



# Focus On: Healthy Bodies

## DANE COUNTY YOUTH ASSESSMENT 2005

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*These Focus on: reports provide an in-depth analysis of specific topics/issues on data from the 2005 Dane County Youth Assessment of 7<sup>th</sup>-12<sup>th</sup> graders in 14 Dane County school districts.*

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## Youth and Body Weight

This issue of *Focus On* explores the topic of youth and body weight. In 2005, for the first time in the history of the Dane County Youth Assessment (DCYA) students were asked for their height and weight, allowing for the calculation of Body Mass Index (BMI) as defined by National Centers for Disease Control (CDC). BMI is a ratio of weight-to-height taking into consideration gender and age (for more information follow this link [http://www.cdc.gov/nccdphp/dnpa/bmi/childrens\\_BMI/about\\_childrens\\_BMI.htm](http://www.cdc.gov/nccdphp/dnpa/bmi/childrens_BMI/about_childrens_BMI.htm)). This issue uses BMI estimates to provide a profile of Dane County 13-18 year olds, their body weight, nutrition habits and physical activity.

### Overview of Youth BMI

The CDC has developed a set of widely used categories, based on BMI calculations, for assessing a healthy body weight for children and youth (shown in Table 1).

**Table 1**  
**CDC Youth Body Weight Categories**

**Overweight** - Youth with BMI's at or above the 95<sup>th</sup> percentile for their age and gender. This is considered an unhealthy weight.

**At risk for being overweight** - Youth with BMI's between the 85<sup>th</sup> to 95<sup>th</sup> percentiles for their age and gender. This may also be an unhealthy weight.

**Normal weight** - Youth with BMI's between the 5<sup>th</sup> to 85<sup>th</sup> percentiles for their age and gender. This is considered a healthy weight for most children.

**Underweight** - Youth with BMI's below the 5<sup>th</sup> percentile for their age and gender. This may be an unhealthy weight for some children.

Youth maintaining a healthy weight is a serious health topic in the United States. The prevalence of being overweight among children age 6 to 11 years has tripled in the last three decades; and for children aged 2 to 5 and adolescents aged 12 to 19, it has doubled. (CDC, IOM) National survey data show dramatic increases in being overweight for all age groups since the 1980's. The percentage of American 12-19 year olds who are overweight has increased from 5% (NHANES 1976-1980) to over 17% (NHANES 2003-2004). In addition, there is large and growing segment in the "at risk for overweight" category.

## Adults & Obesity

- Approximately 300,000 adult deaths in the US each year are related to unhealthy diet and/or sedentary behavior
- Nearly 2/3 of US adults are overweight (BMI>25).
- Nearly 1/3 of US adults are obese.
- Americans spend over \$33 billion on weight loss products each year.

Source:

[www.overweightteen.com](http://www.overweightteen.com)

## USA V. World

Research conducted by the National Institutes of Health (Overpeck & Hediger, 2005) found that US teens are more likely to be overweight than those in 14 other industrialized countries.

The 17% of US teens reporting BMI's in the overweight category was well above the 2<sup>nd</sup> place countries of Portugal and Greece at 12%. The Scandinavian countries of Sweden, Norway and Denmark averaged 5%.

Although one of the national health objectives for the year 2010 is to reduce the prevalence of obesity among adults and children, current data indicate that the situation is worsening rather than improving. This is not surprising considering that being overweight or obese is a complex issue involving the interaction of behavioral, environmental, cultural, socioeconomic and genetic factors.

## Dane County Youth and BMI

According to DCYA 2005 data, 21% of Dane County 7<sup>th</sup>-12<sup>th</sup> graders reported BMI's that suggested they were either overweight or at risk for being overweight. Eight percent fell in the overweight category. This is lower than the 17% nationwide (NHANES 2003-2004) and is also lower than the national 2010 goal of 11%.

