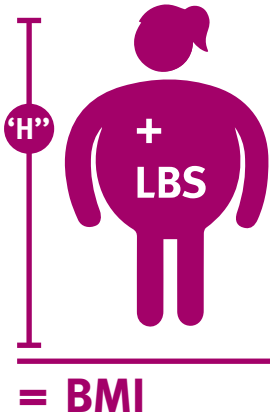


MATERNAL AND CHILD HEALTH BRIEF #2:

OBESITY AMONG CHILDREN AND ADOLESCENTS
SEPTEMBER 2012

OBESITY DEFINED

Obesity and overweight are typically measured in terms of Body Mass Index or BMI. BMI is a proxy measure. That is, BMI is not a direct measure of body fat, but is correlated with the percent of body fat. BMI is calculated using an individual's height and weight. For children, ages 2 through 19, age- and sex- specific percentiles for BMI are used in conjunction with growth charts to determine BMI classification. Children at or above the 85th percentile and below the 95th percentile for BMI are classified as overweight and children at or above the 95th percentile are classified as obese.ⁱ



THE PERCENTAGES OF CHILDREN AND ADOLESCENTS CLASSIFIED AS OVERWEIGHT AND OBESE

According to the 2009 Youth Risk Behavior Surveillance Study, high school students in Delaware are not statistically different than

(continued on page 2)

OVERVIEW

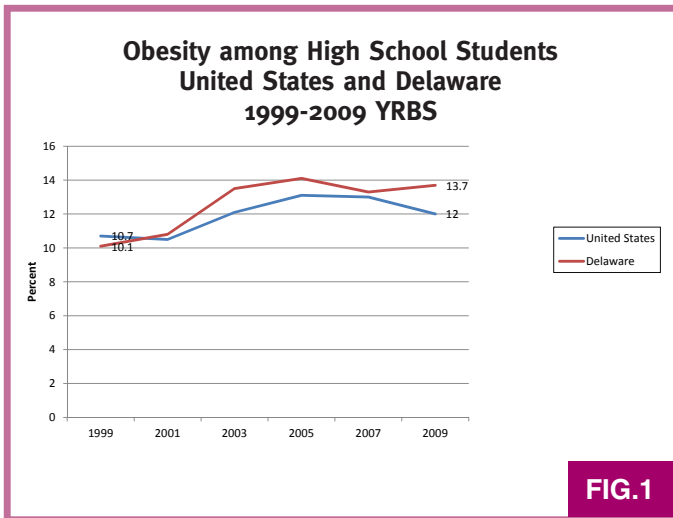


This Maternal and Child Health (MCH) Brief summarizes the increasing prevalence of obesity among children and adolescents. The brief also identifies several strategies in terms of promotion and prevention that are thought to be effective in raising awareness and educating families about the problems related to obesity and behavioral changes that can lead to a healthy lifestyle. Finally, the brief discusses the public health role from the perspective of Maternal and Child Health programs in promoting health across the lifespan and preventing obesity and obesity-related complications.



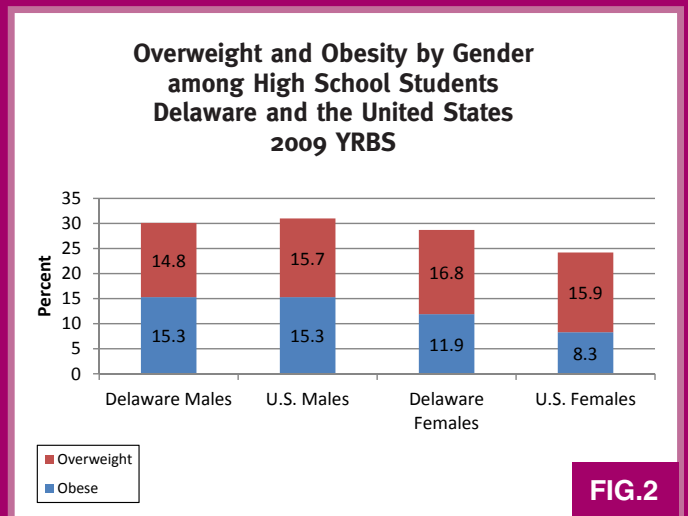
PERCENTAGE OF CHILDREN AND ADOLESCENTS *(CONTINUED)*

their peers nationwide in terms of the percentage classified as obese or overweight. In the United States and Delaware, the percentage of children who are obese has been increasing in recent years. In 2009, the percentage of high school students classified as obese was 10.7 percent nationwide. The percentage of high school students classified as obese in 2009 was 12 percent.



