

# What we know about overweight & obesity in American Samoa

Obesity is caused by an energy imbalance: consuming more calories than are used up. Our rapidly changing society has allowed us to live comfortably by eating more and expending less energy (1). A United Nations World Health Organization 2005 ranking of overweight in countries and territories found that American Samoa's population, with 93.5% being overweight or obese, ranks a close second to Nauru (94.5%). Independent Samoa ranks 7<sup>th</sup> at 80.4%, and the United States comes in 9<sup>th</sup> at 74.1% (2).

$$\text{Body Mass Index} = \frac{\text{weight (lb)}}{[\text{height (in)}]^2 \times 703}$$

## CDC BMI Scale

Normal weight	19 – 25
Overweight	≥25 – 30
Obese	≥ 30 – 40
Morbidly Obese	> 40

## Pacific Islander BMI Scale

Normal weight	23–27
Overweight	≥28–32
Obese	≥ 32

## Adults

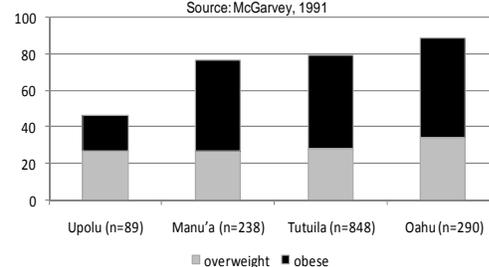
Overweight and obesity are the norm for adults in American Samoa. Based on 1,995 BMI scores:

- The average BMI for men is 33.7 and 36.2 for women
- 93.5% of adults ages 25-64 are overweight or obese, with little difference between age groups
  - \* 18.9% are overweight
  - \* 74.6% are obese
- 94.4% of women ages 25-64 are overweight or obese
  - \* 14.2% are overweight
  - \* 80.2% are obese
- 92.7% of men ages 25-64 are overweight or obese
  - \* 23.4% are overweight
  - \* 69.3% are obese (3)

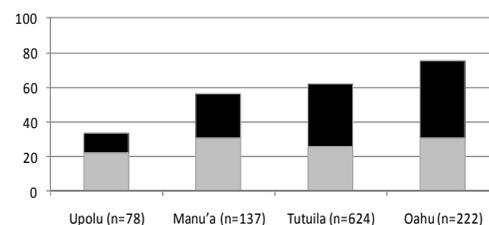
Abdominal fat is the most clinically relevant (1). Exceeding waist circumference cut offs of 35 inches for women and 40 inches for men indicates an increased risk of cardiovascular disease. The average waist circumference for both women and men in American Samoa is 41 inches (3).

McGarvey suggests efficient fat-producing metabolisms would have increased survival among the first Polynesians who settled in the Samoan islands. But Samoans in the late 20th century did not have the prevalence of overweight and obesity seen in today's population. This suggests it is not simply an ethnic group trait but an interaction between genetics, the modern environment, and individual dietary and physical activity patterns. The affects of a modern lifestyle, especially rapid dietary and physical activity changes, along food-centered cultural activities in a population with a genetic disposition for overweight have exacerbated the prevalence of obesity in Samoans, especially females. This modernization idea is supported by the steady increase in BMI for both genders and all age groups in Samoa, to American Samoa to Samoan immigrants to Hawaii (4).

Percent Female Population  
Source: McGarvey, 1991

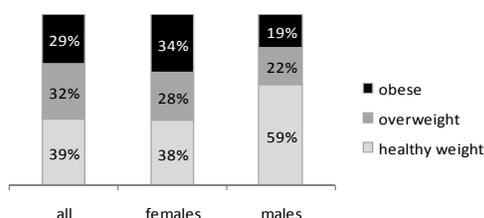


Percent Male Population



## College Students

ASCC Student BMI Categories  
Source: S. Samoa, 2009

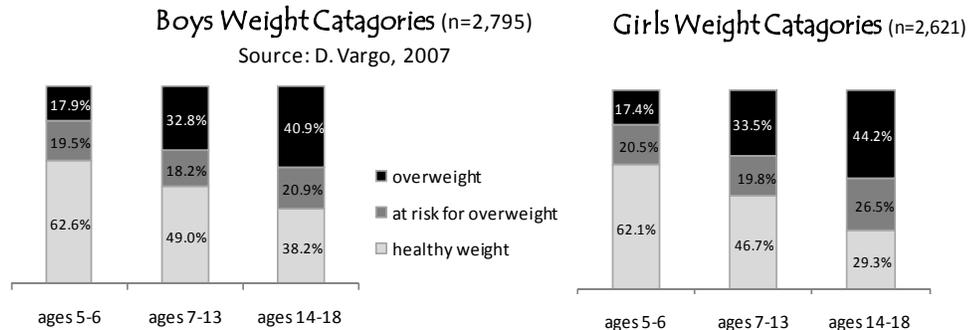


A sample of 114 students ages 18-24 attending the American Samoa Community College found 62% of females and 41% of males are overweight or obese, despite using the more liberal Pacific Islander BMI scale. Waist circumference scores show an even greater gender difference. Forty-one percent (41%) of female college students are at-risk compared to 15% of males. Students with high BMI and high waist circumference are more likely to report feeling unhealthy with at-risk waist circumference being the strongest predictor of poor health perceptions (5).