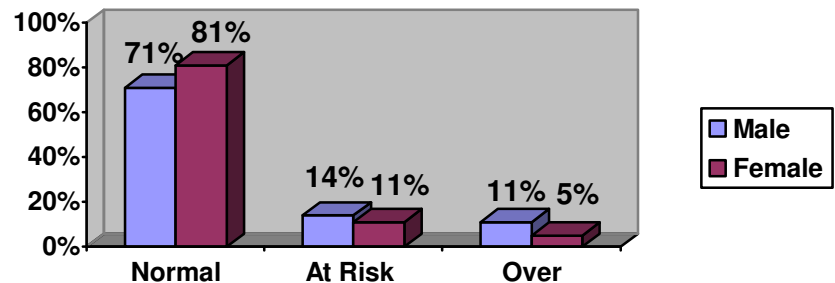
### Gender

In regard to boys and girls in Dane County, males are more likely to be overweight than females (11% to 5%), as shown in Table 2. This pattern is consistent with national CDC data with higher rates for boys (18%) and slightly lower (16%) for girls. However, the discrepancy between boys and girls is much greater in Dane County. In fact, 1 in 4 boys are in the at risk or overweight categories – compared to 1 in 6 girls.

Some of the differences between boys and girls could be explained by lean, muscle mass but the pattern is the same for 7<sup>th</sup>-8<sup>th</sup> grade boys (24% at risk or overweight) where muscle weight is not an issue.

Table 2

BMI by Gender  
DCYA 2005 Grades 7-12



A noteworthy percentage of Dane County girls in grades 7-12 reported issues with weight loss, dieting and appearance. Fifty-one percent of Dane County girls in the CDC's normal and underweight categories reported they were trying one or more methods to lose weight. Twenty percent of the normal/underweight group said they "needed help losing weight." And about 9% of the same group reported some sort of eating disorder. Finally, 35% of these same girls said they were "quite a bit" or "very much" worried about how they looked.

**Barriers to Exercise**

One study explored the reasons behind rising levels of obesity among minority populations (70% of African Americans and 73% of Hispanics are overweight).

Van Duyn, et al (2007) found that although being physically active was a major part of the cultures studied, it was difficult for people to find natural ways to stay active.

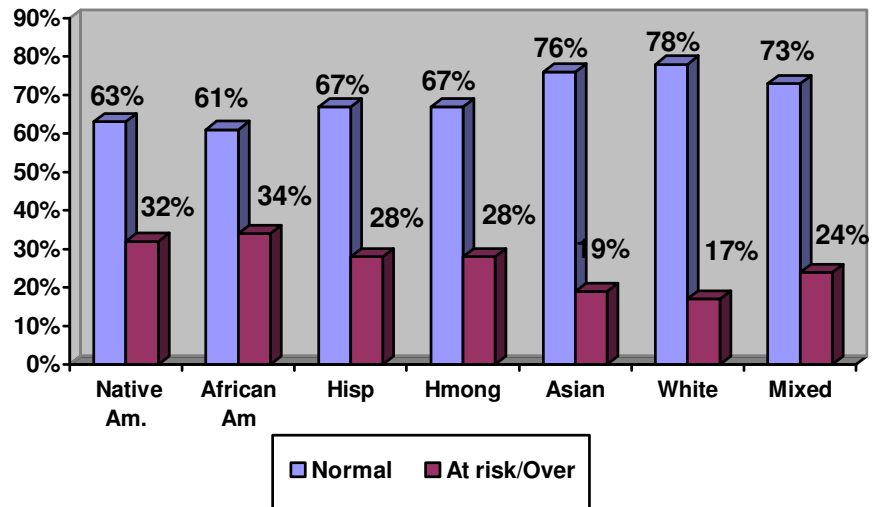
Lack of physical activity was not a function of culture or race but the fact that people lived in underserved communities with issues like transportation, neighborhood safety, lack of access and long hours of work. (CDC, 2007)

