

An Epidemic: Childhood Obesity



SELF-STUDY MODULE FOR WIC CPA'S

Project Coordinators:

Buddy Lyle, EdD
Susan Handford, MS, RD, LD
Susan Winkler, MS, CFCS
Cristy Sellers, MS, RD, LD
Martha Hall, RN, MSN

In Cooperation With:

Arkansas Department of Health
WIC Nutrition and Breastfeeding
5800 W. 10th, Suite 810
Little Rock, AR 72204

Author “An Epidemic: Childhood Obesity”

Lea Ann Norton, MS, RD, LD

Graphic Designer

Sandy Carson



In accordance with Federal law and U.S. Department of Agriculture policy, this institution is prohibited from discriminating on the basis of race, color, national origin, sex, age, or disability. To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 1400 Independence Avenue, SE, Washington, D.C. 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

Developed and produced in 2004/2005.

Revised July 2013.

CONTENTS

Objectives.....	4
Pre-Assessment.....	5
Orientation/Rationale.....	6
Defining Overweight in Children and Adolescents.....	6
Obesity Rates.....	8
Common Consequences of Obesity.....	11
Causes of Obesity.....	13
Desired Outcomes.....	19
Post-Assessment.....	20
Bibliography.....	22
Appendix A: Growth Charts	

OBJECTIVES

Upon completion of this module the participant will be able to:

1. Describe the extent of the problem of childhood obesity by listing at least three statistics.
2. List at least three consequences of childhood obesity.
3. List at least three causes of childhood obesity.



PRE-ASSESSMENT

Complete the following questions. Upon completion of the module, a post assessment will be completed.

1. T___ F___ Research has shown that most young children are unable to regulate their food and energy intake regardless of the type of food and the way it is provided by the family.
2. T___ F___ Obesity rates in low income preschoolers, after decades of rising, began to level off from 2003 to 2008 and now are showing small declines in many states, including Arkansas.
3. T___ F___ The Centers for Disease Control BMI-for-age charts should be used for ages 0-18.
4. T___ F___ Daily calorie consumption has decreased in children over the past 15 years.
5. T___ F___ The Body Mass Index is a screening tool that is used to help identify a child's weight status.
6. T___ F___ In Arkansas, white school children have the highest prevalence of overweight.
7. T___ F___ Certain medical conditions in children tend to rise as childhood obesity increases.
8. T___ F___ Current research indicates that breastfeeding has no effect on reducing the risk of childhood obesity.
9. T___ F___ Studies have shown that obesity in birth parents has little to do with obesity in their children.
10. T___ F___ Evidence indicates that early environments greatly impact the development of eating and activity patterns of children.

ORIENTATION/RATIONALE

Childhood obesity is a serious and complex issue with many health and social consequences that often continue into adulthood. The rate at which obesity in children has risen is at epidemic proportions. If the rate of overweight continues to climb, our society will face many health, financial, and social challenges. Since there is no proven or easy way to treat obesity, prevention is crucial. WIC clinics are important places to help families develop and maintain healthy growth.

DEFINING OVERWEIGHT IN CHILDREN & ADOLESCENTS

Measurements of height and weight help to assess the overall health and nutritional status of children and adolescents. In the past, overweight in children was defined using the weight for height growth charts. Today, to identify children who are overweight, measures of height and weight are combined in the body mass index (BMI) for ages 2 to 20 years. BMI measures how heavy the body is, which is a good indicator of how fat the body is. However, the BMI classification is a screening tool only and should not be used as the final indicator of whether or not a child has a weight problem that requires attention.

- An advantage of using BMI-for-age is that it can be used to track growth from age 2 years through adulthood. BMI scales and standardized growth charts are available to compare a child's size and growth patterns to standards (see appendix).

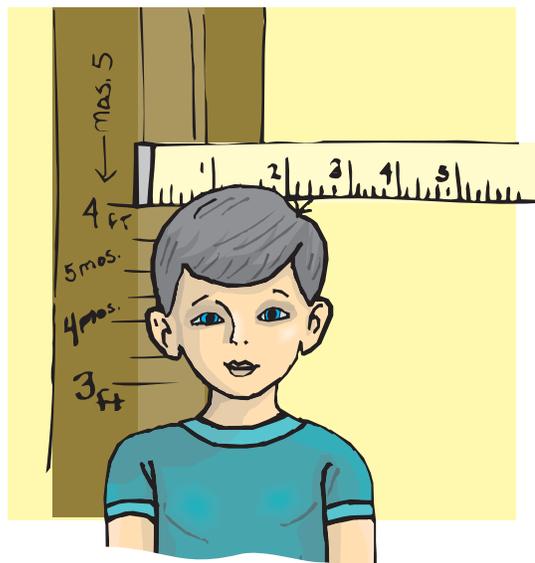
Growth charts showing weight for height are still used for children up to two years of age. For an in depth review of the growth charts you may go to the following website: <http://www.cdc.gov/growthcharts/>

Today, to identify children who are overweight, measures of height and weight are combined in the body mass index (BMI) for ages 2 to 20 years.

- A calculator friendly formula to determine BMI is as follows:

$$\text{BMI} = \text{weight (lbs.)} \div \text{height (in.)} \div \text{height (in.)} \times 703$$

- Once BMI is determined, it is plotted on the Body Mass Index-for-Age Percentiles. The BMI percentile is used to determine weight status using the following categories:
 - **Obese:** BMI-for-age greater than or equal to 95th percentile.
 - **Overweight:** BMI-for-age between 85th and less than 95th percentiles.
 - **Healthy Weight:** BMI-for-age between 5th and less than 85th percentiles.
 - **Underweight:** BMI-for-age less than 5th percentile.
- It is expected that 5% of 100 children of the same gender and age will be over the 95th percentile on the BMI-for-age charts. When the percentage of overweight exceeds the expected 5%, then there is a problem. Similarly, it is expected that 10% have a BMI-for-age between the 85th and 95th percentiles.



Activity 1

Jason, a 4 year old boy, weighs 51 pounds and is 42 inches tall. What is his calculated BMI?

- A) 20
- B) 25
- C) 25

What percentile on the 2000 CDC growth chart does this BMI plot? (Find appropriate sex and age chart in the appendix).

- A) 20th
- B) <5th
- C) >95th

Jason's BMI indicates he is _____.

- A) Underweight
- B) Normal Weight
- C) Overweight
- D) Obese

OBESITY RATES (Nation, State, Local)

In the United States, more children are overweight than ever before with no slow-down in sight. No race, gender, or age group has been left behind.

National Data

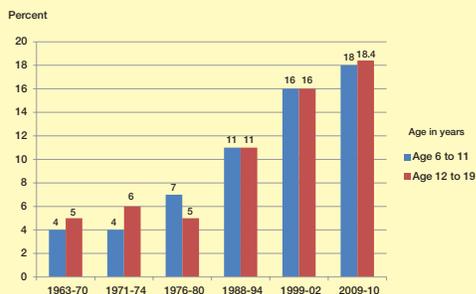
- Hispanic and non-Hispanic black adolescents have had an explosion of weight gain. From the 1988–1994 National Health and Nutrition Examination Surveys (NHANES) study to the 2009-2010 study, obesity in non-Hispanic black boys increased from 10.7% to 22.6%, and in Hispanic boys from 14.1% to 28.9%. The prevalence of obesity in these two groups increased at least 10 percentage points.
- The nationwide rise in obesity from 1963 to 2010 for the ages of 6-19 years is illustrated in Figure 1. As seen in Figure 1, the increase in prevalence in overweight children has been steady since 1963 with both age categories (6-11; 12-19) reaching 18% in 2009-2010.



