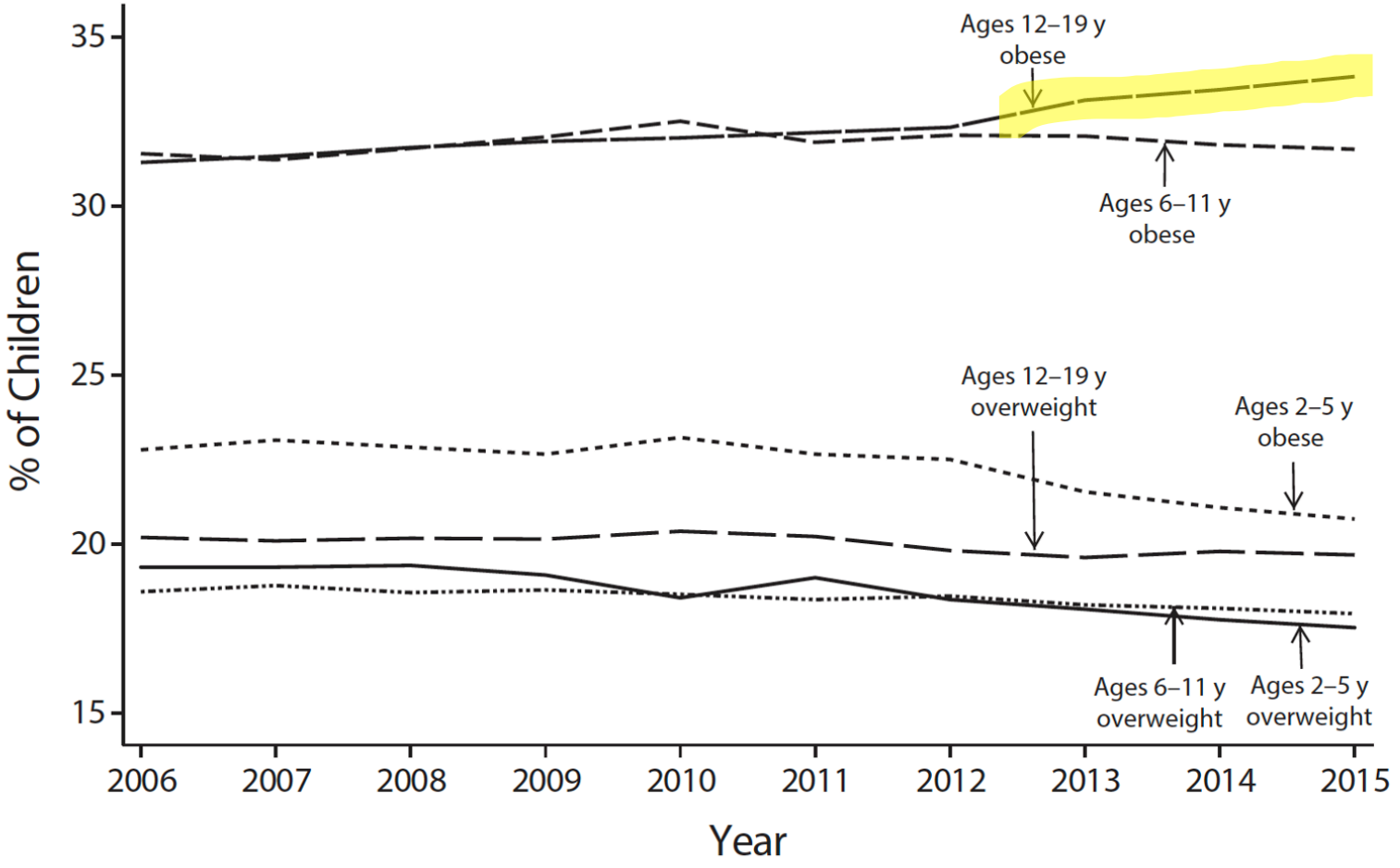
Demographic Characteristics and Obesity in American Indian and Alaska Native Children: Fiscal Year 2015, United States

Characteristic	Full Sample, No. (%)	Overweight Definition 1,[a] % (95% CI)	Overweight Definition 2,[b] % (95% CI)	Obesity,[c] % (95% CI)	Class 2 Obesity,[d] % (95% CI)	Class 3 Obesity,[e] % (95% CI)
Total no.	206 834	99 729	38 352	61 377	24 794	8854
Total prevalence		48.2 (47.6, 48.9)	18.5 (18.3, 18.8)	29.7 (29.1, 30.3)	12.0 (11.7, 12.3)	4.3 (4.1, 4.5)
Age, y						
2–5	54 380 (26.3)	38.3 (37.4, 39.2)	17.5 (17.1, 17.9)	20.7 (20.1, 21.4)	4.3 (4.1, 4.5)	1.0 (0.9, 1.1)
6–11	68 547 (33.1)	49.6 (48.8, 50.4)	17.9 (17.6, 18.2)	31.7 (30.9, 32.4)	13.0 (12.5, 13.5)	4.4 (4.1, 4.6)
12–19	83 907 (40.6)	53.5 (52.8, 54.2)	19.7 (19.4, 20.0)	33.8 (33.2, 34.5)	16.1 (15.7, 16.6)	6.3 (6.0, 6.6)
Sex						
Female	105 723 (51.1)	48.1 (47.4, 48.8)	20.2 (19.9, 20.5)	27.9 (27.3, 28.5)	11.0 (10.7, 11.4)	3.9 (3.7, 4.1)
Male	101 111 (48.9)	48.3 (47.6, 49.0)	16.8 (16.5, 17.0)	31.5 (30.9, 32.2)	13.0 (12.6, 13.4)	4.7 (4.5, 4.9)