Source:  
*Journal of Clinical Endocrinology Oct. 2007*

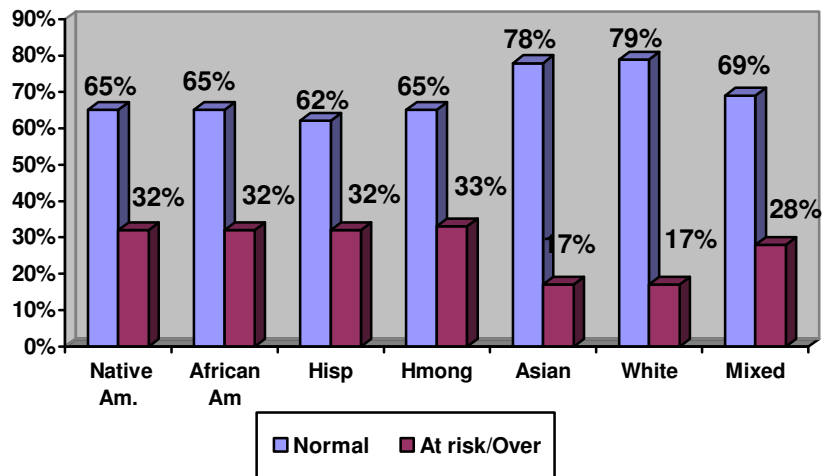
**Race and Culture**

DCYA 2005 data show some differences in BMI by race/culture. This is similar to national data where higher percentages of African American, Native American, Hmong and Hispanic youth fall into the categories of at risk of being overweight and overweight. (CDC, 2002).

**Table 3**  
BMI by Race  
DCYA 2005 Middle School



**Table 4**  
BMI by Race  
DCYA 2005 High School



### Parenting and Diet

One potential factor influencing childhood obesity is parental monitoring (CDC 2002). DCYA 2005 data show that 75% of Asian and 73% white teens have 2-parent households compared to African-American teens with only 32% having 2-parent households

### Middle School Students and BMI

Middle school students who are overweight or at risk have different characteristics than HS students in the DCYA 2005 data:

- 72% have tried some form of weight loss, including excessive exercise.

- These middle school students spend far more time watching TV, playing electronic games and using the internet than normal weight MS kids.

- More than 50% get no regular exercise.

- More than 24% have skipped school in the last 30 days.

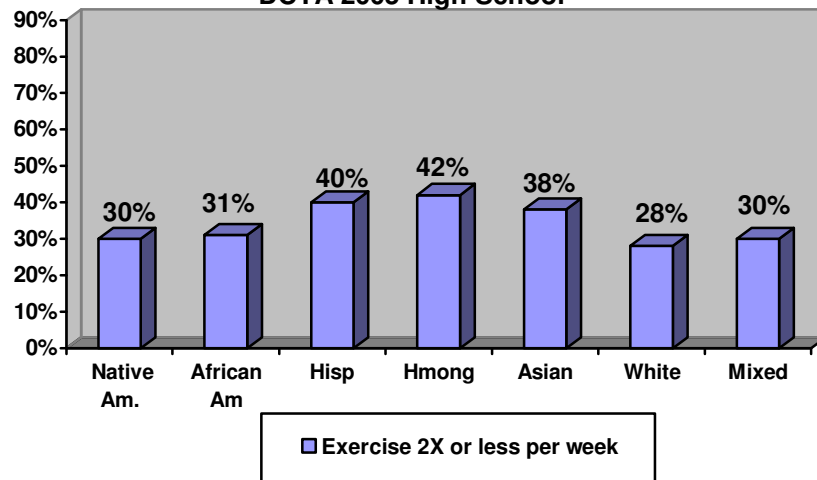
A body of research has been devoted to the study of being overweight/obese in minority populations – particularly Hispanic and African-American families. Most theories have centered around socioeconomic factors like the following (American Academy of Pediatrics, 2003):

- Limited access to exercise facilities
- Poor nutrition choices at school and home
- Poor modeling by parents
- Lack of parental supervision

In the DCYA 2005 data, African-American 7<sup>th</sup>-12<sup>th</sup> graders were more likely to drink 4 or more cans of soda per day (28% said they did) versus their white and Asian (not Hmong) counterparts (13% and 11% respectively). Also, DCYA 2005 data indicates African-American youth spend more time watching TV (31% spend more than 16 hours per week watching TV) while white and Asian teens are spending less time watching television (13% and 14% respectively).