Arkansas Data

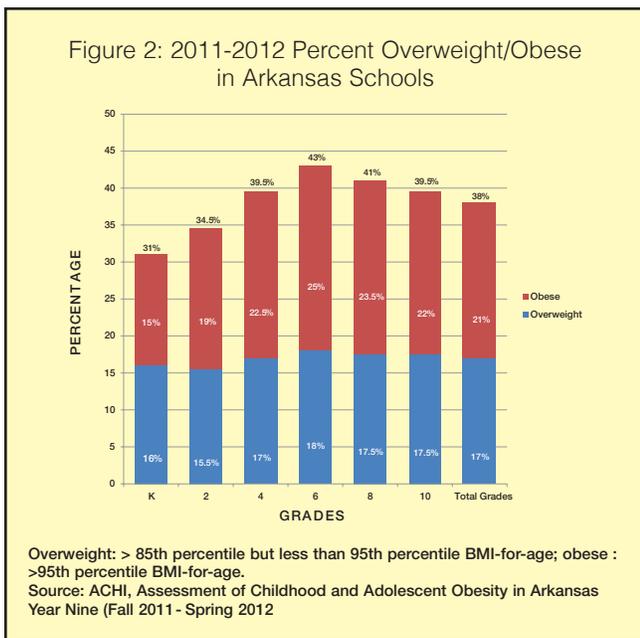
- Parents of school children in Arkansas now know their children's BMI. Act 1220 of the 2003 Arkansas General Assembly created an approach to address the state of Arkansas' problem with childhood obesity. All students in even-numbered grades, kindergarten through 10th, are measured unless the parent provides the school with a written refusal, the child is absent from school, or for another specified reason. This began in the 2003-2004 school year. The results revealed that the problem of childhood obesity in Arkansas was even more than expected with 38% of the school children being either overweight or obese. These results still hold true as evidenced by year nine (2011-2012) results.

Figure 1: Prevalence of Obesity Among Children & Adolescents Ages 6-19 Years

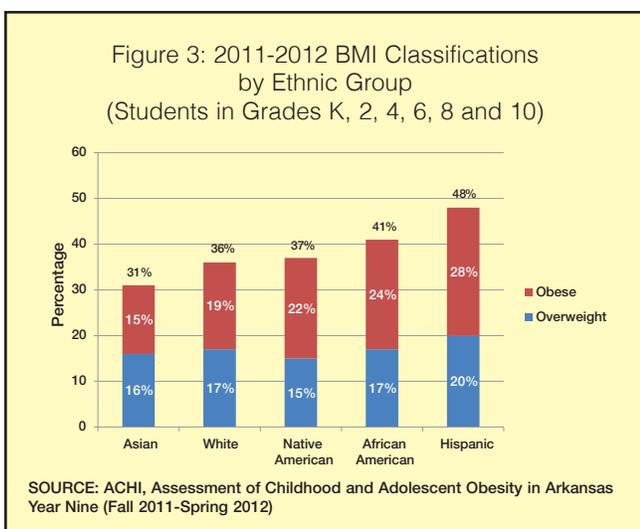


Note: Excludes pregnant women starting with 1971-1974. Pregnancy status not available for 1963-65 and 1966-70. Data for 1963-65 are for children 6-11 years of age; data for 1966-70 are for adolescents 12-17 years of age, not 12-19 years. SOURCE: CDC/NCHS, NHES and NHANES.

■ Figure 2 shows the percentage of children overweight and those obese in elementary, middle school, and high school.



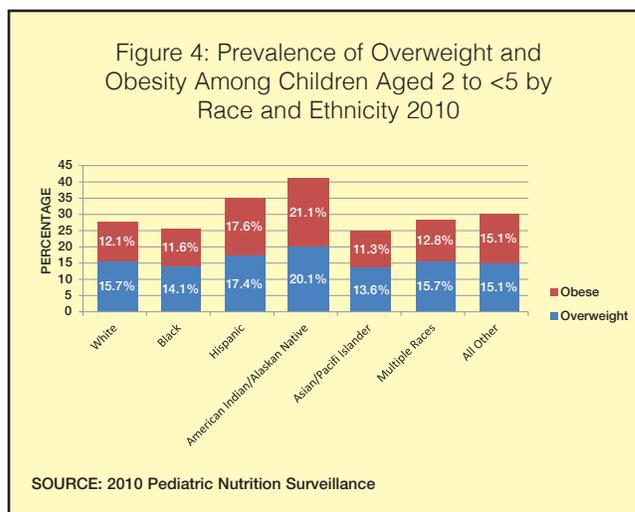
■ Overall, Arkansas schools have a greater proportion of Hispanic children that are obese when compared to all other ethnic/racial groups – Asians having the least proportion of overweight/obese children. However, no race seems to be beating the obesity battle. Figure 3 shows the percentage of Arkansas students by ethnic group in the BMI classifications.



For detailed information on BMI's of Arkansas' school children see <http://www.achi.net/ChildObDocs/121207%20State%20Report%20FINAL%202.pdf>

■ Preschool Arkansans have been no exception to the growing overweight trend.

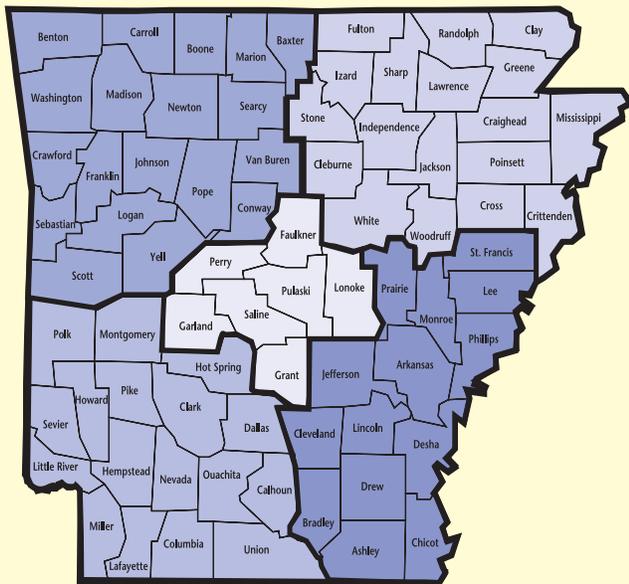
Figure 4 illustrates the prevalence of overweight and obesity among children 2 to 5 years by race and ethnicity. Unfortunately, both the State and the Nation have too many preschool children in these categories.



Obesity rates in low income preschoolers, after decades of rising, began to level off from 2003 to 2008 and now are showing small declines in many states. However, Arkansas is one of the states that has had no change in its preschooler obesity rates.

Figure 5 (next page) shows the percentage of obese preschoolers in each county in Arkansas. It ranges from 6.1% in Newton county to 19.3% in Bradley county.