Bullock A, Sheff K, Moore K, Manson S, Obesity and overweight in American Indian and Alaska Native children, 2006–2015, *American Journal of Public Health* 107, no. 9 (September 1, 2017): pp. 1502-1507.


SPAM
20%減塩 SPAM Classic比
Hormel

Overweight and Obesity Among Native Children Aged 2 to 19 Years by Fiscal Year and Age Group: 2006–2015, United States



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Early Life Environment and High Birthweight: Developmental Precursors to Cardiometabolic Disorders

- Early life environments experienced by women, such as disadvantaged neighborhood, built environment factors and community-level socioeconomic factors are related to high birthweight and high pre-pregnancy weight.

- American Indians and Alaska Natives experience persistent health disparities across the lifespan compared to non-Hispanic whites and experience greater prevalence of poor health outcomes.

- High birth weight >4,000g (8lbs, 13 oz), referred to as macrosomia, is an indicator of early life development, is associated with impaired glucose tolerance, insulin resistance, and cardiovascular disease later in the life course.

Associations Between Rurality, Pre-pregnancy Health Status, and Macrosomia among American Indians and Alaska Natives

- American Indian and Alaska Native mother-infant dyads representing 1,136 singleton births receiving IHS care in FY 2011.
- Examined relationships between pre-pregnancy diabetes mellitus (DM), gestational diabetes mellitus (GDM), pre-pregnancy body mass index (BMI) and county-level social determinants of health, with infant macrosomia.
- Nearly half of the women in the sample were under age 25 years (48.6%), and most had Medicaid health insurance coverage (76.7%).
- Of those with a pre-pregnancy BMI measure, 66.2% were overweight or obese. Although few women had pre-pregnancy DM (4.0%), GDM was present in 12.8% of women.
- Most women had a normal term delivery (85.4%).
- Overweight, obesity, pre-pregnancy DM, and county-level rurality were all significantly associated with higher odds of infant macrosomia.

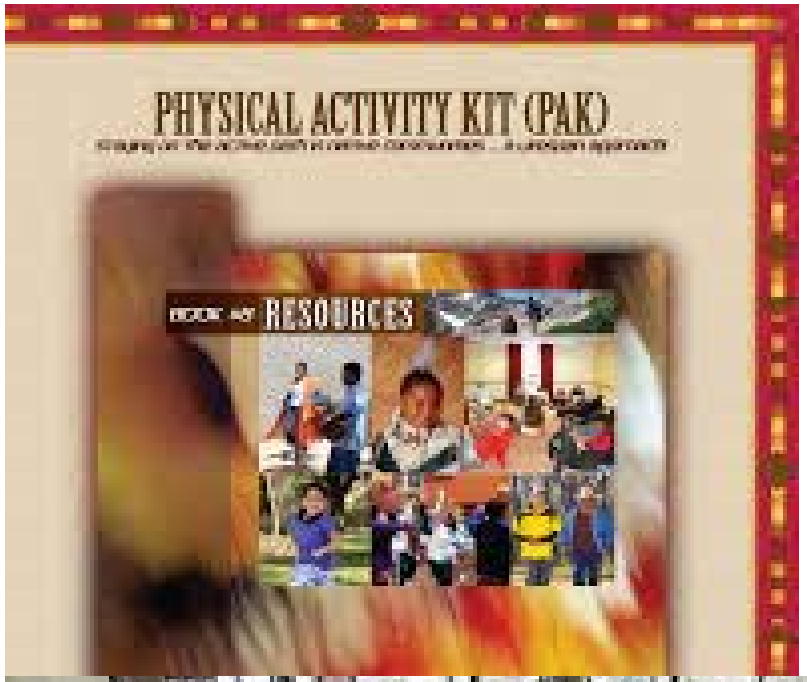
Hiratsuka VY, Reid M, Chang J, Jiang L, Brega AG, Fyfe-Johnson AL, Huyser KR, Johnson-Jennings M, Conway C, Steiner JF, Rockell J, Dillard DA, Moore K, Manson SM, O'Connell J. Associations Between rurality, pre-pregnancy health status, and macrosomia in American Indian/Alaska Native populations. *Matern Child Health* J. 2022 Dec;26(12):2454-2465.