Hispanic youth in this age group have similar patterns of soda consumption and TV viewing as Asian and white students (19% drinking 4+ cans of soda per day and 19% spend 16+ hours watching TV per week). However, Hispanic and Hmong youth get less exercise than white youth (Table 5).

**Table 5**  
**Exercise by Race**  
**DCYA 2005 High School**



Forty-one percent of high school youth said they exercised the CDC-recommended 5 times or more per week. One third of all high school students were exercising 2 times or less each week. As shown in Table 5, the 2-times-or-less group is about one third (33%) of youth in all racial categories with Hispanic, Hmong and Asian youth closer to 40%.

**BMI & Diabetes**

A recent study (Barclay & Vaga, 2007) found that teens with elevated BMI's had "low grade immune system activation" – a precursor to diabetes in adults.

The sample for this study was 15 year old girls. The purpose was to find any connection between a teen's weight the onset of diabetes.

Source:  
*Journal of Clinical Endocrinology Oct. 2007*

**Drinking Soda**

Carbonated soft drinks are the single biggest source of calories in the American Diet. "Teenagers get 13% of their calories from carbonated and noncarbonated soft drinks." (CSPINET)

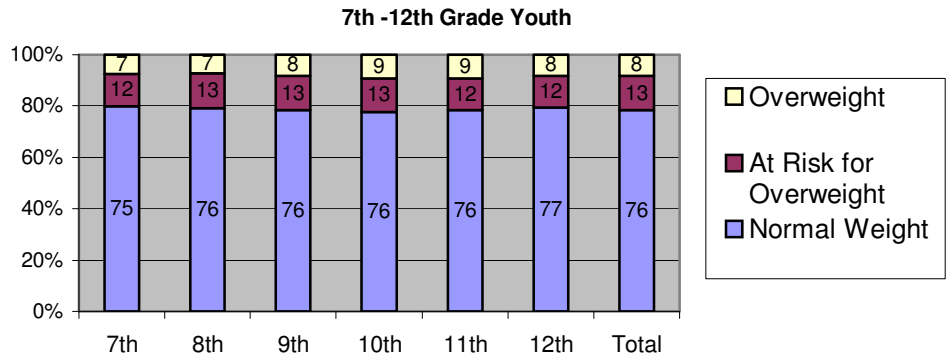
In 1977-78, boys drank more than twice as much milk as soda, and girls drank 50% more milk than soda. By 1994-96, girls & boys drank twice as much soda as milk. "Heavy soft drink consumption is associated with lower intake of numerous vitamins, minerals, and dietary fiber." (CSPINET)

**Age**

Nationally the percentage of youth who are overweight tends to increase with age. In Dane County, these percentages are stable for youth across grades 7-12 as shown in Table 6 below.

**Table 6**

**Prevalence of Weight Categories by Grade Level**



**Losing Weight, Diet and Behavior**

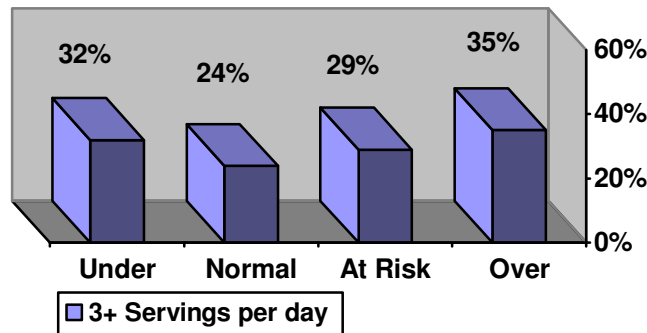
More than 66% of high school students who are either at risk of being overweight or are overweight have tried some method to lose weight (compared to 35% of all other students – DCYA 2005). The most common method was to exercise regularly and cut out sugar, fat and junk food. Also, 33% of at risk/overweight teens said they could use more help losing weight versus 14% of normal weight teens.