By comparison in Delaware, the percent of high school students classified as obese increased from 10.1 percent to 13.7 percent over the same time period. Rates of overweight and obesity are higher among blacks and Hispanics high school students compared to white high school students (see Figures 1, 2, 3).ⁱⁱ

Based on data from the 2007 National Survey of Children’s Health, 31.6% of children aged 10 to 17 years were either overweight or obese in the United States. Based on an analysis of this same survey, the National Initiative for Children’s Healthcare Quality reported that in Delaware in 2007, 33.2% of children aged 10 to 17 years were either overweight or obese. In 2007, Delaware ranked 36th (where 1 is the best) among states in terms of childhood overweight and obesity despite a relative improvement since 2003 when Delaware ranked 45th.ⁱⁱⁱ



Among younger children, the available evidence suggests that factors and trends related to overweight and obesity are mirroring those among older children. Among middle school students in Delaware in 2009, 25.6 % described themselves as slightly or very overweight, 31.1 % did not exercise to lose weight or keep from gaining weight and 54.9% did not eat less food to keep from gaining weight or to lose weight. Additionally, 41.7% of middle school students in Delaware in 2009

FIG.2

reported watching television for three or more hours per day and 30% reported using computers or video games for three or more hours per day.^{iv}

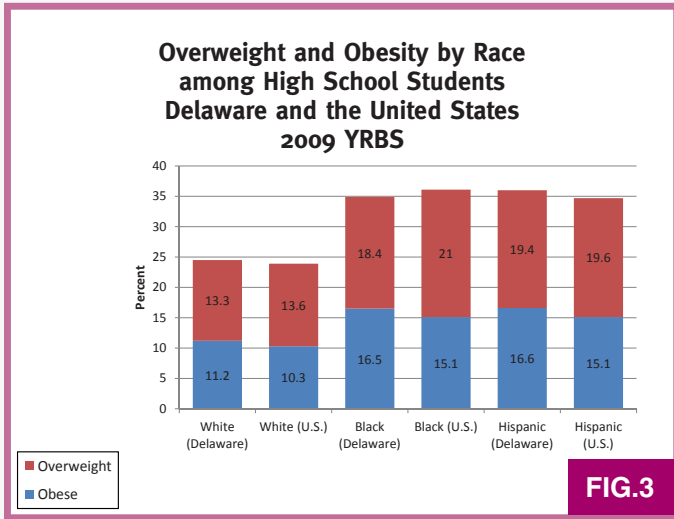


FIG.3

Nationally, according to the 2009 Pediatric Nutrition Surveillance System, one out of three children from low-income households are obese or overweight before their fifth birthday.^v

PREDISPOSING (RISK) FACTORS RELATED TO OBESITY

Childhood obesity has been found to be associated with a number of socio-demographic and health-related factors including:

- Parental obesity
- Higher birth weight
- Spending more than eight hours watching TV when three years old
- Sleeping less than 10.5 hours per night when three years old

- Size in early life
- Rapid weight gain in the first year of life
- Rapid catch-up growth between birth and two years
- Early development of body fatness in the preschool years^{vi}

Racial and ethnic differences have also been found to be risk factors for obesity. When compared to white children, black and Hispanic children demonstrated a range of risk factors including maternal depression during pregnancy, rapid weight gain during infancy, solid foods before four months of age, higher rates of restrictive maternal feeding practices, more televisions in the bedroom after two years of age, higher intake of sugar sweetened beverages and higher intake of fast food. Black and Hispanic children were also found to have lower rates of exclusive breastfeeding and were more likely to sleep less than 12 hours per day during infancy than white children.^{vii}

OBESITY-RELATED HEALTH CONDITIONS

Obesity during childhood is related to numerous psychosocial and health conditions across the lifespan.

(continued on page 4)



OBESITY RELATED HEALTH (CONTINUED)

Among the conditions thought to be related to childhood obesity are:

- Obsessive concern with body image
- Low self-esteem
- Depression
- High blood pressure
- Early onset of atherosclerosis
- Diabetes mellitus
- Menstrual abnormalities
- Polycystic ovarian syndrome
- Gallstones
- Cirrhosis
- Osteoarthritis
- Asthma
- Sleep apnea
- Pulmonary embolism^{viii,ix}

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“ OBESITY DURING CHILDHOOD IS RELATED TO NUMEROUS PSYCHOSOCIAL AND HEALTH CONDITIONS ACROSS THE LIFESPAN.”