Healthy AFTERschool
KEEP MOVING
DASH
DASH
DASH!
yum
HEALTH
SB 965
DASH
WE ♥ A-OK
Growing Strong

Social Determinants of Health: Risk of and Protection from Being Overweight and Obese

- 23,950 American Indian and Alaska Native children 2–11 years of age, who used IHS from 2010 to 2014.
- Examined cross-sectional associations between Social Determinants of Health (SDH) and prevalent overweight/obesity status and longitudinal associations between SDOH and change in adiposity status over time.
- Being male and low physical activity increased risk of overweight and obesity among pre-adolescent American Indian and Alaska Native youth.
- Limited transportation and extended travel, which compromise access to and participation in preventive and medical care, increased risk of being overweight and obese.
- Children living in counties with higher levels of poverty had 28% higher odds of being overweight/obese.
- Free or reduced-priced lunch protected change from normal-weight to becoming overweight or obese among 2-5 year-old children and appeared to among 6-11 year-old children.

Fyfe-Johnson AL, Reid MM, Jiang L, Chang JJ, Huyser KR, Hiratsuka VY, Johnson-Jennings MD, Conway CM, Goins TR, Sinclair KA, Steiner JF, Brega AG, Manson SM, O'Connell J. Social determinants of health and body mass index in American Indian/Alaska Native children. *Child Obes*. 2022 Sep 28. Epub ahead of print.


PHYSICAL ACTIVITY KIT (PAK)
RESOURCES


LET'S MOVE!

American Indian and Alaska Native Adolescents and Obesity: Social Determinants of Health, Mental Health, and Substance Use

- 26,226 American Indian and Alaska Native adolescents ages 12–19 years receiving Indian Health Service care in FY 2013, supplemented by county-level data from the U.S. Census and USDA.
- Examined prevalence of obesity prevalence in relationship to SDOH and adolescent mental health and substance use disorder status.
- Observed a prevalence of 32.5% for obesity, 13.8% for mental health disorders, and 5.5% for substance use disorders.
- Females had lower odds of obesity than males, which decreased with age.
- Having Medicaid coverage, residing in a county with lower education attainment, and residing in a county with higher rates of poverty were each associated with higher odds of obesity.
- Lower odds of obesity if one resided in a county with high access to a grocery store and in a county with a higher proportion of American Indian and Alaska Native adolescents.
- Mental health disorders associated with higher odds of obesity; substance use disorders with decreased odds of obesity.

Johnson-Jennings MD, Reid M, Jiang L, Huyser KR, Brega AG, Steiner JF, Manson SM, Chang J, Fyfe-Johnson AL, Hiratsuka V, Conway C, O'Connell J. American Indian and Alaska Native adolescents and obesity: the influence of social determinants of health, mental health, and substance use. *Int J Obes* (Lond). 2023 Feb 7. Epub ahead of print.

Recommendations

- Widely disseminate, resource, and implement culturally tailored, evidence-based preconception counseling and diabetes risk-reduction programs, which include nutrition and weight-management principles. Examples include:
  - Terry MA, Stotz SA, Charron-Prochownik D, Beirne S, Gonzales K, Marshall G, Moore KR; Stopping GDM Study Group. Recommendations from an expert panel of health professionals regarding a gestational diabetes risk reduction intervention for American Indian/Alaska Native Teens. *Pediatr Diabetes*. 2020 May;21(3):415-421.
  - Stotz SA, Charron-Prochownik D, Terry MA, Marshall G, Fischl AR, Moore KR; SGDM Study Team. Stopping gestational diabetes in American Indian and Alaska Native firls: Nutrition as a key component to gestational diabetes risk reduction. *Curr Dev Nutr*. 2020 May 6;5(Suppl 4):13-21
- Screen for and identify American Indian and Alaska Native women early in pregnancy for pregestational or gestational diabetes, obesity, excessive weight gain, multiple pregnancies, prior fetal macrosomia, and/or family history of fetal macrosomia.
- Provide intensive dietary instruction and home glucose monitoring to high risk pregnant American Indian and Alaska Native women.
- Coordinate ancillary resources among primary care, nutritional, behavioral health, and social services.

Recommendations

- Increase public education and social marketing campaigns that employ age-appropriate media to recalibrate youths' attitudes toward weight, physical activity, and healthy eating: "Obesity and diabetes are **not** our destiny!"
- Promote local champions by sharing their successful journeys, the challenges, rewards, and possibilities.
- Create, support, and encourage multi-generational activities that build upon cultural values and traditions consistent with the key elements of a healthy lifestyle such as good nutrition, physical exercise, and social connection.
- Plan, support, and sustain a **continuum** of programs along which children can seamlessly participate across the developmental life span.
- Screen for and address risks of obesity and diabetes associated with social determinants of health among children seen across educational, health care, and social service settings.
- Increase access to healthy foods in school-based lunch programs.
- Encourage innovative, culturally informed USDA-sponsored SNAP-Ed programming.

Recommendations

- Enhance surveillance and monitoring efforts by:
  - Funding analyses, generating summary reports, and widely disseminating findings of dietary behavior and related factors assessed by the Centers for Disease Control's Youth Risk Behavior Survey, with special attention to American Indian and Alaska Native children.
  - Facilitating access to and analyses of Indian Health Service's National Data Warehouse information specific to risk, onset, duration, severity of and comorbidities associated with obesity and diabetes among American Indian and Alaska Native children.

Thank you!

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