Regarding behaviors, Dane County youth in the CDC's normal weight category exercise the most (89% at least once a week), participate in sports more (74%), spend less time playing electronic games (56% less than 1 hour per week) and drink the least soda (55% 1 can or less per day). Overweight youth participate the least in sports (48% are getting less than 1 hour per week), spend more time playing electronic games (25% more than 10 hours per week) and consume the most sugary drinks (21% have 4+ servings per day).

Soda (or sports drink) consumption is alarmingly high across all weight levels as Table 5 below shows. About 27% of all high school students are drinking at least 3 servings per day.

**Table 7**

**Soda or Sports Drinks  
HS Students - DCYA 2005**



## TV and Veggies

A number of studies have shown the connection between TV viewing and the consumption of high calorie foods (Kelder, 1994), the influence on family food purchases toward unhealthy diets and the creation of eating patterns in kids that extend into adulthood (Kotz, 1994).

A recent study showed a direct, inverse relationship between TV viewing and kids eating fruits and vegetables.

Every additional hour of TV viewing per day by adolescents reduced their consumption of fruits and vegetables per week by 1 serving (Reneé Boynton-Jarrett, 2003)

On average US youth watch over 20,000 commercials per year. About 56% are for food and nearly half of those commercials imply that cereals, candies or sweets are nutritious. (Kotz & Study, 1997)

Fruit and vegetable consumption is similar across weight categories. Most Dane County youth (62%) are getting 2 servings or fewer per day. Surprisingly normal weight high school youth eat the fewest fruits and vegetables (55% at 1 serving or less) and overweight youth eat the most (35% have 3+ servings per day).

Recommendations (US Dept. of Agriculture, 2005) are that youth 13-19 years old should be getting 4-5 servings (cups) of fruits and vegetables each day. Seventeen percent of students in grades 7<sup>th</sup>-12<sup>th</sup> in Dane County said they were getting 4-5 servings per day.

### Contributing Factors

Although much of the focus with youth and obesity is on diet and exercise the American Academy of Pediatrics has a research-based list of contributors to children being overweight:

- **Food Choices** - Diets higher in calories (including fats and simple sugars) and lower in fruits and vegetables are linked with being overweight.
- **Physical Activity** - Less physical activity and more time spent participating in activities such as watching TV results in less energy expenditure.
- **Parental Obesity** - Children of obese parents are more likely to be overweight themselves. There is an inherited component to children being overweight. Also, parental obesity may also reflect a family environment that promotes excess eating and insufficient activity.
- **Eating Patterns** - Skipping meals or failure to maintain a regular eating schedule can result in increased intakes when food is eaten.
- **Parenting Style** - Some researchers believe that excess parental control over children's eating might lead to poor self regulation of kid's energy intake.
- **Low Birth Weight** - Low birth weight (<2500 g) is a risk factor for being overweight in several epidemiological studies.
- **Formula Feeding** - Breast feeding is generally recommended over formula feeding. Although the exact mechanism is unknown, several long-term studies suggest that breast feeding may prevent excess weight gain as children grow.
- **Parental Eating and Physical Activity Habits** - Parents with poor nutritional habits and who lead sedentary lifestyles role model these behaviors for their children, thereby creating an "obesigenic" home environment.
- **Demographic Factors**. Certain demographic factors are associated with an increased risk of being overweight in childhood. For example, there is evidence that African-American and Hispanic children 6 to 11 years old are more likely to be overweight than are non-Hispanic white children of the same age. Asian and Pacific Islander children of the same age were slightly less likely to be overweight.

## **Bullying and Overweight**

In a study by Janssen, et al (2003), 11-16 year olds who were overweight were more likely either to be bullied by other students or to bully other students.