Figure 5: 2010 Pediatric Nutrition Surveillance, Arkansas Comparison of Overweight by County Children Aged < 5 years (2,3)



County	% Obese (Rank)(4)	County	% Obese (Rank)(4)
Arkansas	15.7 (74)	Lincoln	11.0 (37)
Ashley	8.7 (10)	Little River	12.3 (52)
Baxter	9.9 (24)	Logan	8.5 (8)
Benton	10.7 (34)	Lonoke	7.7 (5)
Boone	9.8 (20)	Madison	11.5 (46)
Bradley	19.3 (76)	Marion	7.9 (6)
Calhoun	12.6 (56)	Miller	9.3 (15)
Carroll	13.9 (69)	Mississippi	11.1 (38)
Chicot	13.7 (68)	Monroe	10.9 (36)
Clark	9.8 (20)	Montgomery	9.8 (20)
Clay	13.2 (63)	Nevada	12.2 (51)
Cleburne	14.1 (71)	Newton	6.1 (1)
Cleveland	11.2 (40)	Ouachita	11.4 (42)
Columbia	8.7 (10)	Perry	12.0 (49)
Conway	12.7 (57)	Phillips	11.4 (42)
Craighead	10.5 (30)	Pike	13.4 (65)
Crawford	8.3 (7)	Poinsett	13.6 (66)
Crittenden	10.5 (30)	Polk	9.1 (13)
Cross	10.0 (25)	Pope	10.6 (33)
Dallas	11.4 (42)	Prairie	7.5 (4)
Desha	11.3 (41)	Pulaski	10.4 (28)
Drew	8.5 (8)	Randolph	9.4 (16)
Faulkner	9.8 (20)	Saline	10.2 (26)
Franklin	7.3 (3)	Scott	13.2 (63)
Fulton	8.7 (10)	Searcy	12.0 (49)
Garland	9.4 (16)	Sebastian	12.5 (54)
Grant	10.8 (35)	Sevier	13.0 (60)
Greene	13.1 (61)	Sharp	11.1 (38)
Hempstead	14.1 (71)	St. Francis	12.4 (53)
Hot Spring	9.2 (14)	Stone	9.4 (16)
Howard	11.5 (46)	Union	12.8 (58)
Independence	11.4 (42)	Van Buren	13.9 (69)
Izard	10.3 (27)	Washington	13.1 (61)
Jackson	10.5 (30)	White	10.4 (28)
Jefferson	9.7 (19)	Woodruff	6.4 (2)
Johnson	17.1 (75)	Yell	12.8 (58)
Lafayette	12.5 (54)	Unknown Counties	11.6 (48)
Lawrence	13.6 (66)	Entire State	11.1
Lee	14.6 (73)		

- (1) Reporting period is January 1 through December 31
- (2) Based on 2006 WHO growth chart percentiles for children under 2 years of age; high weight-for length labeled as "Obese" is defined as greater than or equal to 97.7th percentile
- (3) Based on 2000 CDC growth chart percentiles for children 2 years of age and older; overweight is defined as BMI-for-age greater than or equal to 85th to less than 95th percentile; obesity is defined as greater than or equal to 95th percentile.
- (4) Rank compares this county's rate to other counties. Rank 1 = best rate

Activity 2

Access the following website to find the prevalence of overweight and obesity in the schools in your area (go to page 13 of the document). Create a list of some potential factors in the school and community environment which may be associated with this prevalence (positive or negative). You may want to dialogue with colleagues.

http://www.achi.net/bmi/district_year.asp?search yeartable=Districts_2011_2012

Activity 3

What is the percent of obesity in children less than 5 years old in your county? List some common characteristics of the obese preschoolers and their families that you have observed in clinic.

Example: Watch a lot of television.

COMMON CONSEQUENCES OF OBESITY



Sarah is a 7 year old girl with a BMI of 25 (weight, 90 pounds; height, 50"). Sarah is obese. She has had trouble keeping up in her 2nd grade class with learning and her behavior has been anything but pleasant. Upon a recent visit to the doctor, a referral was made to a sleep disorder clinic where it was discovered that Sarah has sleep apnea that is affecting her behavior as well as her learning. Her parents are beginning to fear for Sarah's physical and emotional health. They are ready to help Sarah.

Diseases once seldom seen in children are now on the rise due to the childhood obesity epidemic. Problems associated with obesity in children are similar to those seen in adults. Over the past several decades, obesity-related annual hospital costs of 6-17 year olds tripled from \$35 million during 1979-81 to \$127 million during 1997-1999. The primary diagnoses were diabetes, obesity, sleep apnea, and gallbladder disease.

Children are now living life with cardiovascular risk factors such as high blood pressure, hyperlipidemia, and/or elevated insulin levels that put them at risk for earlier cardiovascular disease.

A few of the more common complications of childhood obesity are listed below:

Insulin Resistance & Type 2 Diabetes

- Insulin resistance is a precursor for Type 2 diabetes (formerly called adult-onset diabetes).
- Incidence of Type 2 diabetes has increased from virtually none (1-2%) to approximately 45% of all new cases of diabetes in children and adolescents.
- There is usually a family history of Type 2 diabetes. It is predominant among African American, Hispanic, Asian, Pacific Islander, and American Indian descent.

Hyperlipidemia

- Hyperlipidemia refers to high levels of types of fat in the blood – cholesterol and triglycerides.
- It is related to insulin resistance.
- It increases the risk for heart disease.

Hypertension

- Hypertension causes the heart to work harder and may damage the heart, brain, and kidneys.
- Obese children are at approximately a 3-fold higher risk for hypertension than non-obese children.



Sleep Disorders

- Sleep apnea is a disorder in which breathing is briefly suspended repeatedly during sleep.
- A 20-year review of obesity-associated diseases among children aged 6 to 17 conducted by the CDC found a significant increase in hospital discharges for a number of obesity-related medical conditions. Discharges for sleep apnea increased 436%.

- Prevalence of obstructive sleep apnea among obese children and adolescents can be as high as 60%.

Psychosocial Effects & Stigma

- Frances Berg (2004) states: “Overweight can be a severe social handicap. Children who are teased, labeled, and stigmatized may have long-term damage to self-esteem and body concept. Some experts suggest their greatest problems are probably not health risks, but emotional and psychological damage.”
- Adolescents that engage in high risk behaviors, such as smoking, drinking alcohol, and early sexual activity also may be at greater risk of poor dietary and exercise habits.
- White girls who view their body negatively are at a greater risk for developing eating disorders such as bulimia and anorexia.
- Overweight children and adolescents report that others assume they are inactive or lazy, stronger and tougher than others, do not have feelings, and are unclean.

Other Consequences Include

- Early Puberty
- Asthma
- Gallstones
- Orthopedic problems

CAUSES OF OBESITY

Possible Answers to the Question ... Why Are We Bigger?

There are many factors that contribute to overweight. Some things cannot be changed such as genetics, but the environment in which children are raised can (ideally) be changed. Yes, you may have the fat genes, but the environment interacts with the genes to either increase or decrease your chances of obesity.

Sarah's parents are both overweight. Sarah's mom has always struggled with her own weight. She gained a lot of weight when she was pregnant with Sarah and has never been able to lose it all. She has tried many diets that in the end left her hungry and overeating. Sarah's dad has gradually gained weight since his early 20's and is now considered overweight. Sarah's parents do not exercise regularly and seldom do outside activities with Sarah. They enjoy watching movies and playing card and board games with her instead.

Sarah's parents began to get concerned about Sarah's weight when she would come home crying that some of her classmates had called her "fat and lazy". They had been allowing Sarah to eat anything she wanted anytime she wanted, so they decided to try to limit the amount of food she ate, only to find her sneaking chips out of the pantry during the middle of the night.