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## Youth

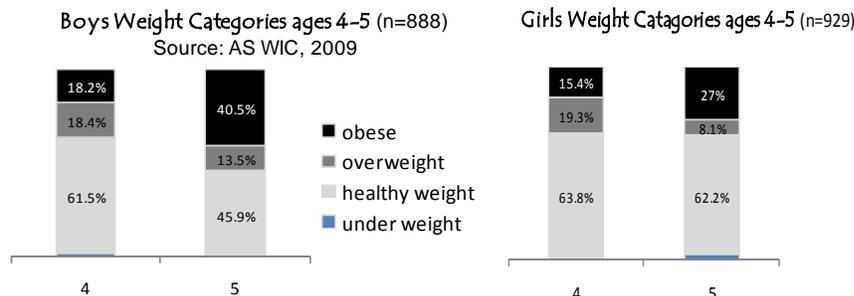
The number of fat cells is set during childhood and adolescence and the most important factor in determining adult BMI is previously developed fat cells (1). Research in 1978 and 1982 showed consistent obesity rates of 8% of girls and 4% of boys (6). Today, the average American Samoan youth is overweight and 35% are obese and 40% have at risk waist circumference scores. Studies conducted 2006-09 on the prevalence of overweight and obesity amongst school children show that as students get older they are more likely to be at an unhealthy weight. Although most students remained in the same weight category over a two-year period, average BMI percentiles within weight groups increased over time showing an average overall weight gain exceeding age associated average height gain (1).



A gap exists between perceptions of healthy weight and actual BMI scores for youth. The majority of high school juniors feel they are at a healthy weight despite this being true for only a quarter of this population (1). The 2007 Youth Risk Behavior Survey of 3,625 public high school students found only 27% of girls and 18% of boys describe themselves as overweight. A survey of 108 girls ages 13-18 attending 4 public high schools, including Manu'a High School, revealed that weight satisfaction decreases with age; 70% of girls ages 13-14 are happy with their weight compared to 55% of girls ages 17-18. The majority of girls recognize that obesity is a problem for people their age and feel overweight or obese females are stigmatized more than male counterparts (8). Sixty-one percent (61%) of female high school students and 48% males report trying to lose weight (7).

## Young Children

Large birth weight and large weight gains from birth to 6 months are common for American Samoan infants, and children are significantly heavier and taller than in Samoa (4, 9). However, children as young as 5 years appear to be progressing towards overweight and obesity. Height and weight measurements of 4,225 2-5 years olds accessing the American Samoa Women Infants and Children (WIC) program in 2009 found 34% to be overweight or obese using a CDC age-specific BMI scale. Weight category percentages appeared stable from ages 2-4, but significant shifts towards obesity are visible between ages 4 and 5 years for both girls and boys (10). Obese children tend to become obese adults who are more likely to require costly health care (1).



## Sources

- (1) Vargo D. *Prevalence of Obesity Amongst American Samoa School Children 2008/2009 School Year: Report to the Directors Department of Health and Department of Education*. May 2009.  
 (2) [www.epidemiologic.org/2007/02/most-overweight-countries-in-world.html](http://www.epidemiologic.org/2007/02/most-overweight-countries-in-world.html) (3) American Samoa NCD Risk Factors STEPS Report. World Health Organization. March 2007. (4) McGarvey S. Obesity in Samoans and a perspective on its etiology in Polynesians. *American Journal of Clinical Nutrition*. 1991;53:1586S-94S. (5) Samoa S. *Motivations and barriers of college student healthy eating habits for a healthy weight*. American Samoa Community Cancer Network Community Cancer Investigator Program presentation given May 13, 2009. American Samoa Community College. NCI # U01CA114590 (6) Vargo D. *Prevalence of Overweight in American Samoan Schoolchildren, 2007/2008 School Year: Report to the Directors Department of Health and Department of Education*. June 2008. (7) American Samoa Youth Risk Behavior Survey summary, 2007. Centers for Disease Control and Prevention and American Samoa Department of Education. (8) Faaiuas G. *Obesity in American Samoa's female adolescents*. Community Cancer Network Community Cancer Investigator Program presentation given May 13, 2009. American Samoa Community College. NCI # U01CA114590 (9) Galanis, DJ, et al. 1999. Dietary Intake of Modernizing Samoans: Implications for Risk of Cardiovascular Disease. *Journal of American Diet Association*, 99,184-90. (10) American Samoa Women Infant and Children (WIC) Program data, 2009.