Being a victim of bullying was more likely at ages 11-14, whereas older students who were overweight were more likely to be bullies themselves.

Source: *Pediatrics* (2004)

## **Influencing Factors**

Factors that contribute to obesity in children & youth include:

- skipping breakfast
- eating out, particularly at fast food restaurants
- increased portion sizes

The frequency of family meals is inversely associated with overweight prevalence.  
Source: AAP

## **School and Social Life**

A student's weight seems have a connection to attitudes about school and academic behavior. Over 61% of normal weight students get at least A's and B's or better, whereas 42% of overweight students are getting these grades. On other school related topics, there seems to be little connection to BMI categories. Over 77% of normal weight students have generally positive feelings about their school, compared to 73% of overweight youth. Ninety-three percent on all high school students have never skipped school compared to 88% of overweight students.

Students who are at risk of being overweight or are overweight report getting more teasing than other students. About 36% report being "picked on" in the last 30 days. This is higher than the 29% of normal weight youth.

Students reporting thoughts of suicide and depression are slightly differentiated by BMI categories, as shown in Table 6. Youth who fall into the CDC's normal weight category have fewer thoughts of suicide than all other categories. Youth who fall outside of the CDC's normal range tend to have more thoughts of suicide and feelings of depression.

## **Key Findings**

According to DCYA 2005 data, more than 6500 Dane County youth (extrapolated from 32,000 youth - Wisconsin DPI 2007) ages 14-18 are either at risk of being overweight or overweight. Although the percentage of teens affected (21%) is lower than CDC national data (29%), this is still a significant population of youth.

Below is a summary of the findings in this report that may help our community develop policies and strategies to confront this growing health problem. The key data that have emerged from this analysis are as follows:

- Boys (age 13-18) in Dane County are more likely to be overweight than girls.
- About 1/3 of all high school students reported getting very little exercise at levels of 2 times per week or less. Almost 60% of all high school youth are getting less than the CDC-recommended 5 times per week of vigorous exercise.
- More than 27% of high school students drink more than 3 sugary drinks per day with overweight students drinking the most at 35%.
- Overweight students report getting lower grades than normal weight students (42% AB or above and 61% AB or above, respectively).
- Overweight students do report negative social issues, like getting more teasing, feeling more depressed and being suicidal.

## Recommendations

Youth weight is a complex issue involving the interaction of behavioral, environmental, cultural, socioeconomic and genetic factors. Although there is no one simple solution lifestyles to address the issue of childhood and teen obesity, there are steps that parents, schools, communities and the youth can take to promote healthier choices.

Together, parents and youth can:

- ❖ Make sure children get regular medical check-ups so that weight problems can be identified and addressed.
- ❖ Get and stay active! Take a walk, ride a bike, go to a county park and hike, play soccer or basketball, jump rope or walk the dog!
- ❖ Walk to destinations whenever possible instead of driving.
- ❖ Limit TV or computer use to 2 hours a day (adults and youth) and replace TV time with family activities.
- ❖ Plant a garden as a family and enjoy fresh, healthy, home-grown foods.
- ❖ Join a farm co-op with neighbors and receive fresh, organic vegetables all summer long.
- ❖ Take advantage of community health fairs, community or neighborhood centers, and Youth Resource Centers that encourage and promote physical activities.

According to the CDC and the Department of Public Health, parents can do the following to promote healthy lifestyle from the time their children are toddlers through their teenage years.

- ❖ Reduce the availability of soda, juice drinks or sport drinks and encourage children to drink water instead.
- ❖ Cut out snack foods that are high in fat or sugar with little nutritional value—keep apples, celery, nuts and other healthy snacks available.
- ❖ Offer healthy food choices every day and let children decide how much to eat so they learn how to moderate their own food intake.
- ❖ Schedule regular family mealtimes and regular snack times—make sure children eat breakfast.
- ❖ Limit how often the family eats high fat, fast food meals.
- ❖ Use praise to encourage healthy behavior and make all children feel valued and loved regardless of their size or weight. Teasing a child in an attempt to control his or her weight is counterproductive and can be harmful.