Genetics

The genes we receive cannot be changed, and for some of us, these genes lead to weight gain.

- Studies looking at children who were adopted at birth have shown that their weight statuses are more like those of their birth parents rather than that of their adoptive parents.
- A child with 2 overweight parents has an 80% chance of becoming overweight.
- "... genetic predisposition has been around for a long time. It's just being awakened in this toxic environment. Your genetics puts you on the cliff, but environment pushes you off." (Robert Kramer, MD as quoted in "Davis" 2005)

Environmental

- Those who have the family genes for obesity are gaining more weight and at a younger age than ever before. This only highlights the importance of the role of the environment in urging the fat gene to be expressed.
- A person's early exposure to either a healthy or unhealthy environment of eating and activity greatly impacts habits a child will develop and take into adulthood.
- In addition to eating and activity patterns, environmental factors related to weight status include the prenatal environment, socio-demographic factors, and family.



Prenatal Environment

For a rapidly growing baby in his mother's womb, what does or does not happen daily may have lasting impact.

- Both low birth weight and high birth weight babies are at potential risk for overweight and the development of chronic diseases in adulthood.
- Targeting women for proper nutrition before and during pregnancy, improved care of pregnancy related (gestational) diabetes, and attention to all causes of low and high birth weight babies could prevent overweight/obesity.

Sociodemographic Factors

Basically, a lower socioeconomic status is an important predictor for overweight/obesity in U.S. children; however, it does not hold true in all ethnic groups.

- There is a relationship between a lower socioeconomic status and *adult* obesity. This involves income, education, and/or occupation.
- The same holds true for pre-adolescent white girls, but not in pre-adolescent black girls. This is probably due to the cultural and racial differences in the concept of beauty and style, body image perception, and weight control behaviors. Black girls who are overweight/obese have a better self-esteem, and do not perceive their physical appearance and social acceptance as negatively as do overweight white girls.

Family Influences

Parents serve not only as a gene source, but also provide the environment where a child is raised. This environment either positively or negatively effects weight status.

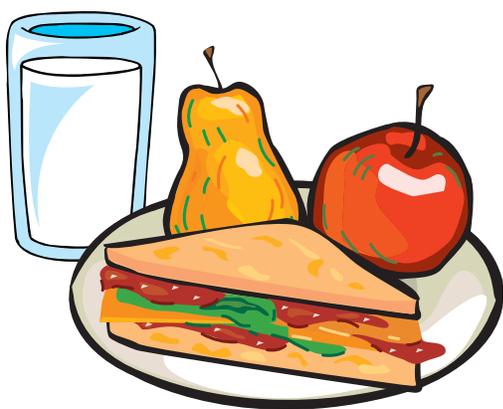
MISPERCEPTIONS

A focus group study of low-income mothers found that they had some misperceptions about feeding and weight status of their children. These include:

- "A fat baby is a healthy baby."
- Big babies don't get enough to eat unless fed from the table even before an appropriate age.
- Not seeing overweight as a problem in their children until the children have been teased or become inactive; as opposed to the healthcare provider stating that the BMI indicates overweight.

THE PARENT'S ROLE

Children who do not learn to eat well as children – to eat a variety of good foods when they are hungry and stop when they are full – can become at risk for adulthood obesity. Families play a critical role in helping children be able to eat just what they need – not too much, not too little. During infancy and childhood, the types of food available and the way in which it is offered are critical in forming a child's eating behaviors.



- Parents are responsible for what healthy foods are presented and the manner in which they are presented. Children then are responsible to select from the food choices and eat as much or as little as desired. This is known as the Division of Responsibility in eating.
- If a child has not been allowed to self-regulate his/her own caloric needs (eat when hungry and stop when full), then even a very small but prolonged intake of too many calories (energy) could result in significant weight gain. Children who have become either over or under-eaters may have not been allowed to regulate their own eating due to either overly controlling parents, parents who have set inadequate limits, or parental neglect.

Physical Activity Patterns

Regular participation in physical activity is critical to health and body weight. If a child is not using the energy (calories) from their food, then the extra calories are stored as fat. Inactivity is very common among American youth. Within each child's environment are factors that play a part in how much activity the child will participate.

PARENTS

Parents influence the kind and amount of physical activity in which their children participate. Parents enable children by making sure they have the resources for physical activity (time, place, equipment, etc.) and by engaging in physical activity themselves (modeling) and with their children.

MEDIA

Another factor in determining the physical activity level of a child is how much time is spent in the inactivity of:

- Watching television
- Playing video games
- Having recreational computer time

Increased hours of television viewing reduces the opportunity for children to be active and is a strong predictor of overweight in children. Children also are influenced by advertising of high fat/high sugar snack foods. The American Academy of Pediatrics recommends limiting television and media time to no more than two hours per day. Television and other entertainment media should be avoided for infants and children under age 2.

SCHOOLS

Schools play an important part in physical activity. The amount and quality of the physical education offered can greatly increase or decrease a child's level of activity.

COMMUNITY

The way a community is characterized plays an important role in physical activity. A physically active community will offer:

- Safety – if it is not safe to go outside, either because of the traffic or crime, then there is less physical activity.
- Affordable sports programs and recreational areas.
- Sidewalks and trails.



AGE

Also of concern is the age-related decline in physical activity.

- An age-related decline in physical activity in girls as young as 6-9 years of age has been noted.
- Adolescence appears to be a developmental time during which physical activity declines.

Diet and Nutrition

Sarah was a 10 pound baby. Her mother attempted to breastfeed her but was told (wrongly, of course) that she would never produce enough milk to feed that big of a baby. Grandparents would say what a healthy baby Sarah was because she was so “plump”. When Sarah would try to stop her bottle feeding because she was full, Mom would keep working until the whole bottle of formula was gone. Sarah currently drinks whole milk, enjoys fruit drinks, skips breakfast, eats the school lunch, and eats out at least 3 nights a week at fast food restaurants.

The “Diet Factor” starts early. In fact, a pregnant woman's nutritional status and her choice on whether or not to breastfeed play a role in whether or not her child will be at increased risk for obesity. Once the baby is born, the parents are responsible for offering developmentally appropriate, good and varied food for optimal growth and development. The first thing a Mom can do to help lower baby's risk of obesity is to breastfeed – the longer, the better. It is thought that components in human milk, as well as the feeding and parenting patterns associated with nursing, decrease the risk of obesity.

After the age of 2 years, the Dietary Guidelines for Americans and the MyPlate food guidance system may be used to guide parents in providing good and varied foods. Go to www.choosemyplate.gov for an in-depth view of healthy eating specific to age, gender, and activity level.

WHAT, WHERE AND HOW MUCH ARE OUR CHILDREN EATING?

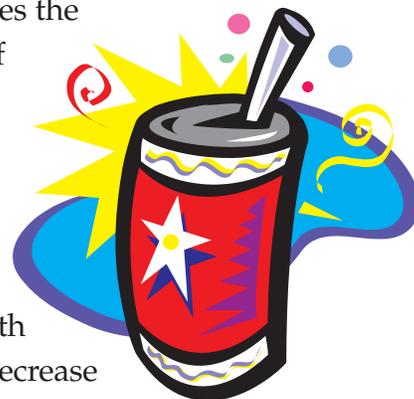
- Over the past 15+ years, the amount of calories children are consuming have increased by 300 calories a day.
- The diets of children are healthier today than in the past, but they still continue to fall short of the diet of variety and moderation illustrated by the MyPlate guidance.
- It is estimated that only 30% of children currently meet the goals for daily intake of grains, meats, fruits and vegetables and that discretionary fat and added sugars represented nearly 40% of the energy intake of 2 to 18 year-old children.