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STRATEGIES FOR REDUCING OBESITY-RELATED COMPLICATIONS DURING PREGNANCY

There are a number of steps that can be taken to reduce problems related to obesity during childhood. According to the American Academy of Pediatrics’ Bright Futures, health care professionals should routinely plot BMI for early recognition of overweight and obesity; address increases in BMI before it reaches the 95th percentile; and screen for at-risk children based on parental obesity; sibling obesity, family income and chronic disability. Additionally, health care professionals should provide guidance on nutrition and physical activity. The AAP suggests that parents act as role models for physical activity and nutrition, promote family physical activity time, promote eating together as a family, limit screen time, limit dining out and promote water and low-fat milk consumption over juices and sodas.^x

OBESITY AND MATERNAL CHILD HEALTH PROGRAMS

Two main goals of Healthy People 2020 are directly related to obesity prevention:

- Improve the health and well-being of women, infants, children, and families.

- Promote health and reduce chronic disease risk through the consumption of healthful diets and achievement and maintenance of healthy body weights.^{xi}

Obesity prevention is a public health function and in Delaware multiple program areas are involved with planning and implementing interventions, as well as with evaluation of these initiatives and providing surveillance for the growing burden of obesity and associated health conditions.

A priority of Delaware’s Maternal and Child Health Programs is the reduction of obesity among children and adolescents.^{xii} Four of the main initiatives addressing the Maternal and Child Health needs concerning obesity prevention are the Healthy Women, Healthy Babies Program, the Delaware Home Visiting Program, the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) and the Physical Activity, Nutrition and Obesity Prevention (PANO) Program.

Healthy Women, Healthy Babies provides preconception and prenatal care for women who are at risk for poor birth outcomes. The program targets African-American women as well as women whose most recent pregnancy resulted in a poor birth outcome. Women are also eligible based on a number of other risk factors, including having a BMI of 30.0 or above. In addition to preconception care, psychosocial care and prenatal

care, the program offers nutritional care as well. As one of its aims, the Delaware Home Visiting Program strives to prevent and mitigate the effects of obesity during pregnancy and provides a continuum of services to prevent health and social problems that negatively impact infants, children, pregnant women and families. The program utilizes a multidisciplinary approach that includes nurses, nutritionists and social workers to make home visits to provide assessment, education, social support and nutrition services, as well as referrals to other services. Mothers are enrolled into one of three available tiers of the program during the prenatal period or after the birth of their infant and engaged with the program for up to three years.



WIC provides: nutritious foods to supplement diets; information on healthy eating; breastfeeding support; and referrals to other healthcare, welfare and social services to low-income women, infants and children up to age 5 who are at nutritional risk.

PANO uses a public health approach to addressing the role of physical activity and nutrition in improving health and preventing chronic diseases for all Delawareans.

Recognizing that a variety of behavioral, social, economic, and environmental factors influence our health, the PANO program promotes policy and systems change, and implements programs and strategies to promote a reduction in obesity.

Additionally, the Delaware Healthy Mother and Infant Consortium has developed Reproductive Life Plans and a website that covers nutrition, exercise and the importance of maintaining a healthy weight across the lifespan (<http://dhmic.healthywomende.com/>).

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MCH SURVEILLANCE OF PROGRESS IN REDUCING OBESITY AMONG CHILDREN

In addition to national surveys, the Delaware Division of Public Health monitors obesity among children through its Performance Objectives and related program data sources.

Maternal and Child Health Block Grant.

Annually, the State of Delaware submits the Title V Maternal and Child Health Block Grant application that specifies priority areas for resource allocation. State Performance Measure #4 tracks the percent of children who are overweight or obese. In 2011, according to the Youth Risk Behavior Survey in Delaware, 29.1% of high school student were estimated to be overweight or obese.ⁱⁱ

Delaware has set a 20% reduction in this measure as a performance target over the next 10 years (2011-2021).

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FRAMEWORKS AND STRATEGIES FOR REDUCING OBESITY IN THE COMMUNITY

According to the Institute of Medicine, state and local governments are in the best position to focus on the unique needs of their states, cities and neighborhoods and should provide coordinated leadership and support, particularly for high-risk populations.^{xiii} An important part of designing adequate interventions to prevent obesity is surveillance and monitoring trends and evaluating prevention efforts through public health.

The Centers for Disease Control supports states in five specific strategies aimed at reducing obesity:

- Increasing consumption of fruits and vegetables
- Increasing physical activity
- Increasing breastfeeding initiation, duration and exclusivity
- Decreasing consumption of sugary drinks
- Decreasing consumption of high-energy-dense foods, which are high in calories.^{xiv}

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