Next to being at home, youth spend the majority of their time in school. The Youth Commission supports the efforts of Dane county school districts to develop Wellness policies to promote physical activity and healthier nutrition. Policy is the first step. It is critical that these policies be put into practice and monitored over time. To this end, the Youth Commission encourages schools to:

- ❖ Offer after school or extra curricular activities that are available to all youth and not restricted due to ability to pay.
- ❖ Teach youth about nutrition and the importance of exercise through Health, Family & Consumer Education, Science and Physical Education classes.
- ❖ Limit the sale of candy, soda and other high calorie foods from vending machines on school grounds during school hours.
- ❖ Offer healthy, appetizing and affordable lunch options.

Youth spend time at community, neighborhood and youth resource centers. We strongly encourage these facilities to limit the use of high calorie foods and drinks, to promote physical activities and to provide youth with information on the importance of exercise and healthy eating.

Working together, we can make a difference in the health of youth today and help them become healthy adults in the future.

## References

American Academy of Pediatrics. Prevention of Pediatric Overweight and Obesity: American Academy of Pediatrics Policy Statement; Organizational Principles to Guide and Define the Child Health System and/or Improve the Health of All Children; Committee on Nutrition. *Pediatrics*. 2003;112:424-430

Boynton-Jarrett, Renee' SM, Impact of Television Viewing Patterns on Fruit and Vegetable Consumption Among Adolescents. *PEDIATRICS* Vol. 112 No. 6 December 2003, pp. 1321-1326.

Centers for Disease Control and Prevention. Overweight and Obesity: Childhood Overweight. <http://www.cdc.gov/nccdphp/dnpa/obesity/childhood/> Accessed on 12/18/07

Center for Science in the Public Interest. Liquid Candy: How Softdrinks are Harming America's Health. <http://www.cspinet.org/liquidcandy/index.html> Accessed 12/19/07

Childhood Obesity in the United States: Facts and Figures. September 2004. Institute of Medicine of the National Academies.

Davis M, Gance-Cleveland B, Hassink S, Johnson R, Paradis G, Resnicow K. American Academy of Pediatrics. Recommendations for Prevention of Childhood Obesity: 2007. [http://www.pediatrics.org/cgi/content/full/120/Supplement\\_4/S229](http://www.pediatrics.org/cgi/content/full/120/Supplement_4/S229). Accessed December 14, 2007

Haas JS. Lee LB. Kaplan CP. Sonneborn D. Phillips KA. Liang SY. The association of race, socioeconomic status, and health insurance status with the prevalence of overweight among children and adolescents. *American Journal of Public Health*. 93(12):2105-10, 2003

Kelder S, Perry C, Klepp K, Lytle L. Longitudinal tracking of adolescent smoking, physical activity, and food choice behaviors. *American Journal of Public Health*. 1994; 84 :1121 -1126

Kotz K, Story M. Food advertisements during children's Saturday morning television programming: are they consistent with dietary recommendations? *J Am Diet Assoc*. 1994; 94 :1296 -1300

Obesity in minority populations. Washington (DC): American Obesity Association;2005. [http://www.obesity.org/subs/fastfacts/Obesity\\_Minority\\_Pop.shtml](http://www.obesity.org/subs/fastfacts/Obesity_Minority_Pop.shtml). \* Accessed January 8, 2007.

Obesity in minority populations. Washington (DC): American Obesity Association;2005.

Preventing obesity and chronic diseases through good nutrition and physical activity. Atlanta (GA): Centers for Disease Control and Prevention; 2005. <http://www.cdc.gov/nccdphp/publications/factsheets/Prevention/obesity.htm>. Accessed January 8, 2007.

Mary Ann S. Van Duyn, PhD, Adapting evidence-based strategies to increase physical activity among African Americans, Hispanics, Hmong, and Native Hawaiians: a social marketing approach. *Prev Chronic Dis* 2007;4(4).