Table 1 details the major sources of added sugars in the U.S. adolescent's diet.

Table 1: Major Sources of Added Sweetener Intakes by U.S. Adolescents		
% of Total Added Sweetener Intake		
Food	Female	Male
Breakfast Cereals	5	6
Sweetened Grains	11	9
Sugars/Sweets	17	15
Milk Products	7	6
Fruit Drinks	11	12
Soft Drinks	37	41
<i>Source: 1994-1996 CSFII (N. McQuillan-Copperman)</i>		

FLUIDS

- In recent decades the consumption of soft drinks has increased dramatically among U.S. children and adolescents, with an associated decrease in milk consumption.
- The American Academy of Pediatrics recommends that fruit juice consumption be limited to 4-6 oz/day for children 1-6 years of age and 8-12 oz/day for children 7-18 years of age. These recommendations were based on consideration of nutrient contribution and gastrointestinal problems.



EATING OUT

- Food eaten away from home is increasing in the U.S.
- Frequent consumption of foods at fast food and other restaurants has been associated with a diet high in fat and low in nutrient density.
- Children who eat dinner with their families at home have a better quality diet than those who do not – more fruits and vegetables, fewer fried foods and soda, less fat, and more micronutrients.

SCHOOL

- While a substantial percentage of away-from-home food comes from fast food restaurants, school meals represent another major source for school-aged children.

- There are many nutritional benefits of school meals. Meals offered in the National School Lunch Program and the School Breakfast Program have been required to adhere to the latest Dietary Guidelines for Americans. New guidelines are lowering sodium and fat content of school meals.
- Many schools offer á la carte foods and beverages, have snack bars, vending machines, and concession stands that can wreak havoc on a child's eating.
- Each school district in Arkansas is required to have a school Nutrition and Activity Committee. Parents and health professionals can get involved.

BREAKFAST

- Overweight children have been shown to eat smaller breakfasts than their non-overweight peers.
- It has been suggested that eating breakfast reduces fat intake and limits snacking over the remainder of the day.

FOOD INSECURITY

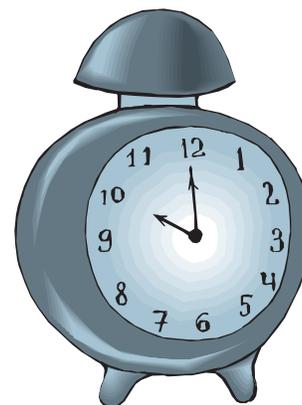
- Paradoxically, moderate to mild food insecurity (i.e. not having the appropriate kind and amount of food) may play a role in the cause of overweight.
- Lack of food appears to result in preoccupation with food which leads to binges once food is again available.
- A cycle of food shortages (e.g., when money for food runs out before payday or food stamps run out before the end of the month) may increase reliance on cheap high fat or empty calorie foods, resulting in weight gain over time.

BARRIERS TO HEALTHY EATING

Numerous barriers to following a healthy eating pattern have been identified.

Among adults, factors cited included:

- Lack of time
- Expense
- Lack of willpower to give up favorite foods
- Difficulty changing ingrained habits
- Lack of support from family and friends
- Lack of availability of healthy choices
- Lack of agreement on the part of experts regarding which foods are healthy
- Cultural perceptions toward foods



Generally lack of knowledge was not reported as a barrier. Preventing disease, maintaining health and reducing weight have been the main benefits reported by adults for eating healthy.

Activity 4

What are some other common misperceptions of nutrition and overweight that you and your colleagues have observed in the WIC clients you see? See page 14.

Activity 5

What are some other barriers to a healthy diet that you and your colleagues have personally encountered as well as your clients? Which is your strongest barrier?

DESIRED OUTCOMES

The healthcare providers in the Local Health units are in a great position for promoting healthy weight in children.

Healthcare workers who will make the most impact will...

- Embrace and model a healthy lifestyle.
- Maintain the correct and current health and nutrition information knowledge base.
- Be able to assess and prioritize the client's health issues which need to be addressed.
- Effectively communicate with and motivate the client.
- Refer for treatment when necessary.
- Accept and like herself and the client.
- Become active in her community to promote healthful eating and safe physical activity for every body size and shape.

Healthcare providers need to understand that "success" with weight management in a growing child is not weight loss but helping the family have...

- A greater understanding and acceptance of individual differences in body sizes and shapes.
- Improvement in the Division of Responsibility in eating between parent and child.
- A more physically active life-style.

- A more healthful eating pattern.
- An improved ability to deal with teasing and to talk about feelings.
- Normalization of medical indicators such as blood pressure or cholesterol.
- Weight stabilization or decreased rate of weight gain.
- Improved self-esteem.

If Sarah's Mom would have had a WIC CPA to help her with her food choices when she was pregnant, maybe Sarah wouldn't have been such a big baby.

If Sarah's Mom would have had a WIC CPA to guide her in her breastfeeding, maybe Sarah would not have been force fed.

If Sarah's Mom would have had a WIC CPA to guide her in establishing her role as the provider of good food and allowing Sarah to choose whether or how much she ate, maybe Sarah would be able to recognize when she was hungry and stop when she got full.

If Sarah's Mom would have had a caring CPA, maybe, just maybe, Sarah would not be crying over being called "fat and lazy", having problems learning because of sleep apnea, or feeling like she is a source of frustration for her parents.

Maybe just maybe.

Are you ready to be that awesome, impactful WIC CPA?

POST-ASSESSMENT

Complete the following items after reviewing the module.

1. T___ F___ Research has shown that most young children are unable to regulate their food and energy intake regardless of the type of food and the way it is provided by the family.
2. T___ F___ Obesity rates in low income preschoolers, after decades of rising, began to level off from 2003 to 2008 and now are showing small declines in many states, including Arkansas.
3. T___ F___ The Centers for Disease Control BMI-for-age charts should be used for ages 0-18.
4. T___ F___ Daily calorie consumption has decreased in children over the past 15 years.
5. T___ F___ The Body Mass Index is a screening tool that is used to help identify a child's weight status.
6. T___ F___ In Arkansas, white school children have the highest prevalence of overweight.
7. T___ F___ Certain medical conditions in children tend to rise as childhood obesity increases.
8. T___ F___ Current research indicates that breastfeeding has no effect on reducing the risk of childhood obesity.
9. T___ F___ Studies have shown that obesity in birth parents has little to do with obesity in their children.
10. T___ F___ Evidence indicates that early environments greatly impact the development of eating and activity patterns of children.



Post-Assessment Answers

- 1.** T___ F___ Research has shown that most young children are unable to regulate their food and energy intake regardless of the type of food and the way it is provided by the family.

False. If children are provided appropriate foods in the context of a healthy feeding environment (parents and children stay within their area of responsibility), then a child is more likely to be able to regulate his food and energy intake.

- 2.** T___ F___ Obesity rates in low income preschoolers, after decades of rising, began to level off from 2003 to 2008 and now are showing small declines in many states, including Arkansas.

False. There has been no change in rates in Arkansas.

- 3.** T___ F___ The Centers for Disease Control BMI-for-age charts should be used for ages 0-18.

False. They should be used for ages 2-20.

- 4.** T___ F___ Daily calorie consumption has decreased in children over the past 15 years.

False. Total calorie intake of U.S. children has increased.

- 5.** T___ F___ The Body Mass Index is a screening tool that is used to help identify a child's weight status.

True.

- 6.** T___ F___ In Arkansas, white school children have the highest prevalence of overweight.

False. Hispanic school children have the highest prevalence.

- 7.** T___ F___ Certain medical conditions in children tend to rise as childhood obesity increases.

True. Diseases commonly seen in adults are on the rise as they are obesity related.

- 8.** T___ F___ Current research indicates that breast-feeding has no effect on reducing the risk of childhood obesity.

False. Breastfeeding helps to decrease the risk of overweight.

- 9.** T___ F___ Studies have shown that obesity in birth parents has little to do with obesity in their children.

False. Genetics play a role in the risk of obesity.

- 10.** T___ F___ Evidence indicates that early environments greatly impact the development of eating and activity patterns of children.

True. Early environment impacts the development of eating and activity patterns of children that can track into adulthood.

BIBLIOGRAPHY

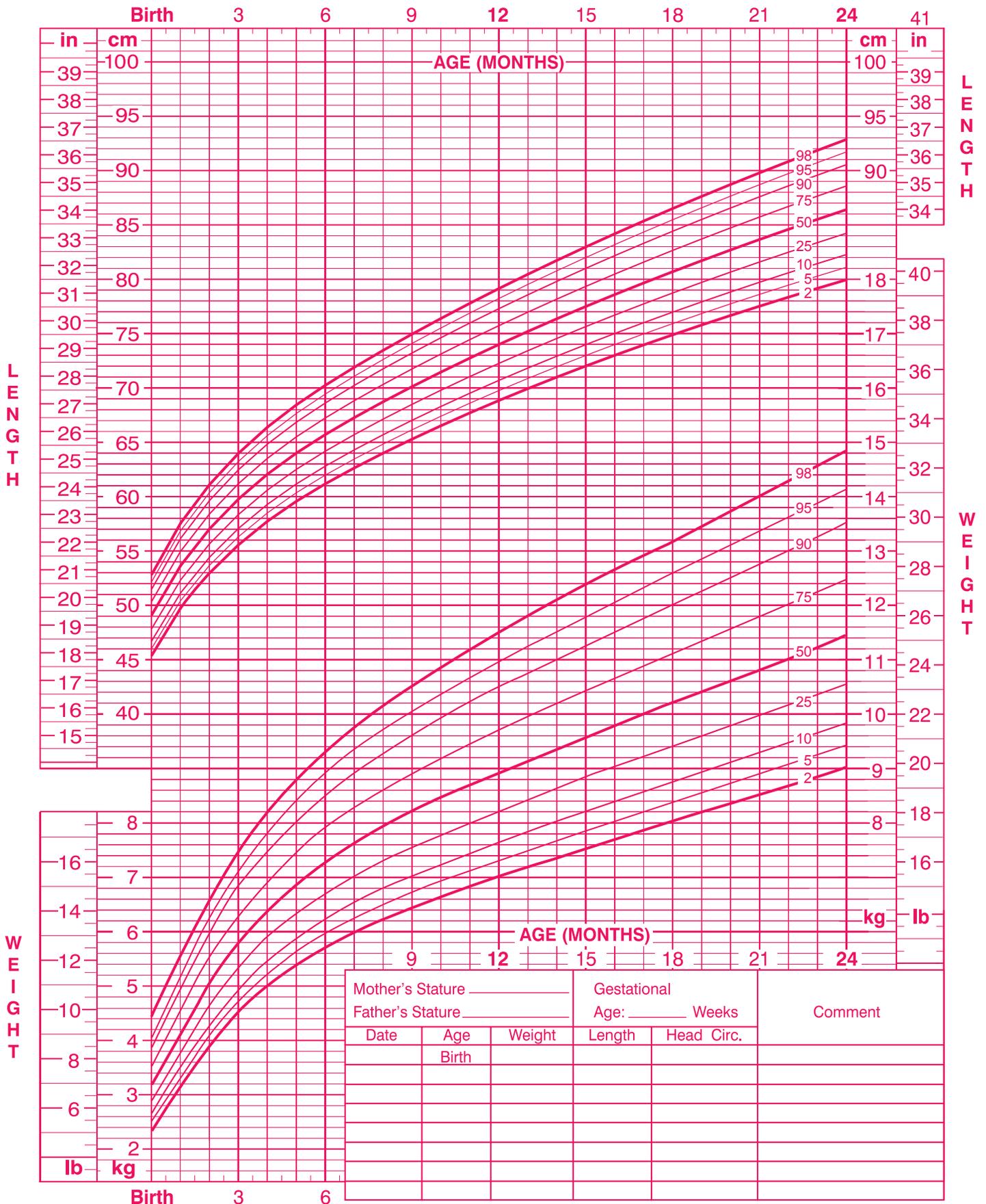
- American Academy of Pediatrics. (August 2003). Policy Statement: Prevention of pediatric overweight and obesity. *Pediatrics*, Vol. 112, Number 2, pg. 424-430.
- American Diabetes Association. (March 2000). Type 2 diabetes in children and adolescents. *Diabetes Care*, Vol. 3, Number 3, pg. 381-389.
- American Dietetic Association. (1999) *Dietary guidance for healthy children aged 2 to 11 years – Position of ADA*. 99:93-101.
Available: <http://www.eatright.org/About/Content.aspx?id=8371>
- American Obesity Association – *Childhood obesity*. (n.d.) Available: <http://www.americanobesity.org/childhoodObesity.htm>
- Arkansas Center for Health Improvement. (2004). *The Arkansas assessment of childhood and adolescent obesity*. Available: www.achi.net/childob.asp
- Arkansas Department of Health. (2001) *Pediatric nutrition surveillance system*.
- Barlow, S.E., Dietz, W.H. (1998). Obesity Evaluation and Treatment: Expert committee recommendations. *Pediatrics*, Vol. 102, Number 3. Available: www.pediatrics.org/cgi/content/full/102/3/e29
- Berg, Frances M. (2004). *Underage and overweight: America's childhood obesity crisis – What every family needs to know*. Hatherleigh Press (Chapters 2, 3).
- Birch, L.L., Fisher, J.O. (1998). Development of eating behaviors among children and adolescents. *Pediatrics*, Supplement, 539-549.
- CDCm BCGS, (2012). *Prevalence of overweight among children and adolescents: United States*. Available: http://www.cdc.gov/nchs/data/hestat/obesity_child_09_10/obesity_child_09_10.htm
- CDC. NHANES. (n.d.). *Overweight among U.S. children and adolescents*. Publication number 02-0422.
- CDC. (n.d.). *Overweight children and adolescents: Recommendations to screen, assess and manage*. Available: <http://www.cdc.gov/nccdphp/dnpa/growthcharts/training/modules/module3/text/module3print.pdf>
- Copperman, Nancy. (2004). *Medical nutrition therapy of overweight*. Presentation at Certificate of Training in Childhood and Adolescent Weight Management program.
- Davis, Jeanie L. (2005). Mom's Weight Problem Is Child's Problem, Too: But Is Overweight Tendency Genetic or Environmental? WebMD Medical News. Available: <http://www.webmd.com/parenting/news/20050125/moms-weight-problem-is-childs-problem-too>
- Dietz, W.H. (1998). Health consequences of obesity in youth: Childhood predictors of adult disease. *Pediatrics*, Supplement, 518-525.
- Enns, C.W., Mickle, S.J., Goldman, J.D. (2002). Trends in food and nutrient intakes by children in the United States. *Family Economics and Nutrition Review*, 14 (2), 56-68.
- Ogden, C.L., Flegal, K.M., Carroll, M.D., Johnson, C.L. (October 9, 2002). Prevalence and trends in overweight among U.S. children and adolescents, 1999-2000. *JAMA*, Vol. 288 (14), 1728-1732.
- Robinson, T.N. (1999). Reducing Children's television viewing to prevent obesity: A randomized controlled trial. *JAMA*, Vol. 282(16), 1561-1567.
- Satter, Ellyn. (1999). *Secrets of feeding a healthy family*. Kelcy Press.
- State of Arkansas Obesity Task Force. (2000). *The impact of obesity: Economics, health, prevention & treatment*.
- State of Iowa Obesity Task Force. (n.d.). *Child and adolescent obesity prevention*.
- Steinbeck, K.S. (2001). The importance of physical activity in the prevention of overweight and obesity in childhood: a review and an opinion. *Obesity Reviews* (2), 117-130.
- The Center for Weight and Health College of Natural Resources University of California, Berkeley. (June 2001). *Pediatric overweight: A review of the literature*.
- U.C. Berkeley, Cooperative Extension Department of Nutritional Sciences. (2000). *Childhood overweight: A fact sheet for professionals*.
- U.S. Department of Health and Human Services. (2001). *The Surgeon General's call to action to prevent and decrease overweight and obesity*.
- Williams, Christine L. (2003). Childhood obesity: New epidemic of an old disease. *Pediatric Basics*, Vol. 101, 2-6.

Birth to 24 months: Girls

Length-for-age and Weight-for-age percentiles

NAME _____

RECORD # _____

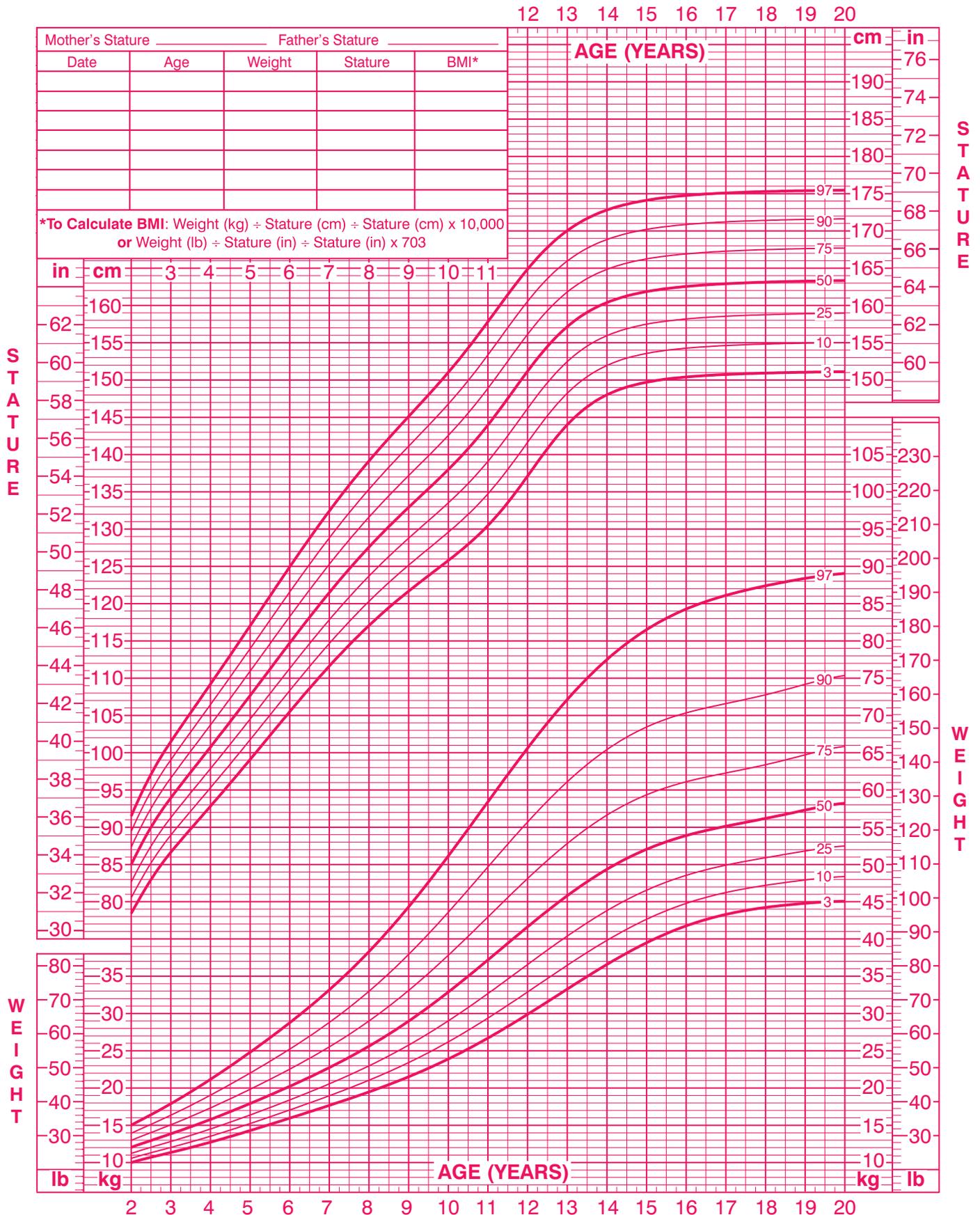


2 to 20 years: Girls

Stature-for-age and Weight-for-age percentiles

NAME _____

RECORD # _____



Published May 30, 2000 (modified 11/21/00).
 SOURCE: Developed by the National Center for Health Statistics in collaboration with
 the National Center for Chronic Disease Prevention and Health Promotion (2000).
<http://www.cdc.gov/growthcharts>

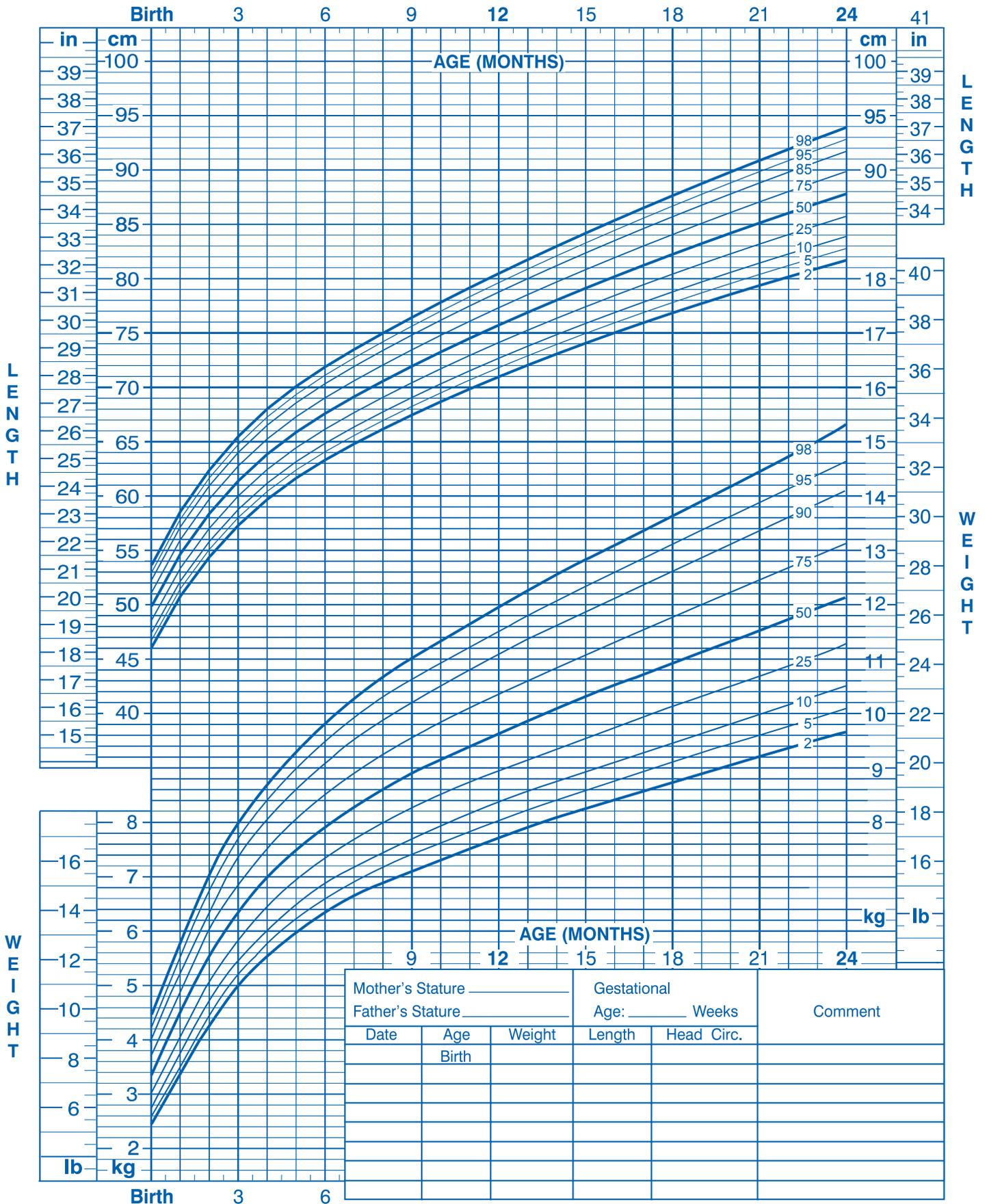


Birth to 24 months: Boys

Length-for-age and Weight-for-age percentiles

NAME _____

RECORD # _____



Published by the Centers for Disease Control and Prevention, November 1, 2009
 SOURCE: WHO Child Growth Standards (<http://www.who.int/childgrowth/en>)

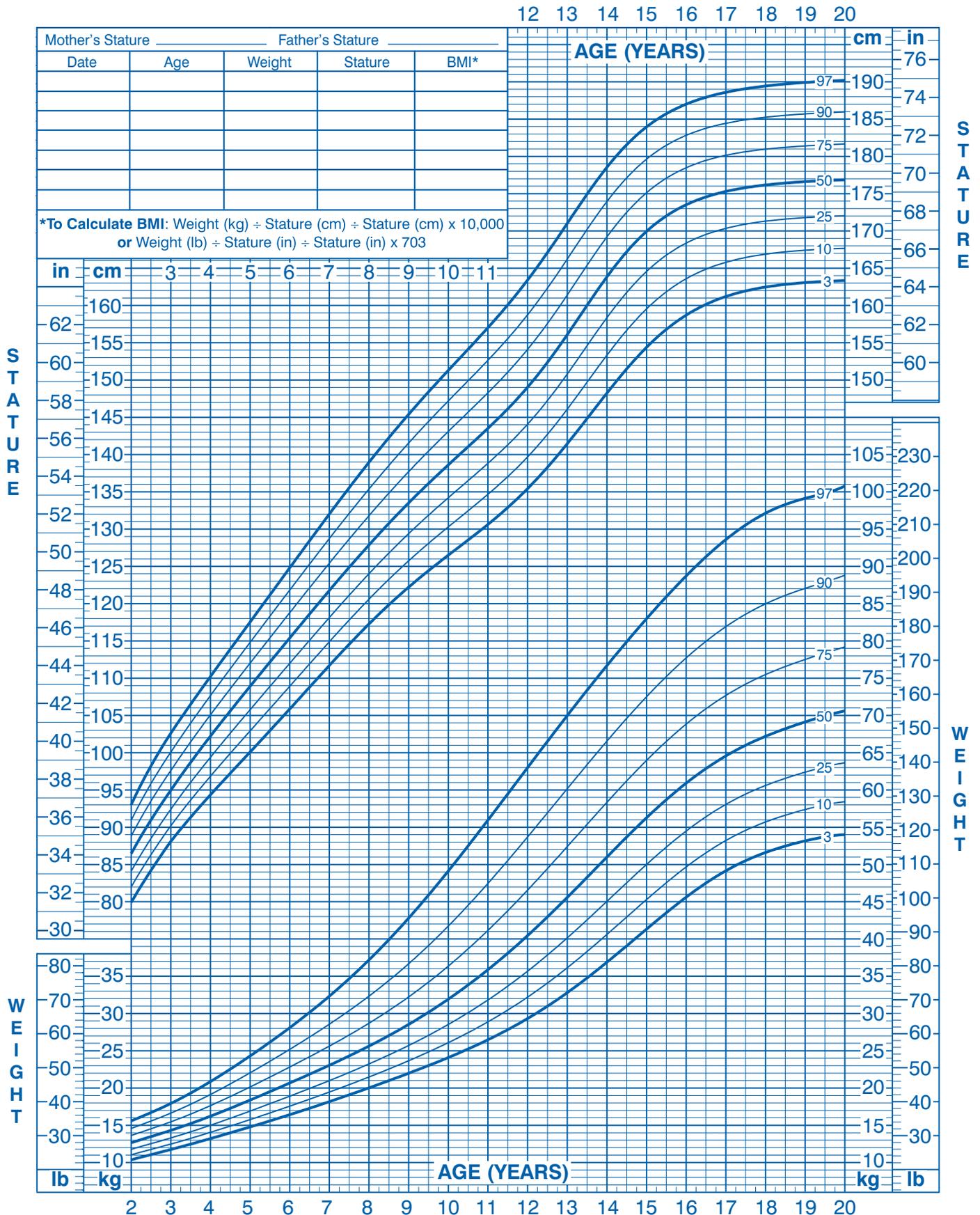


2 to 20 years: Boys

Stature-for-age and Weight-for-age percentiles

NAME _____

RECORD # _____



Published May 30, 2000 (modified 11/21/00).
 SOURCE: Developed by the National Center for Health Statistics in collaboration with
 the National Center for Chronic Disease Prevention and Health Promotion (2000).
<http://www.cdc.gov/growthcharts>



